Courses of Instruction

Dance

Dance 201 H(2-2)
Introductory Contemporary Dance I
Introductory study of the techniques of contemporary dance.

Note: Not open to Dance Majors

Dance 203 H(2-2)
Dancing: Body, Mind, Culture
An introduction to the study of dance in an academic setting.

Note: Open to Dance Majors only.

Dance 205 H(2S-2)
Introductory Contemporary Dance II
Further introductory study of the techniques of contemporary dance.

Prerequisite: Dance 201 or equivalent or consent of the Program of Dance.

Note: Not open to Dance Majors.

Dance 207 H(2S-2)
Contemporary Dance I
Elementary study of the techniques of contemporary dance.

Prerequisites: Dance 205 or equivalent and consent of the Program of Dance.

Dance 209 H(2S-2)
Contemporary Dance II
Further elementary study of the techniques of contemporary dance.

Prerequisites: Dance 207 or equivalent and consent of the Program of Dance.

Dance 211 H(2S-2)
Jazz Dance I
Introductory study of the techniques of jazz dance.

Dance 221 H(2S-2)
Ballet I
Introductory study of the techniques of ballet.

Dance 235 H(2S-2)
Conditioning for Dancers
Study of the basic principles of conditioning for dancers.

Prerequisite: Dance 203 or consent of the Program of Dance.

Senior Courses

Dance 303 H(2S-4)
Principles of Technique
Reinforcement of the basic principles of contemporary dance in preparation for more advanced study.

Prerequisites: Dance 209 or equivalent and consent of the Program of Dance.

Dance 305 H(2S-4)
Contemporary Dance III
Elementary/intermediate study of the techniques of contemporary dance.

Prerequisites: Dance 209 or equivalent and consent of the Program of Dance.

Dance 307 H(2S-4)
Contemporary Dance IV
Further elementary/intermediate study of the techniques of contemporary dance.

Prerequisites: Dance 305 or equivalent and consent of the Program of Dance.

Dance 309 H(3S-0)
Special Topics in Dance Theory
Prerequisite: Consent of the Program of Dance.

MAY BE REPEATED FOR CREDIT

Dance 311 H(2S-4)
Jazz Dance II
Elementary study of the techniques of jazz dance.

Prerequisites: Dance 211 or equivalent and consent of the Program of Dance.

Dance 313 H(2S-4)
Jazz Dance III
Further elementary study of the techniques of jazz dance.

Prerequisites: Dance 311 or equivalent and consent of the Program of Dance.

Dance 321 H(2S-4)
Ballet II
Elementary study of the techniques of ballet.

Prerequisites: Dance 221 or equivalent and consent of the Program of Dance.

Dance 323 H(2S-4)
Ballet III
Further elementary study of the techniques of ballet.

Prerequisites: Dance 321 or equivalent and consent of the Program of Dance.

Dance 331 H(2S-2)
Dance Improvisation
Experiences in individual and group improvisation. Development of skills in designing and participating in improvisational structures.

Prerequisites: Dance 209 and Dance Education 247 or equivalent; or consent of the Program of Dance.

Junior Courses

Dance 201 H(2-2)
Introductory Contemporary Dance I
Introductory study of the techniques of contemporary dance.

Note: Not open to Dance Majors

Dance 203 H(2-2)
Dancing: Body, Mind, Culture
An introduction to the study of dance in an academic setting.

Note: Open to Dance Majors only.

Dance 205 H(2S-2)
Introductory Contemporary Dance II
Further introductory study of the techniques of contemporary dance.

Prerequisite: Dance 201 or equivalent or consent of the Program of Dance.

Note: Not open to Dance Majors.

Dance 207 H(2S-2)
Contemporary Dance I
Elementary study of the techniques of contemporary dance.

Prerequisites: Dance 205 or equivalent and consent of the Program of Dance.

Dance 221 H(2S-2)
Ballet I
Introductory study of the techniques of ballet.

Dance 235 H(2S-2)
Conditioning for Dancers
Study of the basic principles of conditioning for dancers.

Prerequisite: Dance 203 or consent of the Program of Dance.

Dance 209 H(2S-2)
Contemporary Dance II
Further elementary study of the techniques of contemporary dance.

Prerequisites: Dance 207 or equivalent and consent of the Program of Dance.

Dance 211 H(2S-2)
Jazz Dance I
Introductory study of the techniques of jazz dance.

Dance 311 H(2S-4)
Jazz Dance II
Elementary study of the techniques of jazz dance.

Prerequisites: Dance 211 or equivalent and consent of the Program of Dance.

Dance 313 H(2S-4)
Jazz Dance III
Further elementary study of the techniques of jazz dance.

Prerequisites: Dance 311 or equivalent and consent of the Program of Dance.

Dance 321 H(2S-4)
Ballet II
Elementary study of the techniques of ballet.

Prerequisites: Dance 221 or equivalent and consent of the Program of Dance.

Dance 323 H(2S-4)
Ballet III
Further elementary study of the techniques of ballet.

Prerequisites: Dance 321 or equivalent and consent of the Program of Dance.

Dance 331 H(2S-2)
Dance Improvisation
Experiences in individual and group improvisation. Development of skills in designing and participating in improvisational structures.

Prerequisites: Dance 209 and Dance Education 247 or equivalent; or consent of the Program of Dance.

Dance 333 H(2S-2)
Contemporary Choreography I
Contemporary composition and choreography; the choreographic use of time, space, sound, movement and human communications.

Prerequisite: Dance 331 or equivalent or consent of the Program of Dance.

Dance 341 H(3S-0)
Early Dance History
Historical survey of dance: origins to the nineteenth century.

Dance 343 H(3S-0)
Writing About Dance
Aesthetic concepts and critical methods used in writing about dance.

Prerequisites: Dance 241 and 245 or consent of the Program of Dance.

Dance 345 H(3S-0)
Modern Dance History
Historical survey of twentieth century western theatre dance.

Dance 365 H(2S-4)
Pilates Conditioning
Study of the Pilates method of conditioning utilizing the Pilates Reformer apparatus.

Prerequisites: Dance 207 or equivalent and consent of the Program of Dance.

Dance 375 H(2-2)
Body/Mind Practices
The theory, vocabulary and application of body/mind practices.

Prerequisite: Kinesiology 261 or consent of the Program of Dance.

Dance 395 H(1S-5)
Dance Performance Practicum I
Practical experience in dance performance choreography, or artistic direction.

Prerequisite: Consent of the Program of Dance.

NOT INCLUDED IN GPA

Dance 397 H(1S-5)
Dance Performance Practicum II
Further practical experience in dance performance, choreography, or artistic direction.

Prerequisite: Consent of the Program of Dance.

Prerequisite or Corequisite: Dance 395.

NOT INCLUDED IN GPA

Dance 401 H(2S-2)
Open Contemporary Dance I
Study in the principles and techniques of contemporary dance, open to intermediate and advanced levels.

Prerequisite: Dance 307 or equivalent or consent of the Program of Dance.

Dance 403 H(2S-2)
Open Contemporary Dance II
### Courses of Instruction

Further study in the principles and techniques of contemporary dance, open to intermediate and advanced levels.

**Prerequisite:** Dance 401 or equivalent or consent of the Program of Dance.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dance 405</td>
<td>H(2S-4)</td>
<td>Contemporary Dance V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate study of the techniques of contemporary dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 307 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 407</td>
<td>H(2S-4)</td>
<td>Contemporary Dance VI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further intermediate study of the techniques of contemporary dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 455 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 411</td>
<td>H(2S-4)</td>
<td>Jazz Dance IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate study of the techniques of jazz dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 313 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 413</td>
<td>H(2S-4)</td>
<td>Jazz Dance V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further intermediate study of the techniques of jazz dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
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<td>Dance 411 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 421</td>
<td>H(2S-4)</td>
<td>Ballet IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate study of the techniques of ballet.</td>
</tr>
<tr>
<td>Prerequisites:</td>
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<td>Dance 323 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 423</td>
<td>H(2S-4)</td>
<td>Ballet V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further intermediate study of the techniques of ballet.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 421 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 431</td>
<td>H(2S-2)</td>
<td>Contemporary Choreography II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further study of contemporary composition and choreography.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 333 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Note:</td>
<td></td>
<td>Not open to students with credit in Dance 430.</td>
</tr>
<tr>
<td>Dance 433</td>
<td>H(2S-2)</td>
<td>Contemporary Choreography III</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Continued further study of contemporary composition and choreography.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 431 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Note:</td>
<td></td>
<td>Not open to students with credit in Dance 430.</td>
</tr>
<tr>
<td>Dance 455</td>
<td>H(2S-4)</td>
<td>Contemporary Dance VI(a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Continuing intermediate study of the techniques of contemporary dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 407 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 457</td>
<td>H(2S-4)</td>
<td>Contemporary Dance VI(b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further continuing intermediate study of the techniques of contemporary dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 455 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 463</td>
<td>H(2S-2)</td>
<td>Applied Movement Principles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The analysis of dance movement and training, incorporating appropriate studies in anatomy; dance injuries and their prevention, care and rehabilitation; posture correction and body conditioning for dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Kinesiology 261 and two of Dance 205, 207, 211, 221 or equivalent.</td>
</tr>
<tr>
<td>Dance 475</td>
<td>H(2-2)</td>
<td>Special Topics in Body/Mind Practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A focus on one or more of the well-known Body/Mind practices such as Feldenkrais, Alexander, Yoga, Body/Mind Centering, Bartenieff Fundamentals, Laban Movement Analysis.</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Dance 375 or consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 491</td>
<td>H(2S-2)</td>
<td>Design for Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Study of the design and production components of dance performance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 333 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 495</td>
<td>H(1S-5)</td>
<td>Dance Performance Practicum III</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advanced practical experience in dance performance, choreography, or artistic direction.</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Consent of the Program of Dance.</td>
</tr>
<tr>
<td>Prerequisite or Corequisite:</td>
<td></td>
<td>Dance 397</td>
</tr>
<tr>
<td>Dance 499</td>
<td>H(2S-4)</td>
<td>Performance Techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A study of practical techniques in deepening performance integrity.</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 505</td>
<td>H(2S-4)</td>
<td>Contemporary Dance VII</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate/advanced study of the techniques of contemporary dance.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 407 or equivalent and consent of the Program of Dance.</td>
</tr>
<tr>
<td>MAY BE REPEATED FOR CREDIT</td>
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</tr>
<tr>
<td>Dance 517</td>
<td>H(1S-6)</td>
<td>Directed Studies I</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 572</td>
<td>F(1S-6)</td>
<td>Directed Studies II</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 574</td>
<td>F(0-7)</td>
<td>Travel Study</td>
</tr>
<tr>
<td></td>
<td></td>
<td>An international perspective on dance training, performance and culture.</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 581</td>
<td>H(1S-6)</td>
<td>Special Topics in Dance I</td>
</tr>
<tr>
<td>Prerequisite:</td>
<td></td>
<td>Consent of the Program of Dance.</td>
</tr>
<tr>
<td>Dance 591</td>
<td>H(1S-5)</td>
<td>Dance Production Practicum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical experiences in lighting, sound, costuming, promotion and production of dance performances.</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td></td>
<td>Dance 491 and consent of the Program of Dance.</td>
</tr>
<tr>
<td>NOT INCLUDED IN GPA</td>
<td></td>
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</tr>
<tr>
<td>Dance 587</td>
<td>H(2S-4)</td>
<td>Dance Education DCED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instruction offered by members of the Faculties of Kinesiology and Fine Arts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students should also see course listings under the headings Dance Education Activity/Theory, Kinesiology, Outdoor Pursuits, Outdoor Pursuits Activity/Theory, Physical Education, and Physical Education Activity/Theory.</td>
</tr>
<tr>
<td>Dance Education 225</td>
<td>H(1-3)</td>
<td>(formerly Dance Education 221)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aesthetic Movement Principles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>An overview of aesthetic movement principles as they relate to dance in culture, education, recreation, and aesthetic sports.</td>
</tr>
<tr>
<td>Note:</td>
<td></td>
<td>Open to Pedagogy Majors in Kinesiology and BA Dance Majors only.</td>
</tr>
<tr>
<td>Dance Education 243</td>
<td>H(1-3)</td>
<td>Introduction to Dance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experiential survey of contemporary dance forms such as modern, jazz, and social dance; and an overview of the role of dance in society.</td>
</tr>
</tbody>
</table>
Courses of Instruction

<table>
<thead>
<tr>
<th>Dance Education 247</th>
<th>H (2-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(formerly Dance Education 301)</strong></td>
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</table>

**Creative Dance: A Study of Laban Analyses**
Creative dance through the study of movement themes as defined by Rudolf Laban.

<table>
<thead>
<tr>
<th>Dance Education 251</th>
<th>H(2-2)</th>
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</thead>
<tbody>
<tr>
<td><strong>Introduction to Music for Dance</strong></td>
<td></td>
</tr>
<tr>
<td>An introduction to the relationship between music and dance.</td>
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</tr>
</tbody>
</table>

**Senior Courses**

<table>
<thead>
<tr>
<th>Dance Education 303</th>
<th>H(2-2)</th>
</tr>
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<tbody>
<tr>
<td><strong>Special Topics</strong></td>
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**MAY BE REPEATED FOR CREDIT**

<table>
<thead>
<tr>
<th>Dance Education 325</th>
<th>H(1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(formerly Dance Education 321)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Dance in Schools**
Content, planning, and teaching methodology in school dance.
**Prerequisite:** Dance Education 221, 225, or 247.
**Note:** Open to Pedagogy Majors in Kinesiology and BA Dance Majors only.

<table>
<thead>
<tr>
<th>Dance Education 427</th>
<th>H(1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social and Recreational Dance Forms</strong></td>
<td></td>
</tr>
<tr>
<td>Practical experience in a range of social and recreational dance forms.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dance Education 449</th>
<th>H(2-2)</th>
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</thead>
<tbody>
<tr>
<td><strong>Dance Teaching Techniques</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Principles and practice of dance instruction.
**Prerequisites:** Kinesiology 261, Dance 307, 313 or 323, and 463, or consent of the Program of Dance. |

<table>
<thead>
<tr>
<th>Dance Education 481</th>
<th>H(3-0)</th>
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</thead>
<tbody>
<tr>
<td><strong>Dance and Culture</strong></td>
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</tbody>
</table>
| The study of dance as a cultural practice.
**Prerequisite:** One of Dance Education 243, Dance 341 or 345. |

<table>
<thead>
<tr>
<th>Dance Education 493</th>
<th>H(1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(formerly Dance Education 491)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dance Teaching Practicum</strong></td>
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</tr>
</tbody>
</table>
| Practical experience teaching dance in school and recreational settings.
**Prerequisite:** Consent of the Faculty.
**NOT INCLUDED IN GPA** |

<table>
<thead>
<tr>
<th>Dance Education 503</th>
<th>H(3-0)</th>
</tr>
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<tbody>
<tr>
<td><strong>Special Topics</strong></td>
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</tbody>
</table>
| **Prerequisite:** Consent of the Faculty.
**MAY BE REPEATED FOR CREDIT** |

**Graduate Course**

<table>
<thead>
<tr>
<th>Dance Education 603</th>
<th>H(3-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special Topics</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Selected topics in Dance Education and related subjects.
**Prerequisite:** Consent of the Faculty. |

**MAY BE REPEATED FOR CREDIT**

<table>
<thead>
<tr>
<th>Dance Education Activity/Theory</th>
<th>DEAT</th>
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<tbody>
<tr>
<td><strong>DEVELOPMENT STUDIES (DEST)</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Development Studies 201</th>
<th>H(2-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(formerly Development Studies 391)</strong></td>
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</tbody>
</table>

**Introduction to Northern and International Development**
An interdisciplinary course focusing on development in both a northern and international context. Explores factors that shape development processes; introduces concepts and issues such as poverty, colonialism, and self-determination; human ecology and sustainable development; and appropriate technology. Examines the origins, purposes, and performance of contemporary national and international institutions and their effect on people in different geographical and socio-economic contexts.

**Senior Courses**

<table>
<thead>
<tr>
<th>Development Studies 375</th>
<th>H(3-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender and Development</strong></td>
<td></td>
</tr>
</tbody>
</table>

Examines development from the critical perspective of the key role played by gender in development. Case studies from Canadian and international contexts will provide illustrative material for analyzing the issues that emanate from the gendered nature of development processes and practices.

<table>
<thead>
<tr>
<th>Development Studies 393</th>
<th>H(3-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theories and Applications of Development</strong></td>
<td></td>
</tr>
</tbody>
</table>

A study of development theories and applications through northern and international case studies. Examines practical manifestations of those theories and approaches in development planning, implementation, and praxis including Modernization theory; dependency theory; basic needs approach; neo-liberalism; the staple thesis; globalization; women in development; gender and development.
**Prerequisite:** Development Studies 201 or 391 or consent of the Associate Dean (Student Affairs and Curriculum).
### Courses of Instruction

**Drama**

Instruction offered by members of the Department of Drama in the Faculty of Fine Arts.

Department Head – D. McCullough

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>Drama 300</td>
<td>F(2S-4) Advanced Acting I</td>
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<td></td>
</tr>
<tr>
<td>Drama 313</td>
<td>H(2S-2) Introduction to Design for Theatre I</td>
<td></td>
<td>Drama 319 or consent of the Department</td>
</tr>
<tr>
<td>Drama 317</td>
<td>H(2S-2) Introduction to Stage Sound</td>
<td></td>
<td>Drama 313 or consent of the Department</td>
</tr>
<tr>
<td>Drama 319</td>
<td>H(2S-2) Graphics and Model Building for Theatre</td>
<td></td>
<td>Drama 222 or consent of the Department</td>
</tr>
<tr>
<td>Drama 321</td>
<td>H(2S-2) Stage Management</td>
<td></td>
<td>Drama 222 or consent of the Department</td>
</tr>
<tr>
<td>Drama 325</td>
<td>H(4-0) History of Civil Dress and Decor I</td>
<td></td>
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</tr>
<tr>
<td>Drama 330</td>
<td>F(3S-2) Seminar in Drama</td>
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<tr>
<td>Drama 340</td>
<td>F(4S-0) History of the Theatre: Origins to the Late Eighteenth Century</td>
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</tr>
<tr>
<td>Drama 342</td>
<td>F(3-0) History of the Theatre: The Late Eighteenth Century to the Present</td>
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<tr>
<td>Drama 344</td>
<td>F(3-0) Developmental Drama</td>
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<td>Drama 356</td>
<td>F(3S-0) Canadian Theatre and Drama</td>
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<td>Drama 360</td>
<td>F(2S-2) Theatre for Young Audiences I</td>
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<td>Drama 362</td>
<td>F(2S-2) Performance Media</td>
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<tr>
<td>Drama 371</td>
<td>H(2S-2) Introduction to Playwriting</td>
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### Senior Option Courses

The following listing is provided to assist students in their selection of related groups of Drama courses.

<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>371</td>
<td>375 377 471 571</td>
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### Production Courses

- **Drama 240**: F(3-1T) Introduction to Drama

  Interpretation and study of dramatic genres related to the Department's season of plays; introduction to play analysis.

- **Drama 300**: F(2S-4) Advanced Acting I

  Further development of fundamental acting techniques; participation in the Department's season of plays may be required.

- **Drama 313**: H(2S-2) Introduction to Design for Theatre I

  Basic set, props, lighting and costume design theory, process and technique for a variety of theatre forms and performance styles.

- **Drama 317**: H(2S-2) Introduction to Stage Sound

  Basic principles of sound for the theatre: recording, reinforcement and reproduction techniques and methods used in creating a production design.

- **Drama 319**: H(2S-2) Graphics and Model Building for Theatre

  An introduction to graphic and model building techniques for the theatre designer.

- **Drama 321**: H(2S-2) Stage Management

  Principles of stage management; a stage management project related to one of the presentations in the Department's season of plays.

- **Drama 325**: H(4-0) History of Civil Dress and Decor I

  An overview of the history of civil dress and the allied arts of architecture and decor from prehistory to the Renaissance.

- **Drama 330**: F(3S-2) Seminar in Drama

  Critical examination of each play performed in the Department's season of plays centred upon their genres and historical settings; staging requirements for contemporary productions and other works by the same authors and their contemporaries may also be studied.

- **Drama 340**: F(4S-0) History of the Theatre: Origins to the Late Eighteenth Century

  Theatre as an art and social phenomenon in selected cultures, emphasizing the development of Western traditions.

- **Drama 344**: F(3-0) History of the Theatre: The Late Eighteenth Century to the Present

  Popular and elite traditions of theatre in Western Europe and North America.

- **Drama 356**: F(3S-0) Canadian Theatre and Drama

  History, literature, and cultural milieu of Canadian theatre from its colonial origins to the present day.

- **Drama 360**: F(2S-2) Developmental Drama I

  Explorations in personal creativity; practical experience in creative drama activity; the principles, theories, and application of creative drama.

- **Drama 362**: F(2S-2) Theatre for Young Audiences I

  History and objectives of theatre for the young audience; practical work in the principles and techniques of acting, directing and producing plays.

- **Drama 364**: F(2S-2) Performance Media

  Methods of adapting alternative spaces for performance, with emphasis on non-traditional modes of production, exploration and investigation of existing hardware and software to facilitate image and sound manipulation in the creation of performance environments.

- **Drama 371**: H(2S-2) Introduction to Playwriting

  Directed exercises in writing for the theatre; workshop sessions for developing and reworking
Courses of Instruction

Prerequisites: Drama 200, 222, and 240 or consent of the Department.

Drama 375 H(1.5-1.5)

Fundamentals of Puppetry
History and development of puppetry; basic design, construction and manipulation of hand, rod and shadow puppets.

Drama 377 H(1.5-1.5)

Puppet Theatre Production
Production of puppet shows; development of scripts, stage design, construction and performance.
Prerequisite: Drama 375 or consent of the Department.

Drama 391 H(0-6)
Performance Practicum I
Practical experience in theatrical production.
Prerequisites: Drama 200, 222, and 240 or consent of the Department.
Note: Not open to students with credit in Drama 390.

Drama 393 H(0-6)
Performance Practicum II
Further practical experience in theatrical production.
Prerequisite: Drama 391.
Note: Not open to students with credit in Drama 390.

Drama 400 F(3S-6)
Advanced Acting II
Further study in the techniques of acting; performance in the Department's season of plays may be required.
Prerequisites: Drama 300 and consent of the Department.

Drama 409 H(1-4)
Scenic Painting
Prerequisites: Drama 313, 315 and 319 or consent of the Department.

Drama 410 F(2-2)
Fundamentals of Directing
Theories and practical techniques of directing plays; students may be required to observe or assist faculty directors. Studies will be coordinated with the Department’s season of plays whenever possible.
Prerequisites: Drama 200, 222, and 340 or consent of the Department.

Drama 411 H(1-4)
Advanced Scenic Painting
Further development of skills and techniques of advanced scenic art; emphasis on the acquisition of advanced professional skills and disciplines.
Prerequisite: Drama 409 or consent of the Department.

Drama 415 H(2-2)
Advanced Lighting Design and Technique I
Advanced studies in lighting design for the theatre. Studies in design and presentation for lighting various forms of contemporary theatre events and spaces.
Prerequisite: Drama 315 or consent of the Department.
Note: Not open to students with credit in Drama 426.

Drama 417 H(2-2)
Advanced Lighting Design and Technique II
Continuation of Drama 415. Advanced studies in lighting design for the theatre.
Prerequisite: Drama 415 or consent of the Department.
Note: Not open to students with credit in Drama 426.

Drama 419 H(2-2)
Advanced Scene Design and Technique I
Set design and scenography for a variety of contemporary theatre forms and genres.
Prerequisite: Drama 315 or consent of the Department.
Note: Not open to students with credit in Drama 426.

Drama 423 H(2-2)
Advanced Scene Design and Technique II
Continuation of Drama 419 with a heightened emphasis on the interpretation of text to design.
Prerequisite: Drama 419 or consent of the Department.
Note: Not open to students with credit in Drama 426.

Drama 425 H(2S-2)
Advanced Costume Design and Technique I
Costume design and technique in relation to major styles of presentation.
Prerequisites: Drama 315, 319 and consent of the Department.

Drama 429 H(2S-2)
Advanced Costume Design and Technique II
Continuation of Drama 425, costume design and technique in relation to major styles of presentation.
Prerequisite: Drama 425.

Drama 440 F(4S-0)
Seminar in Drama II
Critical study of plays in the Department's season of plays suited to students in their third and fourth years; critical analysis and historical interpretation is integrated with a careful consideration of requirements for staging; plays generically or historically related may also be studied.
Prerequisite: Drama 340 or consent of the Department.

Drama 460 F(2S-2)
Developmental Drama II
Theory and techniques of developing limited-resource productions and collective creations; other applications of dramatic techniques are investigated.
Prerequisite: Drama 360 or consent of the Department.

Drama 462 F(2S-2)
Theatre for Young Audiences II
Prerequisites: Drama 362 or consent of the Department.

Drama 471 H(2S-2)
Playwriting
Interpretation of roles and special problems in performance; performance in the Department's season of plays may be required.
Prerequisites: Drama 371 and consent of the Department.

Drama 491 H(0-6)
Performance Practicum III
Further practical experience in theatrical production.
Prerequisite: Drama 393.
Note: Not open to students with credit in Drama 490.

Drama 493 H(0-6)
Performance Practicum IV
Further practical experience in theatrical production.
Prerequisite: Drama 491.
Note: Not open to students with credit in Drama 490.

Drama 500 F(3S-6)
Advanced Acting III
Interpretation of roles and special problems in performance; performance in the Department's season of plays may be required.
Prerequisites: Drama 400 and consent of the Department.

Drama 510 F(2S-3)
Advanced Directing
Advanced Directing
Prerequisites: Drama 410 and consent of the Department.

Drama 517 H2S-2)
Advanced Design for Theatre I
Advanced set, props, lighting, and costume design theory, process and technique for a variety of theatre forms and performance styles.
Prerequisite: Consent of the Department.

Drama 519 H(2S-2)
Advanced Design for Theatre II
Continuation of Drama 517.
Prerequisites: Drama 517 and consent of the Department.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Drama 531</td>
<td>Scene Painting I</td>
<td>H(2S-2)</td>
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<tr>
<td>Drama 533</td>
<td>Scene Painting II</td>
<td>H(2S-2)</td>
</tr>
<tr>
<td>Drama 540</td>
<td>Seminar in Drama III</td>
<td>F(4S-0)</td>
</tr>
<tr>
<td>Drama 560</td>
<td>Developmental Drama III</td>
<td>F(2S-2)</td>
</tr>
<tr>
<td>Drama 571</td>
<td>Directed Studies I</td>
<td>H(2S-0)</td>
</tr>
<tr>
<td>Drama 572</td>
<td>Directed Studies II</td>
<td>F(2S-0)</td>
</tr>
<tr>
<td>Drama 590</td>
<td>Professional Theatre Internship</td>
<td>F(1S-10)</td>
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<tr>
<td>Drama 591</td>
<td>Performance Practicum V</td>
<td>H(0-6)</td>
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<tr>
<td>Drama 592</td>
<td>Performance Practicum VI</td>
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**Graduate Courses**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Drama 605</td>
<td>Methods in Theatre Research</td>
<td>H(2-0)</td>
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**Drama/East Asian Studies**

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<tr>
<th>Course Code</th>
<th>Title</th>
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<tr>
<td>Drama 607</td>
<td>Director, Designer, and Mise-en-scene</td>
<td>H(2S-2)</td>
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<tr>
<td>Drama 610</td>
<td>Selected Problems in Directing</td>
<td>F(2S-3)</td>
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<tr>
<td>Drama 623</td>
<td>Seminar in Scene Design</td>
<td>H(2S-2)</td>
</tr>
<tr>
<td>Drama 624</td>
<td>Seminar in Costume Design</td>
<td>H(2S-2)</td>
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<tr>
<td>Drama 625</td>
<td>Seminar in Lighting Design</td>
<td>H(2S-2)</td>
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<tr>
<td>Drama 626</td>
<td>Seminar in Technical Direction</td>
<td>H(2S-2)</td>
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<tr>
<td>Drama 627</td>
<td>Seminar and Practicum: Contemporary Theatre, 1945 - Present</td>
<td>F(3S-0)</td>
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<tr>
<td>Drama 629</td>
<td>Theatre at the Banff Centre</td>
<td>H(0-3)</td>
</tr>
<tr>
<td>Drama 630</td>
<td>Seminar and Practicum in Developmental Drama</td>
<td>F(2S-3)</td>
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<tr>
<td>Drama 631</td>
<td>Seminar and Practicum in Theatre for Young Audiences</td>
<td>F(2S-3)</td>
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**East Asia**

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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Dutch 317</td>
<td>Dutch Civilization</td>
<td>H(3-0)</td>
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**Senior Courses**

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>East Asia 300</td>
<td>Introduction to East Asia</td>
<td>F(3-0)</td>
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<tr>
<td>East Asia 500</td>
<td>Contemporary Issues in East Asia</td>
<td>F(3-0)</td>
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**East Asian Studies**

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>East Asian Studies 317</td>
<td>Understanding East Asia</td>
<td>H(3-0)</td>
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</table>
Courses of Instruction

Primary focus on China, Japan, Korea and Taiwan.

Note: Not open to students with credit in or concurrently registered in East Asia 300.

East Asian Studies 319  
**East Asian Values in a Canadian Setting**
Examines the presence of East Asian values within Canada, their potential for greater acceptance in and contribution to Canadian life, and changes that would facilitate the acceptance of East Asians into the Canadian mainstream. East Asian values will be examined generically, as well as specifically to the cultures of China, Japan, Korea and Vietnam.

Note: Not open to students with credit in General Studies 301.04.

Note: Previous course work in East Asian culture would be advantageous to the student.

East Asian Studies 321  
**Introduction to the Calgary Chinese Community**
Provides instruction on the direct experience of important aspects of the Calgary Chinese community, including its history, commercial sector, entertainment facilities, and its cultural, social, and religious organizations.

Note: Not open to students with credit in General Studies 301.06.

Note: Course requires off-campus attendance with a considerable amount of walking involved.

Note: Until August 15, preference in enrollment is given to Majors in East Asia.

East Asian Studies 403  
**East Asian Perspectives on the Environment**
Focuses on traditional East Asian attitudes to the environment. Investigates the philosophical foundations, concrete measures arising from, and positive consequences of these attitudes. Outlines environmental problems in western nations, including more modern developments in East Asia, as a demonstration of the difficulty and need of contributing to restoration and preservation of the environment. Concludes with an examination of how traditional East Asian attitudes could potentially benefit the environment today.

Note: Previous course work in East Asian culture would be advantageous to the student.

Ecology ECOL

Instruction offered by members of the Department of Biological Sciences in the Faculty of Science.

Department Head – D.M. Reid

† Limited amounts of non-scheduled class time involvement will be required for these courses.

**Senior Courses**

Ecology 413  
**Field Course in Ecology**
An examination of ecological principles and techniques through field exercises, including studies of terrestrial and aquatic populations, communities and ecosystems. The course is held at the Kananaskis Centre for Environmental Research in the two weeks immediately prior to the commencement of the Fall Session.

Prerequisite: Biology 313.

Note: Enrollment in this course may be limited. See explanation in the Program section of this Calendar.

Ecology 417  
**Aquatic Communities and Ecosystems**
Community composition and dynamics at the various trophic levels of aquatic ecosystems. Temporal and spatial changes in community composition, physical and chemical conditions, and their effects on the ecosystem. There will be a full week-end field trip.

Prerequisites: Biology 313 and 315 or consent of the Department.

Note: Enrollment in this course may be limited. See explanation in the Program section of this Calendar.

Ecology 419  
**Terrestrial Communities and Ecosystems**

Prerequisites: Biology 313 and 315 or consent of the Department.

Note: Enrollment in this course may be limited. See explanation in the Program section of this Calendar.

Ecology 425  
**Quantitative Biology II**
Quantitative analysis as applicable to ecological research. Methodologies and models will be presented and analyzed. Particular emphasis will be placed on experimental design, regression analysis, and the study of spatial dispersion.

Prerequisites: Biology 313 and 315.

Note: Enrollment in this course may be limited. See explanation in the Program section of this Calendar.

Ecology 429  
**Ecology of Individuals**
Ecological and evolutionary perspectives on physiology and behaviour. This course focuses on the influences on resource acquisition, maintenance, growth, reproduction and their implications for survival and fertility.

Prerequisite: Biology 313.

Prerequisite or Corequisite: Ecology 425.

Note: Enrollment in this course may be limited. See explanation in the Program section of this Calendar.

Ecology 439  
**Ecology of Populations**
A conceptual and practical treatment of population ecology including: population growth, demography, life histories, population dynamics, competition, predation and mutualism.

Prerequisite: Ecology 429.

Note: Enrollment in this course may be limited. See explanation in the Program section of this Calendar.

Ecology 491  
**Ecological Entomology**
Insect diversity. Terrestrial and aquatic adaptations. Chemical ecology and insect relationships with plants. Behavioural ecology with emphasis on social insects. Insect populations and their natural and artificial control.

Prerequisites: Biology 233 and 313.

Note: Offered in odd-even dated academic years.

Ecology 501  
**Ecological and Evolutionary Applications**
A class project course in which students apply their understanding of ecological and evolutionary concepts and their analytical skills to investigate selected problems in detail. Project topics vary from year to year and will include fundamental and applied problems. Formal written and oral reports will be presented as a necessary component of the course.

Prerequisite: Ecology 417.

Prerequisites or Corequisites: Biology 401, Ecology 419 and 439.

Note: Ecology 501 should be taken in the final year of the program.

Ecology 507  
**Special Problems in Ecology**
Lectures, seminars, term papers and training in theoretical and/or laboratory methods. After consultation with a Departmental faculty member who will supervise the chosen problem, a permission form obtained from the Department Office must be signed by the course supervisor before a student can register.

Prerequisites: Third or higher-year standing and consent of the Department.

MAY BE REPEATED FOR CREDIT

Ecology 527  
**Ecology of Fishes**
The ecology of fishes with an emphasis on freshwater systems. Fish will be used as models for examining ecological principles and theory at various levels of organization including physiologi- cal, behavioural, population and community ecology. Topics covered include: morphology, systematics, foraging, bioenergetics, life history strategies, population dynamics and the role of fish in aquatic food webs.

Prerequisites: Biology 313, and one of Ecology 417 or Zoology 477.02.

Note: Offered in even-odd dated academic years.

Ecology 528  
**Independent Studies in Ecology**
Original and independent thought, practical research and the completion of written and oral reports. After consultation with a Departmental faculty member who will supervise the chosen problem, a permission form obtained from the Department Office must be signed by the course supervisor before a student can register.

Prerequisites: Fourth-year standing and consent of the Department.

MAY BE REPEATED FOR CREDIT

Ecology 530  
**Honours Research Project in Ecology**
Research project under the direction of one or more faculty members in the Department of Biological
Courses of Instruction

Graduate Courses

Enrollment in any Graduate Course requires consent of the Department.

Only where appropriate to a student’s program may graduate credit be received for courses numbered 500-599. 600-level courses are available with permission to undergraduate students in the final year of their programs.

Economics 603  H(3-0)  
Advanced Behavioural Ecology

Current problems and recent research in areas of particular significance. Topics will vary from year to year.

Note: Offered in even-odd dated academic years.

MAY BE REPEATED FOR CREDIT

Economics 607  H(0-6)  
Limnology and Oceanography

Lectures, seminars and projects in the areas of limnology, aquatic ecology and oceanography.

Economics 677  H(0-6)  
Advanced Population Ecology

The theory and practice of the study of populations, methods of population estimation, factors affecting populations, and systems approaches to the modelling of populations.

Economics 731  H(3-0)  
Advanced Plant Ecology

Current problems and recent research in areas of particular significance. Topics will vary from year to year.

MAY BE REPEATED FOR CREDIT

Economics ECON

Instruction offered by members of the Department of Economics in the Faculty of Social Sciences.

Department Head – E.A. Wilman

Junior Courses

Economics 201  H(3-1T)  
Principles of Microeconomics

Principles of consumption, production, exchange: market and firm equilibrium under different competitive conditions. These principles are applied to various contemporary problems in the Canadian economy, such as the changing structure of agriculture, foreign ownership and control, and pollution.

Economics 203  H(3-1T)  
Principles of Macroeconomics

National income determination, the monetary and banking system, and elementary fiscal and monetary policies. Contemporary problems of unemployment, inflation, economic growth, business cycles and the international economy.

Prerequisite or Corequisite: Economics 201 or consent of the Department.

Economics 209  (Engineering 209)  H(3-1T)  
Engineering Economics

The basic tools and methodology of engineering economic studies. Topics include investment decisions, theory of replacement, economies of scale, externalities, social decision making and government regulation. Examples are drawn from engineering projects.

Prerequisite: Registration in the Faculty of Engineering with second year standing or higher. If not registered in the Faculty of Engineering, consent of the Department of Economics.

Senior Courses

Economics 301  H(3-0)  
Intermediate Economic Theory - Microeconomics I

Demand, production and costs in a market economy. Pricing in perfectly and imperfectly competitive markets.

Prerequisites: Economics 201/203 or consent of the Department.

Economics 303  H(3-0)  
Intermediate Economic Theory - Macroeconomics I

Introduction to the analysis of macroeconomic issues including the causes of recessions and unemployment, the determination of exchange rates, and the effects of government policies.

Prerequisites: Economics 201/203 or consent of the Department.

Economics 305  H(3-1T)  
Computational Optimization and Economic Applications I

The use of linear optimization methods to structure and solve numerical resource allocation problems. Topics include model formulation, solution techniques, microcomputer software and duality. Numerous practical applications to economic, management and energy problems, including cost-benefit analysis.

Prerequisite: Economics 201 or consent of the Department.

Economics 307  H(3-1T)  
Computational Optimization and Economic Applications II

Extensions of methods and models of linear optimization, including nonlinear optimization, with applications to economic, management, and energy problems.

Prerequisite: Economics 305 or consent of the Department.

Economics 309  H(3-0)  
Microeconomics for Economics and Society

Microeconomic concepts, including consumer behaviour, firm behaviour, competitive markets, factor markets, general equilibrium, market failure, welfare economics, and social choice with an emphasis on public policy applications.

Prerequisite: Economics 201 or consent of the Department.

Note: Credit for both Economics 309 and either 357 or 529 will not be allowed.

Note: Designed for students majoring in Economics and Society for students not majoring in Economics.

Economics 311  H(3-1)  
Computer Applications in Economics

Use of spreadsheets for economics applications, including project evaluation with financial-economic functions, oil and gas prospect evaluation, investment portfolio management with database functions, database retrieval, and various topics in micro- and macro-economics.

Prerequisites: Economics 201/203 or consent of the Department.

Economics 313  H(3-0)  
Macroeconomics for Economics and Society

Analyzes the behaviour of macroeconomic variables such as Gross Domestic Product, interest rates, inflation, unemployment, balance of payments and the foreign exchange rate. Emphasis will be on monetary and fiscal policy applications.

Prerequisites: Economics 201 and 203 or consent of the Department.

Note: Credit for both Economics 313 and either 359 or 531 will not be allowed.

Note: Designed for students majoring in Economics and Society and for students not majoring in Economics.

Economics 315  H(3-0)  
Introduction to Econometrics I

Introduction to techniques used in quantifying economic relationships. Topics include estimation and testing of hypotheses, forecasting and construction of prediction intervals, use of appropriate functional forms, detection and correction of measurement problems, and use of programs emphasizing single equation regression analysis.

Prerequisites: Economics 201/203 and Statistics 213, or consent of the Department.

Note: Credit for both Economics 315 and 523 will not be allowed.

Economics 321  H(3-0)  
The Global Trading System

Introduction to the theory of international trade; provides a basis for examining Canadian trade policy, and regional and world trade institutions such as the WTO and NAFTA. Topics include: tariffs, non-tariff barriers and enhancements, countervail and anti-dumping action, multinational enterprises and international joint ventures.

Prerequisites: Economics 201/203 or consent of the Department.

Economics 323  H(3-0)  
Natural Gas Markets

Operation of the natural gas industry in North America. Economics of exploration, development, production, marketing and transportation of natural gas. Impact of government regulations and
Courses of Instruction

Economics 325 H(3-0)  
**Petroleum in the North American Economy**  
The operation of the crude petroleum industry in North America, with particular reference to the exploration decision, market structure, and particular policy questions such as conservation, special taxation provisions, and regional income effects.  
**Prerequisites:** Economics 201/203 or consent of the Department.

Economics 341 H(3-0)  
**Money and Banking**  
Operation of financial markets and institutions: the principles of money creation, interest rate determination, and central banking.  
**Prerequisites:** Economics 201/203 or consent of the Department.

Economics 345 H(3-0)  
**Economic Analysis of Law**  
An introduction to the relationship between law and economics. Economic theory will be used to analyse property and tort law.  
**Prerequisite:** Economics 201 or consent of the Department.

Economics 349 H(3-0)  
**The Economics of Social Problems**  
Contribution that economic analysis can make to the understanding of selected current social issues such as poverty, aging, crime, drug abuse and discrimination.  
**Prerequisites:** Economics 201/203 or consent of the Department.

Economics 355 H(3-0)  
**Canadian Public Finance**  
Examination of the institutions behind and economic rationale for Canadian government policy relating to public expenditures and taxation. Topics include the history and present structure of government spending and taxation, tax expenditures, the budgetary process, inter-jurisdictional issues, and program design.  
**Prerequisites:** Economics 201/203 or consent of the Department.

Economics 371 H(3-0)  
**Economic Analysis of Transportation**  
Modal choice by passengers, location choice by firms, capital investment choice. Cost, demand, and market structure related to the determination of transportation rates. Cost/Benefit analysis of transportation projects. Analysis will be related to contemporary aspects of ocean shipping, air, rail, trucking, pipelines and urban transportation.  
**Prerequisites:** Economics 201/203 or consent of the Department.

Economics 373 H(3-0)  
**Game Theory and Strategic Thinking for the Social Sciences**  
An introduction to the principles of game theory utilizing a non-mathematical and intuitive approach. The principles of strategic thinking are illustrated by application and examples in economics and other social sciences. The course objective is to develop the ability of students to reason strategically and to understand how game theory can be used to explain social interaction.
greater appreciation for the strengths and limitations of microeconomic analysis.

**Prerequisite:** Economics 357.

**Economics 399**  
**H(3-0)**

**Selected Topics in Economics I**

A decentralized course in which topics will vary from year to year. Consult the timetable or the Department for the topics available in a given year.

**Prerequisites:** Economics 201/203 or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

**Economics 401**  
**H(3-0)**

**Public Sector Economics: Expenditures**

Theory of government spending. Topics include the nature of public goods and externalities, the pricing of public services, causes of growth of public expenditures, expenditure incidence, social insurance, social decision procedures, and political and bureaucratic influences.

**Prerequisites:** Economics 303 and 357; or consent of the Department.

**Economics 403**  
**H(3-0)**

**Public Sector Economics: Taxation**

Theory of taxation. Topics include the rationale for and the incentive effects of taxation, efficiency and equity aspects of taxation, partial and general equilibrium tax incidence, open economy effects, choice of governing instruments, and tax reform.

**Prerequisites:** Economics 303 and 357; or consent of the Department.

**Economics 405**  
**H(3-0)**

**Political Economy of Public Policy**

Introduction to the economic foundations of political economy and economic models of public sector policy formation. Potential topics are the role of institutions in policy design, theories of bureaucracy, political business cycles, the formation and behaviour of interest groups, and the strategic use of government debt.

**Prerequisites:** Economics 303 and 357; or consent of the Department.

**Economics 415**  
**H(3-0)**

**Seminar in Contemporary Policy Issues I**

An examination of selected problems and policies, with special emphasis on microeconomic issues.

**Prerequisites:** Economics 303 and 315; or consent of the Department.

**Prerequisite or Corequisite:** Economics 357.

**Economics 417**  
**H(3-0)**

**Seminar in Contemporary Policy Issues II**

An examination of selected problems and policies, with special emphasis on macroeconomic issues.

**Prerequisites:** Economics 301 and 315; or consent of the Department.

**Prerequisite or Corequisite:** Economics 359.

**Economics 419**  
(formerly Economics 317)  
**H(3-0)**

**Introduction to Econometrics II**

Econometric techniques emphasizing estimation of sets of interdependent economic relationships. Topics include construction of economic models, simultaneous equation problems, alternate estimation procedures, simulation models, econometric theory in matrix form, use of computer packages and solution of practical econometric problems.

**Prerequisite:** Economics 357 or consent of the Department.

**Economics 423**  
**H(3-0)**

**International Macroeconomics**

Foreign exchange markets, and international macroeconomic connections with trade in assets as well as goods and services. Topics include: alternative exchange rate regimes; monetary and fiscal policy responses to problems of unemployment and inflation; balance of payments adjustment mechanisms; international debt; and Euro-dollar markets.

**Prerequisite:** Economics 303 or 313 or consent of the Department.

**Economics 425**  
**H(3-0)**

**International Trade**

The general equilibrium treatment of the gains from trade, comparative advantage and trade patterns provides a basis for examining topics such as: trade policy under imperfect competition, trade policy and the environment, trade policy and economic growth, and preferential trading arrangements.

**Prerequisite:** Economics 309 or 357 or consent of the Department, or Corequisite: Economics 357.

Completion of Economics 321 is recommended but not necessary.

**Economics 431**  
**H(3-0)**

**The Canadian Labour Market**

Economic analysis of migration, labour force participation, education, fertility, manpower policy, and the measurement and treatment of unemployment.

**Prerequisites:** Economics 301 or 309; and 303 or 313; or consent of the Department.

**Economics 433**  
**H(3-0)**

**Wage Determination**

Wage and income determination; policies dealing with employment discrimination; and income redistribution.

**Prerequisite:** Economics 301 or 309 or consent of the Department.

**Economics 443**  
**H(3-0)**

**The Economics of Financial Markets**

An introduction to the basic functions and structure of financial markets, and an analysis of the economic aspects of pricing decisions in securities markets. Institutional features, theoretical pricing and trading strategies in bond, stock, options, forward and futures markets will be examined.

**Prerequisites:** Economics 341 and 357; or consent of the Department.

**Economics 453**  
**H(3-0)**

**Cost-Benefit Analysis**

Theoretical basis for social cost-benefit analysis, appraisal techniques for investment projects and public policies, and selected applications.

**Prerequisite:** Economics 357 or consent of the Department.

**Economics 465**  
**H(3-0)**

**Industrial Development of Alberta**

Structure, growth and development of the provincial economy; evaluation of industrial projects and policy alternatives.

**Prerequisites:** Economics 301 or 309; and 303 or 313; or consent of the Department.

**Economics 471**  
**H(3-0)**

**Industrial Organization**

Behaviour of firms in imperfectly competitive markets. Topics include the theory of strategic competition; dynamic price competition and tacit collusion; product differentiation, product selection, and preemption; entry deterrence and capacity competition; information, reputation, and predation; the economics of research and development; international trade and imperfectly competitive markets.

**Prerequisite:** Economics 357 or consent of the Department.

**Economics 475**  
**H(3-0)**

**Economics of Natural Resources I**


**Prerequisite:** Economics 301 or 309, or consent of the Department.

**Economics 477**  
**H(3-0)**

**Regulatory Economics**

An introduction to economic regulation, its rationale, form and effects with a focus on the economic theory of regulation and on the practice, structure, and evolution of Canadian regulatory institutions.

**Prerequisite:** Economics 301 or 309, or consent of the Department.

**Economics 479**  
**H(3-1)**

**Experimental Economics**

Introduces students to the use of and insights gained from experiments in economic research. Develops many of the concepts from Economics 301/357, shedding new light on the assumptions of rationality, the design of markets, and the implementation of market institutions. Covers not only experimental methods, but also reviews some of the most important papers in the field. As part of the course, students will be participating in a variety of in-class experiments.

**Prerequisites:** Economics 315 and 357.

**Economics 481**  
**H(3-0)**

**Behavioural Economics**

Major factors underlying economic behaviour including: various views of the role of rationality in economic analysis and in the economic decision making of individuals and institutions; determinants of individual preferences and decision making procedures; the experimental analysis of economic behaviour; inter-relations between the operation of the economic system and feelings of subjective well-being.

**Prerequisite:** Economics 357 or consent of the Department.
Credit for both Economics 521 and 387 will not be allowed.

Prerequisites: Economics 301 or 309; and 303 or 313; or consent of the Department.

Economics 491 H(3-0)

Comparative Economic Systems

A comparative study of theories of the organization of economic systems with reference to the economic institutions of contemporary economies. Selected examples of the mixed capitalist system, command economies and transitional systems embodying markets and economic planning.

Prerequisites: Economics 301 or 309; and 303 or 313; or consent of the Department.

Economics 492 F(3-0)

Applied Energy Economics I

An examination of selected problems in applied energy economics.

Prerequisites: Successful completion of all other required courses in the Applied Energy Economics program, with the exception of Economics 494, or consent of the Department.

Note: Normally only available to students registered in the Applied Energy Economics program.

Economics 494 F(3-0)

Applied Energy Economics II

Participation in ongoing projects in applied energy economics at the Canadian Energy Research Institute (CERI).

Prerequisites: Successful completion of all other required courses in the Applied Energy Economics program with the exception of Economics 492, or consent of the Department.

Note: Normally only available to students registered in the Applied Energy Economics program.

Economics 499 H(3-0)

Selected Topics in Economics II

A decentralized course in which topics will vary from year to year. Consult the timetable or the Department for the topics available in a given year.

Prerequisites: Economics 301 or 309; and Economics 303 or 313; or consent of the Department.

MAY BE REPEATED FOR CREDIT

Economics 521 H(3-0)

Quantitative Economic Analysis

Mathematical techniques of economic analysis. Required of and normally restricted to Master of Economics students.

Prerequisite: Consent of the Department.

Note: Credit for both Economics 521 and 387 will not be allowed.

Economics 523 H(3-0)

Econometrics

Introduction to statistical techniques as they are used in Economics. Topics include: estimation and testing of hypotheses, single and simultaneous equation regression analysis, least squares and maximum likelihood estimation, and solution of practical econometric problems. Matrix notation is employed. Required of and normally restricted to Master of Economics students.

Prerequisite: Statistics 213 or equivalent; or consent of the Department.

Prerequisite or Corequisite: Economics 521.

Note: Credit for both Economics 523 and 315 will not be allowed.

Economics 527 H(3-0)

World Oil Economics

Analysis of the world oil industry in the post war period.

Prerequisites: Economics 301 or 309; and 303 or 313; or consent of the Department.

Economics 529 H(3-0)

Microeconomics with Applications

Intermediate microeconomic theory and welfare economics with special emphasis on applications. Topics include: demand theory and measurement; production and cost theory and measurement; market structure and pricing behaviour; pricing practices; regulation; antitrust law; and capital budgeting. Normally restricted to Master of Economics students.

Prerequisite: Consent of the Department. It is recommended that Economics 521 be taken prior to or concurrently with Economics 529.

Note: Credit for both Economics 529 and either 309 or 357 will not be allowed.

Economics 531 H(3-0)

Macroeconomics with Applications

Intermediate macroeconomic theory with special emphasis on applications. Topics include: basic theories concerning employment, output, interest rates, the price level, business cycles and growth; contemporary thought on macro problems such as unemployment, inflation, and balance of payments disequilibrium; and Canadian macroeconomic policy issues. Normally restricted to Master of Economics students.

Prerequisite: Consent of the Department. It is recommended that Economics 521 be taken prior to Economics 531.

Note: Credit for both Economics 531 and either 313 or 359 will not be allowed.

Economics 537 H(3-0)

Theory and Policy of Economic Development

Classical and Marxian theories of economic development, and theories of dual economy, balanced and unbalanced growth, population, choice of techniques, etc. A critical examination of the current national and international policies affecting economic development of developing countries will also be undertaken.

Prerequisites: Economics 301 or 309; and 303 or 313; or consent of the Department.

Economics 541 H(3-0)

Monetary Theory

A survey of recent work in monetary theory with primary emphasis on financial issues.

Prerequisites: Economics 341 and 357 and 359; or consent of the Department.

Prerequisite or Corequisite: Economics 315.

Economics 557 H(3-0)

Topics in Economic Theory I

Topics in microeconomic theory such as welfare economics and general equilibrium theory.

Prerequisites: Economics 357 and 389; or consent of the Department.

Economics 559 H(3-0)

Topics in Economic Theory II

Topics in macroeconomic theory such as consumption and growth.

Prerequisites: Economics 315 and 359 and 389; or consent of the Department.

Economics 571 H(3-0)

Competition Policy

The law and economics of competition policy. An examination of the economics, jurisprudence and history of competition policy towards mergers, price fixing, vertical restraints, and monopolization, primarily in Canada and the United States.

Prerequisite: Economics 471.

Economics 575 H(3-0)

Economics of Natural Resources II

A variety of topics in the area of Natural Resource Economics. Resource production and exhaustion, resources management and conservation, and substitutions between natural resources may be examined.

Prerequisite: Economics 475 or consent of the Department.

Economics 599 H(3-0)

Selected Topics in Economics III

A decentralized course in which topics will vary from year to year. Consult the timetable or the Department for the topics available in a given year.

Prerequisites: Economics 357 and 359; or consent of the Department.

MAY BE REPEATED FOR CREDIT

Graduate Courses

Students are required to have departmental consent before registering in any of the following courses:

Economics 601 H(3-0)

Applied Economics

Provides students with an opportunity to apply microeconomic and macroeconomic theories to issues that are of interest to professional economists.

601.01. History of Economic Thought

601.02. Financial Economics
## Courses of Instruction

### Economics/Education Teacher Preparation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>601.03</td>
<td>Cost-Benefit Analysis</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>601.04</td>
<td>Public Economics</td>
<td>H(3-0)</td>
</tr>
</tbody>
</table>

**Prerequisites:** Economics 529 and 531; or consent of the Department.

**Note:** Restricted to Master of Economics students.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 605</td>
<td>Advanced Computational Optimization and Economic Applications I</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 607</td>
<td>Advanced Computational Optimization and Economic Applications II</td>
<td>H(3-0)</td>
</tr>
</tbody>
</table>

**Prerequisite:** Economics 605.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 611</td>
<td>Independent Study</td>
<td>H(3-0)</td>
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</tbody>
</table>

**MAY BE REPEATED FOR CREDIT**

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<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Economics 615</td>
<td>Advanced Econometrics I</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 617</td>
<td>Advanced Econometrics II</td>
<td>H(3-0)</td>
</tr>
</tbody>
</table>

**Prerequisite:** Economics 615 or consent of the Department.

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 619</td>
<td>Economics of International Commercial Policy</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 621</td>
<td>International Trade</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 623</td>
<td>International Finance</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 627</td>
<td>Energy in the Production Sector of the Economy</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 633</td>
<td>The Nature and Structure of the Labour Market</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 635</td>
<td>Regulatory Economics</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 637</td>
<td>Advanced Development Economics</td>
<td>H(3-0)</td>
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<tr>
<td>Economics 641</td>
<td>Monetary and Financial Economics</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 653</td>
<td>Public Revenue Analysis</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 655</td>
<td>Cost/Benefit Analysis</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 657</td>
<td>Microeconomic Theory</td>
<td>H(3-0)</td>
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</table>

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<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>Economics 659</td>
<td>Macroeconomic Theory</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 663</td>
<td>Economics of Agricultural Production and Resource Use</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 667</td>
<td>Seminar in Industrial Organization</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 675</td>
<td>Advanced Topics in Natural Resource Economics</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 677</td>
<td>Seminar in Economics of the Environment</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 679</td>
<td>Health Economics I</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 711</td>
<td>Independent Study</td>
<td>H(3-0)</td>
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</table>

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<tr>
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</thead>
<tbody>
<tr>
<td>Economics 715</td>
<td>Advanced Topics in Econometrics</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 757</td>
<td>Advanced Microeconomic Theory</td>
<td>H(3-0)</td>
</tr>
<tr>
<td>Economics 759</td>
<td>Advanced Macroeconomic Theory</td>
<td>H(3-0)</td>
</tr>
</tbody>
</table>

In addition to the numbered and titled courses shown above, the Department offers a selection of advanced level Graduate Courses specifically designed to meet the needs of individuals or small groups of students. These courses are numbered in the series 800.01 to 899.99. Such offerings are, of course, conditional upon the availability of staff resources.

**Education In-Service**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education In-Service 513</td>
<td>Topics in the Teaching of Social Studies</td>
<td>Q(0-1.5S)</td>
</tr>
</tbody>
</table>

**Specific content for these courses could arise from a new prescribed curriculum, from new resources, or from new methods.**

**Note:** Enrollment is normally restricted to certified teachers. Must be approved by the student’s program advisor or supervisor for course to be eligible for credit toward a program requirement.

**NOT INCLUDED IN GPA**

### Education Teacher Preparation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Teacher Preparation 502</td>
<td>Teachers and Learning</td>
<td>F(3-1S-7)</td>
</tr>
<tr>
<td>Education Teacher Preparation 504</td>
<td>Teachers and Teaching</td>
<td>M(4-2S-7)</td>
</tr>
<tr>
<td>Education Teacher Preparation 506</td>
<td>Curriculum Contexts</td>
<td>F(3-1S-7)</td>
</tr>
<tr>
<td>Education Teacher Preparation 508</td>
<td>Curriculum Studies</td>
<td>M(4-2S-7)</td>
</tr>
</tbody>
</table>

**Corequisite:** Education Teacher Preparation 504.

**Notes:**
- Additional Education courses are offered under the course headings Applied Psychology, Education In-Service, and Educational Research.
- Instruction offered by members of the Division of Teacher Preparation in the Faculty of Education and by others.
- Associate Dean – W.B. Clark

### Senior Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Teacher Preparation 510</td>
<td>Praxis</td>
<td>M(3-2S-28)</td>
</tr>
</tbody>
</table>

**Corequisite:** Education Teacher Preparation 508.

**Notes:**
- This course carries a weight of one and one-half full courses.

**NOT INCLUDED IN GPA**
Courses of Instruction

Educational Research 611 H(3-0)
Communication in Educational Administration
To explore dominant areas of interpersonal communication which constantly challenge educational leaders.

Educational Research 613 H(3-0)
Change and Innovation in Education
Examines both traditional and contemporary research literature relevant to change and innovation in educational settings.

Educational Research 615 H(3-0)
Organizational Behaviour in Education
The behaviour of individuals and groups in the organizational context: Schools and educational organizations as a special case.

Educational Research 617 H(3-0)
Organizational Theory and Analysis in Education
Human organization as the setting for the delivery of educational services.

Educational Research 619 H(3-0)
Special Topics in Educational Leadership
Consult current timetable for offerings.

Educational Research 621 H(3-0)
Assessment of Classroom Learning
Examines both traditional and emerging assessment techniques, including Performance Assessment and Learning Portfolios, for examining students’ learning outcomes.

Educational Research 625 H(3-0)
Teacher Evaluation
Examines both traditional and emerging techniques, e.g., Portfolios, for assessing teacher performance.

Educational Research 627 H(3-0)
Program Evaluation
Systematically examines the evaluation enterprise including concepts, procedures and uses of evaluation.

Educational Research 629 H(3-0)
Special Topics in Assessment/Evaluation
Consult current timetable for offerings.

Educational Research 640 F(3-0)
Teaching and Learning Across the Curriculum
Develops a critical foundation for understanding and promoting active learning across the subject areas.

Educational Research 641 H(3-0)
(Formerly Educational Research 699.20)
Research on the Reading Process
Examination and criticism of competing theoretical discourses about the teaching and learning of reading in the elementary school.

Educational Research 643 H(3-0)
Foundational Research in Language Arts Teaching
Theory, research, and advocated instructional practices. Emphasis on the role of oral language in classrooms and the teaching of writing.

Educational Research 645 H(3-0)
Implications of Literacy
Exploration of the implications of literacy on both a societal and individual level; attention to specialized literacies of our culture.

Educational Research 649 H(3-0)
Special Topics in English Language Education
Consult current timetable for offerings.

Educational Research 651 H(3-0)
Philosophical Education
Philosophical topics in the context of education. Consult current timetable for offerings.

Educational Research 653 H(3-0)
Sociology of Education
Sociological topics in the context of education. Consult current timetable for offerings.

Educational Research 655 H(3-0)
Comparative Education
Topics in comparative education. Consult current timetable for offerings.

Educational Research 657 H(3-0)
Culture and Gender Studies
Culture and gender topics in the context of education. Consult current timetable for offerings.

Graduate Courses

Educational Research 600 F(3-0)
Seminar for First-Year MA/MSc Students
Will assist students in thinking about research questions and how to prepare a research proposal.

Educational Research 601 H(3-0)
Interpreting Educational Research
Making sense of educational research as theory and practice mutually informing one another. Intended for MEd students.

Educational Research 603 H(3-0)
Research Methods
Introduction to various approaches to research in education.

Educational Research 611 F(3-0)
Communication in Educational Administration
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Educational Research 629 F(3-0)
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<tr>
<th>Courses of Instruction</th>
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<tbody>
<tr>
<td>Educational Research 659</td>
</tr>
<tr>
<td><strong>History of Education</strong></td>
</tr>
<tr>
<td>Historical topics in the context of education. Consult current timetable for offerings. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 667</td>
</tr>
<tr>
<td><strong>Second Language Reading and Writing</strong></td>
</tr>
<tr>
<td>Research and practice in second language reading and writing; instructional techniques for specific audiences; theories of reading and writing.</td>
</tr>
<tr>
<td>Educational Research 669</td>
</tr>
<tr>
<td><strong>Aspects of Second Language and Culture</strong></td>
</tr>
<tr>
<td>Introduction to research and issues on various aspects of second language and culture. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 671</td>
</tr>
<tr>
<td><strong>Instructional Design</strong></td>
</tr>
<tr>
<td>Integration of theory and practice associated with the selection and sequencing of content across the instructional spectrum and the matching of instructional strategies to characteristics of learners and content.</td>
</tr>
<tr>
<td>Educational Research 673</td>
</tr>
<tr>
<td><strong>Telecommunications in Education</strong></td>
</tr>
<tr>
<td>Examination of the role of communications media in current and future educational systems. Particular attention is given to computer-mediated communications, but television, audio, facsimile and other technologies are considered. Readings address issues in innovation and change in education.</td>
</tr>
<tr>
<td>Educational Research 675</td>
</tr>
<tr>
<td><strong>Special Topics in Educational Technology</strong></td>
</tr>
<tr>
<td>Examination of current topics and issues in educational technology and related areas. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 681</td>
</tr>
<tr>
<td><strong>Studying Curriculum</strong></td>
</tr>
<tr>
<td>Curriculum research, theory, and practice with particular reference to curriculum aims, content, organization and change. Note: Not open to students with credit in Curriculum and Instruction 605 or Educational Research 665, 689.27 or 689.42.</td>
</tr>
<tr>
<td>Educational Research 683</td>
</tr>
<tr>
<td><strong>Curriculum Development, Implementation and Assessment</strong></td>
</tr>
<tr>
<td>Making sense of what happens when curriculum policy becomes reality and affects students, teachers, parents and politicians. Prerequisite: Educational Research 681 or equivalent. Note: Not open to students with credit in Curriculum and Instruction 609.</td>
</tr>
<tr>
<td>Educational Research 685</td>
</tr>
<tr>
<td><strong>Introduction to Interpretable Curriculum Discourses</strong></td>
</tr>
<tr>
<td>An introduction to the field of interpretive work in curriculum theory.</td>
</tr>
<tr>
<td>Educational Research 689</td>
</tr>
<tr>
<td><strong>Aspects of School Curriculum</strong></td>
</tr>
<tr>
<td>Introductory systematic study of research and issues focused on various areas of the school curriculum. Note: For Master’s students. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 690</td>
</tr>
<tr>
<td><strong>Professional Project</strong></td>
</tr>
<tr>
<td>Seminar course to facilitate the preparation and evaluation of an independent culminating project.</td>
</tr>
<tr>
<td>Educational Research 691</td>
</tr>
<tr>
<td><strong>Critical Issues in Education</strong></td>
</tr>
<tr>
<td>Culminating course focusing on the integration and application of major themes covered in student’s program.</td>
</tr>
<tr>
<td>Educational Research 692</td>
</tr>
<tr>
<td><strong>Special Topics</strong></td>
</tr>
<tr>
<td>MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 693</td>
</tr>
<tr>
<td><strong>EdD Dissertation</strong></td>
</tr>
<tr>
<td>May be repeated for credit.</td>
</tr>
<tr>
<td>Educational Research 694</td>
</tr>
<tr>
<td><strong>EdD Seminar</strong></td>
</tr>
<tr>
<td>Seminar on selected topics. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students. NOT INCLUDED IN GPA</td>
</tr>
<tr>
<td>Educational Research 695</td>
</tr>
<tr>
<td><strong>Advanced Research Methods</strong></td>
</tr>
<tr>
<td>Advanced study in the conduct of research. Note: Normally restricted to Doctoral students. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 697</td>
</tr>
<tr>
<td><strong>Research Seminar on Current Issues in L2 Literacy</strong></td>
</tr>
<tr>
<td>Advanced doctoral seminar focused on defining issues and current research in educational technology. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 700</td>
</tr>
<tr>
<td><strong>Seminar for First-Year PhD EdD Students</strong></td>
</tr>
<tr>
<td>Seminar on selected topics. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 701</td>
</tr>
<tr>
<td><strong>Advanced Seminar in Literacy</strong></td>
</tr>
<tr>
<td>Critical examination of various theoretical frameworks and representative studies in the literature of critical literacy. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 703</td>
</tr>
<tr>
<td><strong>Directed Study</strong></td>
</tr>
<tr>
<td>Individual doctoral study in a selected area. Prerequisite: Consent of the Division. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Educational Research 705</td>
</tr>
<tr>
<td><strong>Doctoral Seminar in Educational Leadership</strong></td>
</tr>
<tr>
<td>Provides doctoral students with a contemporary Canadian focus on significant issues in educational leadership. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 741</td>
</tr>
<tr>
<td><strong>Advanced Seminar in Theory and Research in Literacy Education</strong></td>
</tr>
<tr>
<td>A critical examination of theories, models, and research that underpin literacy education. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 761</td>
</tr>
<tr>
<td><strong>Research Seminar on Second Language Education</strong></td>
</tr>
<tr>
<td>Multidimensional perspectives on theory building about second language learning and teaching, including factors such as language, schooling, curriculum, culture, community and society. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 763</td>
</tr>
<tr>
<td><strong>Research Seminar on Current Issues in L2 Literacy</strong></td>
</tr>
<tr>
<td>Current issues in L2 literacy, such as assessment theory and practice, literacy in social contexts, language proficiency, curriculum and pedagogy. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 771</td>
</tr>
<tr>
<td><strong>Doctoral Seminar in Educational Leadership</strong></td>
</tr>
<tr>
<td>Provides doctoral students with a contemporary Canadian focus on significant issues in educational leadership. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 781</td>
</tr>
<tr>
<td><strong>Conceptualizing Curriculum Research</strong></td>
</tr>
<tr>
<td>Analysis of different approaches to curriculum research, especially assumptions, meaning frameworks, and views of the theory/practice relationship. Prerequisite: Consent of the Division. Note: Not open to students with credit in Curriculum and Instruction 701. Note: Normally restricted to Doctoral students.</td>
</tr>
<tr>
<td>Educational Research 783</td>
</tr>
<tr>
<td><strong>Conceptualizing Instructional Research</strong></td>
</tr>
<tr>
<td>Critical examination of various theoretical frameworks and representative studies in the literature of critical literacy. Prerequisite: Consent of the Division. Note: Normally restricted to Doctoral students.</td>
</tr>
</tbody>
</table>
Courses of Instruction

Electrical Engineering ENEL

Instruction offered by members of the Department of Electrical and Computer Engineering in the Faculty of Engineering.

Department Head – L.J. Leon
Associate Heads – S.A. Norman (Undergraduate), A. Sesay (Graduate)
Director of Undergraduate Program for Electrical Engineering – L.E. Turner
Director of Undergraduate Program for Computer Engineering – S.A. Norman
Director of Undergraduate Program for Software Engineering – A. Eberlein

Electrical Engineering 007 H(20 hours)
Electrical Engineering Fourth-Year Block Course

This block course is intended to provide the necessary background material to prepare students for the fourth year Team Design Project. Topics covered include: personal responsibilities and interpersonal relationships involved in a team project; team projects from a current industrial perspective; tools to automate project management, e.g. PERT charts, critical path analysis, resource management, report generation and project tracking.

Prerequisite: Fourth year standing in the Department of Electrical and Computer Engineering.

NOT INCLUDED IN GPA

Senior Courses

Electrical Engineering 327 H(3-1T-3/2)
Signals and Transforms


Prerequisite: Electrical Engineering 329 or 341 or Engineering 325.

Electrical Engineering 329 H(3-1T-3/3)
Circuits for Software Engineers

Basic circuit laws, node and mesh analysis. First order RC circuits. DC and transient analysis. Overview of basic semiconductor devices and circuits. Fundamentals of logic circuits. CAD tools for circuit analysis.

Prerequisite: Physics 259.

Electrical Engineering 341 H(3-1T-3/2)
Circuits I
Definition of linear elements, independent and dependent sources, sign conventions; basic circuit laws, simple resistive circuits; node and mesh analysis. Thevenin, Norton and other theorems; inductance and capacitance. AC circuit analysis. Impedance, admittance, phasor diagrams; average and effective values of waveforms, real, reactive and complex power, power calculations; mutual inductance, ideal transformer, introduction to balanced three-phase circuits, power calculation in three-phase circuits.

Prerequisite: Physics 259.

Electrical Engineering 343 H(3-1T-3/2)
Circuits II

Prerequisites: Electrical Engineering 341 and Applied Mathematics 307.

Electrical Engineering 353 H(3-1T-3/2)
Digital Circuits

Combination logic: number systems, truth tables, Karnaugh maps, minterms, maxterms. Sequential circuits, JK and D flip flops, state diagrams and synthesis techniques. Memory based logic functions. Gates, buffers, counters, multiplexers, demultiplexers and registers. Medium and large scale integration in sequential design.

Prerequisites: (Computer Science students only) Computer Science 233 and Mathematics 271.
Corequisite: Computer Engineering 339.
Note: Credit for both Electrical Engineering 353 and Computer Science 321 will not be allowed.

Electrical Engineering 361 H(3-1T-3/2)
Electronic Materials


Prerequisites: Physics 259 and one of 269 or 369.

Electrical Engineering 409 H(3-2)
Principles of Software Development

A survey of software design and development topics for Electrical Engineering students. Topics include: key features of an object-oriented programming language, especially inheritance and polymorphism; elements of object-oriented design; programming and application of common data structures; strategies and tools for testing and debugging.

Prerequisite: Computer Engineering 339.

Electrical Engineering 441 H(3-1T-3/2)
Control Systems I


Prerequisite: Electrical Engineering 327.

Electrical Engineering 453 H(3-1T-3/2)
Digital Systems Design

Design, implementation and testing of a digital system. Mask programmable and field programmable technology. Logic design for integrated systems. Design for testability. Real versus ideal logic design. CAD tools for digital systems design: simulation, synthesis and fabrication.

Prerequisites: Computer Engineering 415 and one of Electrical Engineering 463 or Computer Engineering 467.

Electrical Engineering 463 H(3-1T-3/2)
Electronic Devices and Circuits

Analysis and design of circuits containing diodes, bipolar transistors and MOSFETs. Physical operation of semiconductor devices. Current and voltage characteristics, Regions of operation. Large and small signal models. Diode and transistor circuits.

Prerequisites: Electrical Engineering 343 and 361.

Electrical Engineering 465 H(3-1T-3/2)
Analog Integrated Electronics


Prerequisite: Electrical Engineering 463.

Electrical Engineering 471 H(3-1T-3/2)
Analog Communications

Fundamentals of communication systems; signals and system classifications. Signal analysis; Fourier series and Fourier transform. Systems analysis; filters, time-domain and Frequency-domain analysis. Analog modulation; linear continuous wave and nonlinear continuous wave modulation; generation and detection of analog modulated waves. Applications of analog modulation. Noise in analog modulation; comparison of analog modulations.

Prerequisite: Electrical Engineering 327.

Electrical Engineering 475 H(3-1T-3/3)
Fundamentals of Electromagnetic Fields

The Field approach to steady electric and magnetic

Effects of object-oriented design; programming and application of common data structures; strategies and tools for testing and debugging.

Prerequisite: Computer Engineering 339.

Electrical Engineering 441 H(3-1T-3/2)
Control Systems I


Prerequisite: Electrical Engineering 327.

Electrical Engineering 453 H(3-1T-3/2)
Digital Systems Design

Design, implementation and testing of a digital system. Mask programmable and field programmable technology. Logic design for integrated systems. Design for testability. Real versus ideal logic design. CAD tools for digital systems design: simulation, synthesis and fabrication.

Prerequisites: Computer Engineering 415 and one of Electrical Engineering 463 or Computer Engineering 467.

Electrical Engineering 463 H(3-1T-3/2)
Electronic Devices and Circuits

Analysis and design of circuits containing diodes, bipolar transistors and MOSFETs. Physical operation of semiconductor devices. Current and voltage characteristics, Regions of operation. Large and small signal models. Diode and transistor circuits.

Prerequisites: Electrical Engineering 343 and 361.

Electrical Engineering 465 H(3-1T-3/2)
Analog Integrated Electronics


Prerequisite: Electrical Engineering 463.

Electrical Engineering 471 H(3-1T-3/2)
Analog Communications

Fundamentals of communication systems; signals and system classifications. Signal analysis; Fourier series and Fourier transform. Systems analysis; filters, time-domain and Frequency-domain analysis. Analog modulation; linear continuous wave and nonlinear continuous wave modulation; generation and detection of analog modulated waves. Applications of analog modulation. Noise in analog modulation; comparison of analog modulations.

Prerequisite: Electrical Engineering 327.

Electrical Engineering 475 H(3-1T-3/3)
Fundamentals of Electromagnetic Fields

The Field approach to steady electric and magnetic

Effects of object-oriented design; programming and application of common data structures; strategies and tools for testing and debugging.

Prerequisite: Computer Engineering 339.
Electrical Engineering and industry standards; propagation characteristics and system architecture.

Wireless Communications Systems

Electrical Engineering 453 and 471.

Electrical Engineering 465 or

Introduction to digital filter design and introduction to Hardware Design Languages.

DSP Systems

Prerequisite: Electrical Engineering 465.

Neural networks: neuron models and network architectures; perceptrons; Hopfield networks; unsupervised learning. Fuzzy systems: basic operations and properties of fuzzy sets; fuzzy logic and defuzzification of fuzzy logic; fuzzy neural networks. Applications in areas such as optimization, signal and image processing, communications, and control. Introduction to genetic algorithms and evolutionary computing. Introduction to chaos theory.

Prerequisite: Electrical Engineering 327.

Design and Implementation of FPGA-Based DSP Systems

The design and implementation of digital systems for digital signal processing applications. Introduction to software design languages. VHDL. Introduction to digital filter design and computational units for digital arithmetic. Interface standards. Interfacing to peripheral devices. Printed circuit board design and implementation. Design for testability.

Prerequisite: Electrical Engineering 453 and 471.

Note: Credit for both Electrical Engineering 527 and either Computer Engineering 519.27 or Electrical Engineering 519.27 will not be allowed.

Electrical Engineering 529 H(3-1T-1)

Wireless Communications Systems

Overview of terrestrial wireless systems including system architecture and industry standards; propagation characteristics of wireless channels; moderns for wireless communications; cells and cellular traffic; cellular system planning and engineering; fading mitigation techniques in wireless systems; multiple access techniques for wireless systems.

Prerequisites: Engineering 319 and Electrical Engineering 471.

Note: Credit for both Electrical Engineering 529 and any of Computer Engineering 519.29, Electrical Engineering 519.29 or Software Engineering for Engineers 519.29 will not be allowed.

Electrical Engineering 541 H(3-1T-2)

Control Systems II

Introduction to sampled-data control systems, discretization of analog systems, discrete-time signals and systems, causality, time-invariance, z-transforms, stability, asymptotic tracking, state-space models, controllability and observability, pole assignment, deadbeat control, state observers, observer-based control design, optimal control.

Prerequisite: Electrical Engineering 441.

Electrical Engineering 559 H(3-2)

(formerly Electrical Engineering 519.13)

Analog Filter Design

This class deals with the theory and design of active filters, for audio-frequency applications, using op amps. It consists, basically, of two phases. Phase 1 deals with the realization of a given transfer function using cascade of first and second-order RC-op amps circuits. In phase II, the transfer functions of filters are studied in combination with frequency-response approximations such as Butterworth, Chebyshev, Inverse-Chebyshev, Cauer (or Elliptic) and Bessel-Thompson.

Prerequisites: Electrical Engineering 465 and 471.

Electrical Engineering 563 H(3-1T-2)

(formerly Electrical Engineering 519.02)

Biomedical Signal Analysis

Introduction to the electrocardiogram, electroencephalogram, electromyogram, and other diagnostic signals. Computer techniques for processing and analysis of biomedical signals. Pattern classification and decision techniques for computer-aided diagnosis. Case studies from current applications and research.

Prerequisite: Electrical Engineering 471.

Electrical Engineering 565 H(3-1T-2)

Digital Integrated Electronics

Linear-wave shaping, nonlinear transfer function realization, semiconductor device switching, charge control analysis, modelling of BJTs and MOS switching, BJTs and MOS logic, performance and comparison of logic families, tristate logic, semiconductor memories, design and fabrication of digital ICs.

Prerequisite: Electrical Engineering 465.

CMOS VLSI Engineering

Introduction to CMOS very large-scale integrated (VLSI) circuit design. Review of MOS transistor theory and operation. Introduction to CMOS circuits. CMOS processing technology and design rules. Circuit characterization and performance estimation. CMOS circuit and logic design. VLSI design methods and tools. Basic concepts of design for testability. CMOS subsystem and system design.

Prerequisite: Electrical Engineering 465 or Computer Engineering 467.

Electrical Engineering 569 H(3-1T-3/2)

Electronics for Instrumentation


Prerequisite: Electrical Engineering 465.

Electrical Engineering 571 H(3-1T-3/2)

Digital Communications

Fundamentals of digital communication systems. Digital coding of analog waveforms; digital pulse modulation, pulse code modulation, delta modulation. Intersymbol interference; bandpass transmission, correlation coding. Probability theory. Optimal demodulation of data transmission; matched filtering; bit error rate.

Prerequisite: Electrical Engineering 471.

Electrical Engineering 573 H(3-1T-1)

Telecommunications and Computer Communications

Fundamentals of telecommunication system and teletraffic engineering; transmission systems; switching networks and congestions. Characterization of teletraffic: queueing theory; mathematical modelling of queueing systems; the birth and death process. Erlang loss and delay formulas; Engset loss and delay formulas. Computer communication networks; multiple access techniques.

Prerequisite: Engineering 319.

Electrical Engineering 575 H(3-1T-3/2)

Microwave Circuits and Antennas

Antennas; radiation patterns, arrays, pattern multiplication, aperture antennas, propagation. Microwaves; applications, radiation hazards, waveguides and transmission lines, components, matching kystrons, travelling wave tubes and magnetrons. Solid state microwave devices.

Prerequisite: Electrical Engineering 475.

Electrical Engineering 579 H(3-1T-3/2)

Optical Fibre Communications


Prerequisite: Fourth year standing in Electrical Engineering.

Electrical Engineering 583 H(2-4)

(formerly Electrical Engineering 519.03)

Fourth Year Electrical Engineering Team Design Project, Part A

Introduction to the theory, experience and practice of project management. Theory includes generally accepted project management principles, the structure of both project and team, together with...
ancillary topics that commonly affect project outcome. The experience is gained from a series of guest lectures by industrial practitioners with engineering background. The practice is obtained through the performance of a “customer suggested” team project through the stages of project requirement and specification analysis, high level and detailed low level designs. The project is executed, and progress measured against a plan developed by the team participants.

**Prerequisite:** Electrical Engineering 007.

**Electrical Engineering 585**

Introduction to Power Electronics


**Prerequisite:** Electrical Engineering 465.

**Electrical Engineering 587**

Power Systems: Steady State

Three-phase systems, per unit representation, power system elements and configurations, transmission system representation and performance, load flow studies, symmetrical components, fault studies, HVdc transmission, economics of power generation.

**Prerequisite:** Electrical Engineering 489.

**Electrical Engineering 589**

(Fourth Year Electrical Engineering Team Design Project, Part B)

Continues upon the foundations of theory, experience and practice of project management established in Part A. The detailed low-level project design developed by the team in Part A will be implemented, unit tested, integrated and system tested before undergoing customer trials. The project is executed and progress is measured against a plan developed by the participants.

**Prerequisite:** Electrical Engineering 583.

**Graduate Courses**

Registration in all courses requires the approval of the Department of Electrical and Computer Engineering.

**Electrical Engineering 601**

Power System Operation


**Electrical Engineering 603**

Rotating Machines


**Electrical Engineering 605**

Research Seminar

Reports of studies of the literature or of current research. This course is compulsory for all full-time graduate students.

**Electrical Engineering 607**

Research Seminar

Reports of studies of the literature or of current research. This course is compulsory for all full-time graduate students.

**Electrical Engineering 621**

(Formerly Electrical Engineering 619.10)

Advanced Object Oriented Systems

Presents a deep view of object oriented, component based software development. Analyses the main features of object orientation (aggregation, inheritance, virtuality) under the perspective of component based development; analysis, design, and code patterns; frameworks; static and dynamic architectures; component libraries. Object oriented compiler generators. The students will experiment component based software development using UML, Java, JavaCC, and suitable component libraries, such as JGL and Swing.

**Electrical Engineering 623**

(Formerly Electrical Engineering 619.11)

Biomedical Instrumentation


**Electrical Engineering 625**

Detection and Estimation Theory
Courses of Instruction

Detection and estimation theory as it is applied in communication systems, as well as measurement systems in general, biomedical engineering, genetics, etc. The specific topics covered are: sufficient statistics, hypothesis testing, Neyman-Pearson Detectors, Bayesian Detectors, Minimum Variance Unbiased Estimators, Maximum Likelihood Estimators, Cramer-Rao Lower Bounds, Bayesian Estimators, Minimum Mean Squared Error Estimators, Least Squares Estimators, Linear Prediction. Applications in communications and measurement systems. An emphasis will be put upon modern methods in detection and estimation, in particular subspace methods.

Electrical Engineering 627 (formerly Electrical Engineering 619.50) H(3-1)
Antennas
The topics covered are: two-level and multi-level logic synthesis; flexibility in logic design; multiple-valued logic for advanced technology; multi-level minimization; Binary Decision Diagrams, Word-level Decision Diagrams, sequential and combinational equivalence checking; technology mapping; technology-based transformations; logic synthesis for low power, optimizations of synchronous and asynchronous circuits, logical and physical design from a flow perspective.

Electrical Engineering 629 (formerly Electrical Engineering 619.05) H(3-1)
Advanced Logic Design
System Identification and Parameter Estimation
The topics covered are: two-level and multi-level logic synthesis; flexibility in logic design; multiple-valued logic for advanced technology; multi-level minimization; Binary Decision Diagrams, Word-level Decision Diagrams, sequential and combinational equivalence checking; technology mapping; technology-based transformations; logic synthesis for low power, optimizations of synchronous and asynchronous circuits, logical and physical design from a flow perspective.

Electrical Engineering 631 (formerly Electrical Engineering 619.66) H(3-1)
System Identification and Parameter Estimation

Electrical Engineering 633 (formerly Electrical Engineering 619.96) H(3-1)
Wireless Networks

Electrical Engineering 635 (formerly Electrical Engineering 619.50) H(3-0)
Semiconductor Devices

Electrical Engineering 639 (formerly Electrical Engineering 619.05) H(3-1)
Radio Frequency and Microwave Circuit Design
Circuit design via transmission line elements; special emphasis on microstrip circuits and effects of discontinuities (corners, Tees, and impedance steps). Analysis of passive impedance matching and filtering circuits using distributed and lumped elements. Narrow band matching and wide band matching techniques as well as wide band matching to a complex load. One and two port small signal amplifiers. Scattering parameter design methods: amplifier gain, input and output matching and stability. Computer aided design methods and broadband design methods. Large signal transistor amplifiers: device nonlinearities and design methodologies.

Electrical Engineering 643 (formerly Electrical Engineering 619.66) H(3-1)
Fibre Optics Transmission
Fundamental theory of cylindrical optical waveguides by way of Maxwell's equation and the modal analysis of the slab waveguides, step-index and graded-index fibres, review of fibre chemistry and production techniques. Problem areas relating to measurement of fibre parameters. Optical transmitters, photodetectors and receivers, modulation and multiplexing techniques, splines and connectors. Multimodal analog and digital system analysis and design. Optical switching and amplification, integrated optics.

Electrical Engineering 647 (formerly Electrical Engineering 619.96) H(3-1)
Analog Integrated Circuit Design

Electrical Engineering 655 (formerly Electrical Engineering 619.96) H(3-1)
Discrete Time Signal Processing

Electrical Engineering 659 H(3-1)
Active-RC and Switched-Capacitor Filter Design
The filter design problem; operational amplifier characteristics; cascade methods of RC-active filter design; filter design with the active biquad; active filter design based on a lossless ladder prototype. Switched-capacitor (SC) integrators; design of cascade, ladder, and multiple feedback SC filters; nonideal effects in SC filters; scaling of SC filters; topics in fabrication of SC filters.

Electrical Engineering 671 H(3-1)
Adaptive Signal Processing

Electrical Engineering 673 H(3-1)
Wireless Communications Engineering
The basics of mobile radio telephone: mobile telephone frequency channels, components of mobile radio, objectives of mobile telephone systems, major problems and tools available. The mobile radio environment: fading and propagation loss, propagation loss prediction, channel and signal models, fading statistics, classification of fading channels. Methods of reducing fading effects: diversity techniques and diversity combining methods. Signaling over fading channels. Frequency reuse schemes: cellular concept, mobile radio interference, FDMA, TDMA, and spread spectrum techniques. Portable systems, air-ground systems, and land mobile/satellite systems, processing.

Electrical Engineering 675 H(3-1)
Introduction to Data Communications

Electrical Engineering 677 H(3-1)
Advanced Data Communications
Courses of Instruction

Electrical Engineering 685  H(3-1)
**Digital Control Systems**

Electrical Engineering 687  H(3-1)
**Switch Mode Power Converters**
Design and analysis of dc-to-dc and ac-to-ac single-phase power converters. Device characteristics. Dc-to-dc topologies, dc-to-ac topologies and ac-to-ac topologies. Linearized models. Classical feedback control; introduction to state-space analysis methods. Input harmonic analysis, output harmonic analysis, and techniques to obtain unity input power factory.

Electrical Engineering 697  H(3-1)
**Digital Image Processing**

Electrical Engineering 698  F(0-4)
**Graduate Project**
Individual project in the student’s area of specialization under the guidance of the student’s supervisor. A written proposal, one or more written progress reports, and a final written report are required. An oral presentation is required upon completion of the course. Open only to students in the MEng Courses Only Route.

Electrical Engineering 699  H(3-1)
**Multidimensional Signal Processing**

**Energy and the Environment ENEV**
Instruction offered by members of the Faculties of Engineering, Environmental Design, Law and the Haskayne School of Business.

**Note:** The following courses are taught only in Quito, Ecuador and enrollment is limited to students admitted to the MSc in Energy and the Environment program, or approved by the OLADE Project Director.

**Graduate Courses**
- **Energy and the Environment 601**  H(3-0)
  **Energy Systems I: Non-Renewable Energy**
  Explore the interaction between non-renewable resources (petroleum, natural gas, coal, thermal stations, hydro) and the environment. Consider the technical and environmental aspects within the energy and environment cycle for evaluation and management.

- **Energy and the Environment 603**  H(3-0)
  **Energy Systems II: Renewable Energy**
  Study renewable energy sources as prospective energy suppliers for the future, along with conditions for sustained implementation of renewable energy technologies (biomass, solar, wind, geothermal, cogeneration).

- **Energy and the Environment 605**  H(3-0)
  **Ecology and Environmental Chemistry**
  Chemical concepts and processes for understanding and managing air, water and earth ecological systems.

- **Energy and the Environment 607**  H(3-0)
  **Water Pollution and its Impact on the Energy Sector**
  Causes and consequences of water pollution and management practices and technologies for prevention, mitigation and control of pollutant effluents.

- **Energy and the Environment 609**  H(3-0)
  **Air Pollution and its Impact on the Energy Sector**
  Causes and consequences of air pollution and management practices and technologies for prevention, mitigation and control of pollutant emissions.

- **Energy and the Environment 611**  H(3-0)
  **Land Pollution and Waste Management in the Energy Sector**
  Causes and consequences of land pollution and management practices and technologies for prevention, mitigation and control of pollution. Waste management principles and effective practices.

- **Energy and the Environment 613**  H(3-0)
  **Energy Systems III: Planning and Energy Economics**
  Financial principles and evaluation techniques and their application to energy investment planning and to assessment of energy conservation opportunities and policies.

- **Energy and the Environment 615**  H(3-0)
  **Environmental Impact Assessment in the Energy Sector**
  Techniques, principles and practices for environmental impact assessment, with application to energy development projects.

- **Energy and the Environment 617**  H(3-0)
  **Human Resource and Management in the Energy Sector**
  The major concepts and theories of management and organizational dynamics as they impact on the energy sector: interpersonal effectiveness and self awareness, motivation, group dynamics, project teams, supportive communication, stress, leadership, power, influence and conflict, organizational culture, processes of change. An application, skill development, managerial issues, and workplace trends focus.
### Courses of Instruction

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td><strong>Junior Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering 201</td>
<td><strong>Behaviour of Liquids, Gases and Solids</strong></td>
<td>H(3-1.5T-3/2)</td>
<td></td>
</tr>
<tr>
<td>Engineering 205</td>
<td><strong>Statics</strong></td>
<td>H(3-1.5T)</td>
<td></td>
</tr>
<tr>
<td>Engineering Economics</td>
<td></td>
<td>H(3-1T)</td>
<td>The basic tools and methodology of engineering economic studies. Topics include investment decisions, theory of replacement, economies of scale, externalities, social decision making and government regulation. Examples are drawn from engineering projects. Prerequisite: Registration in the Faculty of Engineering with second-year standing or higher. If not registered in the Faculty of Engineering, consent of the Department of Economics.</td>
</tr>
<tr>
<td>Engineering 233</td>
<td><strong>Computing for Engineers I</strong></td>
<td>H(3-2)</td>
<td>Overview of computer systems. Functions of software components: operating systems, editors, compilers. Programming in a high-level language: selection and loop structures, routines, array and record types, text file operations. Introduction to object-based programming: use of class libraries and construction of simple classes.</td>
</tr>
<tr>
<td>Engineering 251</td>
<td><strong>Design and Communication I</strong></td>
<td>H(1-4.5)</td>
<td>The principles of engineering design, engineering graphics and written communication learned within a hands-on project-based experience for engineering students. Safety in the laboratory; working in a team environment; core skills for engineering students; process of engineering design; graphical communication: theory of projection, multiview representation, descriptive geometry, sketching, information for manufacturing; written communication: style, format, organization, preparation and presentation skills. Real-life examples of design and engineering practice across all disciplines. Core competencies will be learned primarily within the context of team-based design projects. Note: Not open to students with credit in Engineering 215.</td>
</tr>
<tr>
<td>Engineering 253</td>
<td><strong>Design and Communication II</strong></td>
<td>H(1-4.5)</td>
<td>A continuation of Engineering 251. Students will perform more advanced team-based projects that integrate mathematical, scientific and engineering knowledge and skills. Issues that play critical roles in engineering design will be introduced, such as project management, societal and environmental awareness, health and safety, design for safety, sustainable development, information access. Prerequisite: Engineering 251.</td>
</tr>
<tr>
<td>Engineering 311</td>
<td><strong>Engineering Thermodynamics</strong></td>
<td>H(3-1.5T-3/2)</td>
<td>Thermodynamic systems, properties and state, energy, temperature and the zeroth law, equilibrium, properties of the pure substance, equations of state. Work, reversibility, heat, first law, specific heats, enthalpy, ideal gas, flow systems. Entropy and the second law, Carnot cycle, thermodynamic temperature scale, process equations, cycles, process efficiencies, calculation of entropy change. Prerequisites: Engineering 201 and Applied Mathematics 217.</td>
</tr>
<tr>
<td>Engineering 317</td>
<td><strong>Mechanics of Solids</strong></td>
<td>H(3-1.5T-3/2)</td>
<td>Axial-force, shear-force and bending moment diagrams; stress and strain; stress-strain relations; elastic and plastic behaviour; elastic constants; simple statically indeterminate (one-degree) problems; review of moment of inertia, product of inertia and principal axes of inertia; elastic torsion of circular shafts; elastic and plastic bending about principal axes of beams with symmetrical cross-section; composite beams; shear stresses due to bending; Mohr’s circle for stress; thin-walled pressure vessels; deflection of beams by integration; Euler buckling. Prerequisites: Engineering 205 and Applied Mathematics 217.</td>
</tr>
<tr>
<td>Engineering 319</td>
<td><strong>Probability and Statistics for Engineers</strong></td>
<td>H(3-1.5T)</td>
<td>Presentation and description of data, introduction to probability theory, Bayes theorem, discrete and continuous probability distributions, estimation, sampling distributions, tests of hypotheses on means, variances and proportions, simple linear regression and correlation. Applications are chosen from engineering practice. Prerequisite: Applied Mathematics 219.</td>
</tr>
<tr>
<td>Engineering 325</td>
<td><strong>Electric Circuits and Systems</strong></td>
<td>H(3-1T-3/2)</td>
<td>Topics in electric circuits and electric systems related to engineering theory and practice in the areas of Chemical, Civil, Geomatics, Mechanical and Manufacturing Engineering. Prerequisite: Physics 259.</td>
</tr>
<tr>
<td>Engineering 391</td>
<td><strong>Advanced Topics I</strong></td>
<td>Q(1-5-0)</td>
<td>Advanced topics in engineering science and design. Registration in the course requires approval of the Associate Dean (Academic &amp; Planning), Faculty of Engineering. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Engineering 393</td>
<td><strong>Advanced Topics II</strong></td>
<td>H(3-0)</td>
<td>Advanced topics in engineering science and design. Registration in the course requires approval of the Associate Dean (Academic &amp; Planning), Faculty of Engineering. MAY BE REPEATED FOR CREDIT</td>
</tr>
<tr>
<td>Engineering 481</td>
<td><strong>Technology and Society</strong></td>
<td>H(3-1.5S)</td>
<td>An interpretive course on the interrelationship between technology and society. The first part of the course surveys significant historical developments within disciplinary areas such as energy, materials, production processes, structures, transport, communications, and computation. Sequence within</td>
</tr>
</tbody>
</table>
Courses of Instruction

each area: discovery, development, application, impact, future. Social and economic consequences are also considered. The latter part of the course explores contemporary problems of society and technology.

Note: Available to students registered in other faculties as well as third-year or fourth-year Engineering students. This course does not presuppose any formal background in Engineering or Science.

Engineering 513  
H(3-0)  
The Role and Responsibilities of the Professional Engineer in Society  

Graduate Courses

Engineering 683  
H(3-0)  
Special Problems in Environmental Engineering  
Designed to provide graduate students with the opportunity of pursuing advanced studies in Engineering for the Environment under the direction of one or more faculty members. Students will be required to consider problems of an advanced nature.

Engineering 685  
H(0-5)  
Research Project in Environmental Engineering  
Designed to provide individual students or small groups of students, possibly with different backgrounds, with the opportunity to work on a research project under the supervision of one or more faculty members. Industrial representatives may assist in the selection of suitable research projects and actively participate as advisors. A written proposal, one or more progress reports, and a final report are required. Open only to students in the MEng (Courses Only) route.

English  
ENGL  
Instruction offered by members of the Department of English in the Faculty of Humanities.  
Department Head – M. McGillivray

One full-course equivalent of English and/or Comparative Literature will normally constitute the prerequisite for 300-level English courses.

The following 300-level courses have no 200-level Prerequisites: English 329, 385, 387, 395, 393, 395, 399.

Students may not receive credit for more than one full-course equivalent of 200-level English. The only exception is when English 240 is taken after another 200-level English course or courses in which case the student may receive credit for up to two full-course equivalents in 200-level English.

Students with credit in senior English courses that have prerequisites may not normally take 200-level English courses, except English 240.

Junior Courses

English 202  
F(3-1T)  
Reading and Writing about Literature  
Selected works of poetry, fiction and drama (other genres may be included), with instruction in critical writing.  
Note: Students with credit in any 200-level English course may not register in English 202.

English 231  
H(3-1T)  
Introduction to Fiction  
Selected novels and short stories, with instruction in critical writing.  
Note: Open to students with credit in no more than one half-course equivalent of 200-level English.

English 233  
H(3-1T)  
Introduction to Non-Fictional Prose  
Selected works of non-fictional prose, with instruction in critical writing.  
Note: Open to students with credit in no more than one half-course equivalent of 200-level English.

English 235  
H(3-1T)  
Introduction to Poetry  
Selected poetry, with instruction in critical writing.  
Note: Open to students with credit in no more than one half-course equivalent of 200-level English.

English 237  
H(3-1T)  
Introduction to Dramatic Literature  
Selected plays, with instruction in critical writing.  
Note: Open to students with credit in no more than one half-course equivalent of 200-level English.

English 239  
H(3-1T)  
Introduction to Literary Studies  
Emphasizes fundamental skills: how to read a text accurately and critically; how to write logically, clearly, and correctly; how to listen and speak in a formal discussion.  
Note: Open to students with credit in no more than one half-course equivalent of 200-level English.

Note: Instructors will offer a variety of course designs and reading lists to teach these skills: check the description of each section posted on the English Department Web site.

English 240  
F(3-1T)  
Literature in English from the Middle Ages to the Present  
A historical survey, with instruction in critical writing.  
Note: Not open to students with credit in English 301.  

Note: Compulsory for English Majors and Honours students.

English 302  
F(3-0)  
Introduction to Contemporary Theoretical Practices  
An examination of the claims and assumptions of a range of contemporary critical practices, such as formalism, structuralism, deconstruction, feminism and gender studies, new historicism, psychoanalytic criticism, and cultural and ideological critique. Includes practice in the application of theory to literary texts.  
Prerequisite: One full-course equivalent of English and/or Comparative Literature, or consent of the Department.

Note: Not open to students with credit in English 301.  

Note: Compulsory for English Majors, Minors and Honours students.

English 312  
F(3-0)  
Shakespeare  
A consideration of the development and variety of Shakespeare’s dramatic art.  
Prerequisite: One full-course equivalent of English and/or Comparative Literature, or consent of the Department.

English 318  
F(3-0)  
Women’s Literary Tradition  
The writings of women in English from the medieval period to the present, with emphasis on the evolution of a complex and varied literary tradition.  
Prerequisite: One full-course equivalent of English and/or Comparative Literature, or consent of the Department.

English 329  
H(3-0)  
Reading Poetry  
Practice in the close reading of poems. The poetry chosen will emphasize the nineteenth and twentieth centuries.  
Note: Not open to students with credit in English 354. Does not require any prerequisite.

English 354  
F(3-0)  
Poetry: Reading and Analysis  
A study of the major forms, modes, and techniques of poetry written in English, through textual analysis and close reading. Detailed attention to tropes and figures, form, tone, diction, implication, point of view.  
Prerequisite: One full-course equivalent of English and/or Comparative Literature, or consent of the Department.

Note: Compulsory for English Majors, Minors and Honours students.

English 356  
F(3-0)  
Drama  
A survey of dramatic literature in English from its medieval origins to the present.  
Prerequisite: One full-course equivalent of English and/or Comparative Literature, or consent of the Department.

English 358  
F(3-0)  
Fiction  
The development of prose fictional forms, including the novel and the short story, from the eighteenth century to the present.  
Prerequisite: One full-course equivalent of English and/or Comparative Literature, or consent of the Department.
### Courses of Instruction

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 364</td>
<td>Poetry Writing I</td>
<td>F(1-2S-1T)</td>
<td>Basic instruction in writing poetry, with particular emphasis on the short lyric poem.</td>
</tr>
<tr>
<td>English 366</td>
<td>Fiction Writing I</td>
<td>F(1-2S-1T)</td>
<td>Basic instruction in the art of fiction writing, with particular emphasis on the short story.</td>
</tr>
<tr>
<td>English 370</td>
<td>Canadian Literature</td>
<td>F(3-0)</td>
<td>A survey of Canadian literature from the beginnings to the present. The course will include representative works of such writers as Haliburton, Moodie, the Confederation poets, Crawford, Leacock, Grove, Mitchell, Wilson, MacLennan, Laurence, Richler, Munro, Birney and Atwood.</td>
</tr>
<tr>
<td>English 381</td>
<td>The History of English</td>
<td>H(3-0)</td>
<td>(Linguistics 381) An introduction to important changes and stages in the history of English including its Indo-European and Germanic origins and a consideration of Modern English grammar and orthography from a historical perspective.</td>
</tr>
<tr>
<td>English 383</td>
<td>Topic in Literature and the Environment</td>
<td>H (3-0)</td>
<td>Topic in Aboriginal Literatures Note: English 385 does not require any prerequisite.</td>
</tr>
<tr>
<td>English 387</td>
<td>Topic in Literature and Society</td>
<td>H(3-0)</td>
<td>Topic in Aboriginal Literatures Note: English 385 does not require any prerequisite.</td>
</tr>
<tr>
<td>English 389</td>
<td>Topic in Gay or Lesbian Literature</td>
<td>H(3-0)</td>
<td>Topic in Gay or Lesbian Literature Note: English 389 does not require any prerequisite.</td>
</tr>
<tr>
<td>English 392</td>
<td>International English Literature</td>
<td>F(3-0)</td>
<td>Literatures written in English outside of Canada, Great Britain, and the United States, encompassing representative works from several areas such as Africa, Australasia, the Caribbean, and the Indian subcontinent.</td>
</tr>
<tr>
<td>English 393</td>
<td>Speculative Fiction I: Science Fiction</td>
<td>H(3-0)</td>
<td>An examination of works of science fiction.</td>
</tr>
<tr>
<td>English 395</td>
<td>Speculative Fiction II: Fantasy</td>
<td>H(3-0)</td>
<td>An examination of works of fantasy.</td>
</tr>
<tr>
<td>English 397</td>
<td>Literature for Younger Children</td>
<td>H(3-0)</td>
<td>A historical and critical study of literature for younger children.</td>
</tr>
<tr>
<td>English 398</td>
<td>Children’s Literature</td>
<td>F(3-0)</td>
<td>A historical and critical study of children's literature.</td>
</tr>
<tr>
<td>English 399</td>
<td>Detective Fiction</td>
<td>H(3-0)</td>
<td>An examination of detective fiction.</td>
</tr>
<tr>
<td>English 401</td>
<td>Old English Language and Prose Literature</td>
<td>H(3-0)</td>
<td>Study of the language of the Anglo-Saxons through reading of prose texts.</td>
</tr>
<tr>
<td>English 403</td>
<td>Old English Poetry</td>
<td>H(3-0)</td>
<td>Reading and analysis of Old English poetry in the original language.</td>
</tr>
<tr>
<td>English 404</td>
<td>Middle English Literature</td>
<td>F(3-0)</td>
<td>Representative works of the Middle English period; the Middle English language.</td>
</tr>
<tr>
<td>English 408</td>
<td>Sixteenth-Century Literature</td>
<td>F(3-0)</td>
<td>Survey of the literature of the Renaissance from 1600.</td>
</tr>
<tr>
<td>English 414</td>
<td>Seventeenth Century Literature</td>
<td>F(3-0)</td>
<td>Survey of the literature of the Renaissance from 1650, including Milton.</td>
</tr>
<tr>
<td>English 430</td>
<td>Restoration and Eighteenth Century Literature</td>
<td>F(3-0)</td>
<td>Survey of literature from 1860 to 1880.</td>
</tr>
<tr>
<td>English 440</td>
<td>Literature of the Romantic Period</td>
<td>F(3-0)</td>
<td>Survey of literature of the Romantic period.</td>
</tr>
<tr>
<td>English 444</td>
<td>Victorian Literature</td>
<td>F(3-0)</td>
<td>Survey of British literature of the later nineteenth century.</td>
</tr>
<tr>
<td>English 446</td>
<td>American Literature to 1900</td>
<td>F(3-0)</td>
<td>Survey of American literature to 1900, with emphasis on the nineteenth century.</td>
</tr>
<tr>
<td>English 450</td>
<td>British Literature from 1900</td>
<td>F(3-0)</td>
<td>Survey of British literature from 1900 to the present.</td>
</tr>
<tr>
<td>English 462</td>
<td>American Literature from 1900</td>
<td>F(3-0)</td>
<td>Survey of American literature from 1900 to the present.</td>
</tr>
<tr>
<td>English 470</td>
<td>Canadian Literature</td>
<td>F(3-0)</td>
<td></td>
</tr>
</tbody>
</table>
Survey of Canadian literature from the beginnings to the present.

**Prerequisites:** English 354 and one of 301 or 302, or consent of the Department.

**Note:** Not open to students with credit in English 370.

English 480 \hspace{1cm} F(3-0)

**Literary Theory**

Survey of the major theories of and approaches to literature from classical times to the present.

**Prerequisites:** English 354 and one of 301 or 302, or consent of the Department.

English 492 \hspace{1cm} F(3-0)

**International Literature**

Literatures written in English outside of Great Britain, the United States, and Canada, with works from several areas such as Africa, Australasia, the Caribbean, and the Indian subcontinent.

**Prerequisites:** English 354 and one of 301 or 302, or consent of the Department.

**Note:** Not open to students with credit in English 392.

English 494 \hspace{1cm} F(2-1T-1)

**Poetry Writing II**

A close examination and discussion of the student's own work, with emphasis on technique.

**Prerequisites:** Full junior English or equivalent and consent of the Department.

**Note:** One month before the start of classes, prospective students must submit a portfolio of their own work for evaluation before consent of the Department will be given. Details of this procedure are available from the Department of English.

English 496 \hspace{1cm} F(2-1T-1)

**Fiction Writing II**

A close examination and discussion of the student's own work, with emphasis on technique.

**Prerequisites:** Full junior English or equivalent and consent of the Department.

**Note:** One month before the start of classes, prospective students must submit a portfolio of their own work for evaluation before consent of the Department will be given. Details of this procedure are available from the Department of English.

English 501 \hspace{1cm} H(3-0)

**Studies in Drama**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 503 \hspace{1cm} H(3-0)

**Studies in Fiction or Non-Fictional Prose**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 504 \hspace{1cm} F(2S-2T)

**Honours Project**

Note: Normally restricted to English Honours students. Students must consult with the English Department for information and advice by March of the year in which they plan to register in English 504.

English 505 \hspace{1cm} H(3-0)

**Studies in Poetry**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 507 \hspace{1cm} H(3-0)

**Studies in British Literature**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 509 \hspace{1cm} H(3-0)

**Studies in Canadian Literature**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 510 \hspace{1cm} F(3-0)

**Advanced Textual Studies**

Prerequisite: One full-course equivalent in English at the 400 level and consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 511 \hspace{1cm} H(3-0)

**Studies in American Literature**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 513 \hspace{1cm} H(3-0)

**Studies in International Literatures in English**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 517 \hspace{1cm} H(3-0)

**Theoretical and Cultural Studies**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 519 \hspace{1cm} H(3-0)

**Studies in a Literary Period**

Prerequisite: One full-course equivalent in English at the 400 level, or consent of the Department.

**MAY BE REPEATED FOR CREDIT**

English 521 \hspace{1cm} Q(1.5-0)

**Senior Workshop**

Prerequisite: Consent of the Department.

English 598 \hspace{1cm} F(2-1T-1)

**The Book-Length Manuscript**

A close examination and discussion of the student's own work, with emphasis on advanced technique.

**Prerequisites:** English 364, 366, 494, and/or 496 or equivalent and consent of the Department.

**Note:** This course is double-numbered with English 698 (which will have separate and more strenuous student expectations). A student may take English 598 as an undergraduate student and 698 as a graduate student in English.

**Note:** One month before the start of classes, prospective students must submit a portfolio of their own work for evaluation before consent of the Department will be given. Details of this procedure are available from the Department of English.

**MAY BE REPEATED FOR CREDIT**

**Graduate Courses**

English 603 \hspace{1cm} H(3-0)

**Studies in Genre**

MAY BE REPEATED FOR CREDIT

English 605 \hspace{1cm} H(3-0)

**Studies in National or International Literatures**

MAY BE REPEATED FOR CREDIT

English 607 \hspace{1cm} H(3-0)

**Theoretical and Cultural Studies**

MAY BE REPEATED FOR CREDIT

English 609 \hspace{1cm} H(3-0)

**Studies in a Literary Period**

MAY BE REPEATED FOR CREDIT

English 612 \hspace{1cm} F(3-0)

**Studies in Medieval and Renaissance Literature**

MAY BE REPEATED FOR CREDIT

English 618 \hspace{1cm} F(3-0)

**Studies in Restoration and Eighteenth-Century Literature**

MAY BE REPEATED FOR CREDIT

English 620 \hspace{1cm} F(3-0)

**Studies in Romantic Literature**

MAY BE REPEATED FOR CREDIT

English 622 \hspace{1cm} F(3-0)

**Studies in Nineteenth-Century Literature**

MAY BE REPEATED FOR CREDIT

English 624 \hspace{1cm} F(3-0)

**Studies in Modern Literature**

MAY BE REPEATED FOR CREDIT

English 670 \hspace{1cm} F(3-0)

**Studies in American Literature**

MAY BE REPEATED FOR CREDIT

English 676 \hspace{1cm} F(3-0)

**Studies in Canadian Literature**

MAY BE REPEATED FOR CREDIT

English 698 (which will have separate and more strenuous student expectations). A student may take English
English Language Foundation Program

**Introduction to Writing/Grammar**

Strategies to improve skills in written English. Concentrates on the formation of sentences and on the basic formation of the expository paragraph. Acquisition and use of grammatical structures to improve accuracy in writing English.

**Prerequisite:** Proof of English as a Second Language training with results at low to intermediate level.

**Corequisites:** English Language Foundation Program 153, 157

**Note:** Not available for credit towards a degree/ diploma program.

**English Language Foundation Program 157**

**Introduction to Listening/Speaking**

English language listening and speaking skills needed to function in a Canadian cultural and educational setting.

**Prerequisite:** Proof of English as a Second Language training with results at low to intermediate level.

**Corequisites:** English Language Foundation Program 150, 153.

**Note:** Not available for credit towards a degree/ diploma program.

**Level 1 Courses**

**English Language Foundation Program 170**

**Writing English 1**

Strategies to improve skills in written English. Concentrates on paragraphs and short essays. Use of grammatical structures to improve accuracy in writing English.

**Prerequisite:** Evidence of Intermediate to Advanced Intermediate English language proficiency.

**Corequisites:** English Language Foundation Program 163, 167.

**Note:** Not available for credit towards a degree/ diploma program.

**Reading English 1**

Strategies for reading and understanding academic texts written in English.

**Prerequisite:** Same as English Language Foundation Program 160.

**Corequisites:** English Language Foundation Program 160, 167.

**Note:** Not available for credit towards a degree/ diploma program.

**English Language Foundation Program 173**

**Listening/Speaking English 1**

English language listening and speaking skills needed in an academic setting.

**Prerequisite:** Same as English Language Foundation Program 160.

**Corequisites:** English Language Foundation Program 160, 163.

**Note:** Not available for credit towards a degree/ diploma program.

**Level 2 Courses**

**English Language Foundation Program 177**

**Writing English 2**

Strategies for writing essays and research papers in English. A continuation of English Language Foundation Program 160. Includes techniques for researching topics, organizing ideas, revising and editing written work, self-evaluation and peer review/ discussion.

**Prerequisite:** Advanced-intermediate English language proficiency as demonstrated by one of the following: (1) Successful completion of English Language Foundation Program 160, 163, and 167; or (2) Entrance Level II performance on the English Language Foundation Program assessment.

**Corequisites:** English Language Foundation Program 173, 177.

**Note:** Not available for credit towards a degree/ diploma program. Students may take one credit half course, upon approval, while enrolled in Level 2.

**Reading English 2**

A continuation of English Language Foundation Program 163. Provides strategies for increasing vocabulary and reading speed. Develops skills in recognizing textual patterns, drawing conclusions, and making inferences.

**Prerequisite:** Same as English Language Foundation Program 170.

**Corequisites:** English Language Foundation Program 170, 177.

**Note:** Not available for credit towards a degree/ diploma program. Students may take one credit half course, upon approval, while enrolled in Level 2.

**English Language Foundation Program 167**

**Listening/Speaking English 2**

A continuation of English Language Foundation Program 167. Concentrates on discussion and oral presentation skills.

**Prerequisite:** Same as English Language Foundation Program 170.

**Corequisites:** English Language Foundation Program 170, 173.

**Note:** Not available for credit towards a degree/ diploma program. Students may take one credit half course, upon approval, while enrolled in Level 2.
Level 3 Courses

English Language Foundation Program 180

Writing English 3
Writing focuses on developing research skills and perfecting essay writing.
Prerequisite: Advanced English language proficiency as demonstrated by one of the following: (1) Successful completion of English Language Foundation Program 170, 173 and 177; or (2) Entrance Level III performance on the English Language Foundation Program assessment.
Corequisites: English Language Foundation Program 183, 187.
Note: Not available for credit towards a degree/diploma program. Students may take one credit half course, upon approval, while enrolled in Level 3.

English Language Foundation Program 183

Reading English 3
A continuation of English Language Foundation Program 173. Students select texts based upon individual interests.
Prerequisite: Same as English Language Foundation Program 180.
Corequisites: English Language Foundation Program 180, 187.
Note: Not available for credit towards a degree/diploma program. Students may take one credit half course, upon approval, while enrolled in Level 3.

Listening/Speaking English 3
Units speaking, listening, and reading by discussion in a seminar format based upon texts selected by students.
Prerequisite: Same as English Language Foundation Program 180.
Corequisites: English Language Foundation Program 180, 183.
Note: Not available for credit towards a degree/diploma program. Students may take one credit half course, upon approval, while enrolled in Level 3.

Junior Course

Entrepreneurship and Innovation 201
Introduction to Business Venturing
Introduces students to the various management disciplines from the perspective of creating a new business venture. The primary learning methodology is through a project in which students identify a business opportunity, research the opportunity, write a business plan for the business and present the plan in class.
Note: This course is not available for credit towards the Bachelor of Commerce or Minor in Management and Society.

Senior Courses

Entrepreneurship and Innovation 381
Principles of Entrepreneurship
Overview of the process of entrepreneurship with focus on the role of the entrepreneur in new venture initiative and development. Application of knowledge of the processes involved in idea generation and evaluation ending in the technical, market, financial and human resource feasibility of a concept.
Prerequisite: Second year standing or Entrepreneurship and Innovation 201 or consent of the business school.

Entrepreneurship and Innovation 401
Opportunity Identification
Application of knowledge of the processes involved in idea generation and evaluation ending in the technical, market, financial and human resource feasibility of a concept. Critical literature will be reviewed as it applies to the early stages of concept development and evaluation.
Prerequisite: Third year standing and Entrepreneurship and Innovation 201 or 381 or consent of the business school.

Entrepreneurship and Innovation 403
New Venture Planning
A project based course in developing and writing a business plan for an existing and/or growth oriented venture. Focus will be given to the content, form and uses of a formal business plan.
Prerequisites: Third year standing and Entrepreneurship and Innovation 201 or 381 or consent of the business school.

Entrepreneurship and Innovation 405
New Venture Start-Up
Application of the strategies and tactics for the creation and growth of potential new ventures. Students will address key questions in bringing together critical resources to launch a venture, review important empirical research in the field and participate in project work.
Prerequisites: Third year standing and Entrepreneurship and Innovation 201 or 381 or consent of the business school.

Family Business Management
Explores the functions, issues, operations, and dynamics of family businesses. Topics include, but are not limited to the strengths and weaknesses of family businesses, managing family business conflict, management succession, professionalization, and strategic planning. The pedagogy of the course relies on field projects, discussions of readings and cases, and guest speakers.

Prerequisite: Third year standing.
Note: Credit for both Entrepreneurship and Innovation 499 and Strategy and General Management 559.09 will not be allowed.

Entrepreneurship and Innovation 559
Selected Topics in Entrepreneurship and Innovation
Investigation of selected topics related to entrepreneurship, venture development and family business, emphasizing the practical application of theory and principles to actual business situations and venture opportunities.
Prerequisite: Third year standing.

MAY BE REPEATED FOR CREDIT

Graduate Courses

Entrepreneurship and Innovation 781
Opportunity Development
A project and case based course designed to explore concepts of opportunity development.
Prerequisite: Entrepreneurship and Innovation 781
Note: Credit for both Entrepreneurship and Innovation 781 and Policy and Environment 783 will not be allowed.

Entrepreneurship and Innovation 783
Venture Development
A project based course designed around the formation of business concepts in the formalization of a business plan.
Prerequisite: Entrepreneurship and Innovation 781
Note: Credit for both Entrepreneurship and Innovation 783 and Policy and Environment 783 will not be allowed.

Courses of Instruction
Environmental Design EVDS

The following list of courses, offered by members of the Faculty of Environmental Design and members of other departments in the University, is specific to the 2003-2004 academic year.

Students are advised that some of the courses listed below may not be offered in 2003-2004 if special circumstances require that they be dropped.

Students should consult with their Faculty advisor before registering for any course.

Core Courses in Environmental Design are:
- Environmental Design 604. Conceptual Bases of Environmental Design
- Environmental Design 609. Environmental Design Practice
- Environmental Design 701. Advanced Environmental Design Practice
- Environmental Design 702. Advanced Environmental Design Practice
- Environmental Design 711. Theoretical Basis for Interdisciplinary Intervention and Design.

Senior Courses
- Environmental Design 533 H(3-0)
  Introduction to Industrial Design
  Historic and conceptual frameworks of industrial design; principles of ergonomics, materials and industrial production technologies; industrial design as technique and creative process; professional perspectives. Lectures and field work. Environmental Design 533 is a prerequisite or corequisite to Industrial Design studio courses.

- Environmental Design 583 H(1.5-1.5T)
  Topics in architecture, environmental science, industrial design and planning.

- Environmental Design 597 Q(1.5-1.5T)
  Topics in architecture, environmental science, industrial design and planning.

Graduate Courses
- Environmental Design 603 H(4-2)
  Introduction to the Professional Practice of Environmental Science
  Study of the nature of environmental science and its professional practice. Examples will be drawn from a broad range of professional activities. The course will examine problems of project definition, design, scoping and budgeting; preparation of proposals for research and consultations.

- Environmental Design 604 F(4.5-0)
  Conceptual Bases of Environmental Design
  Conceptual frameworks for design intervention in the environment based on perspectives from the humanities, natural and social sciences of human relation to natural, social and built environments; theories and models of investigation and intervention; discussion of professional responsibilities and environmental design issues. Required course for all Environmental Design degree program students. Design Camp, for first year students, is part of the Environmental Design 604 core course.

- Environmental Design 605 Q(1.5-0)
  Research Methods for Environmental Design
  Overview of methods for developing information required for design intervention in the natural and built environment with emphasis on research techniques from the social sciences. Interdisciplinary perspectives on techniques and their appropriateness for the designer. Roles of research methods in design processes. Practical issues in conducting research.

- Environmental Design 609 H(0-6)
  Environmental Design Practice
  Introduction to environmental design encompassing perspectives of architecture, industrial design, urban and regional planning and environmental science; communication and interdisciplinary approaches; environmental design as technique and creative process. Lectures, field and studio work.

- Environmental Design 615 Q(1-3)
  Introduction to Computer Visualization in Urban Design
  Introduction to computer visualization techniques with emphasis on CAD studio project.

- Environmental Design 617 H(3-0)
  Environmental Design Practice
  A broad interdisciplinary view of methods used to collect and interpret information necessary in the design and development of products. Areas dealt with include but are not limited to user needs and preferences, manufacturing processes and market investigations.

- Environmental Design 621 H(3-1)
  Health in the Built Environment
  Concepts of health in an environmental context; historic approaches to preventative medicine; medical basis of building-related illness; case studies in indoor air quality; strategies for prescription and design of healthy indoor environments.

- Environmental Design 622 H(3-0)
  Sustainability and the Built Environment
  The principle of sustainability recognizes people as temporary stewards of their environment, working toward a respect for natural systems and a higher quality of life. Examination of the built environment and the tools to achieve a stable and balanced and a regenerative ecosystem in a process of responsible consumption, wherein waste is minimized and the built environment interacts with natural environments and cycles. Healthy interior environments, resource efficiency, ecologically benign materials, renewable energies and social justice issues are examined.

- Environmental Design 625 H(3-0)
  Environmental Design of Wetlands and Inundated Areas

- Environmental Design 627 Q(1.5-1.5)
  Computer Literacy in Environmental Design

- Environmental Design 629 H(3-0)
  Community Development

- Environmental Design 633 H(3-0)
  Environmental Reserves

- Environmental Design 635 H(3-1.5)
  Computer Applications for Industrial Design

- Environmental Design 637 H(3-0)
  Environmental Engineering

- Environmental Design 639 H(3-0)
  Environmental Science

- Environmental Design 641 H(3-0)
  Environmental Design Planning 615

- Environmental Design 641 H(3-0)
  Environmental Design Planning 615

- Environmental Design 641 H(3-0)
  Environmental Design Planning 615

- Environmental Design 641 H(3-0)
  Environmental Design Planning 615
Courses of Instruction

Environmental Design 637 H(3S-0) Legal Institutions and the Environment

Sets the legal context for environmental design. Topics include aspects of the legal process such as the adversary system, doctrine of precedent, elements of the constitution, case analysis and statutory interpretation. Individual rights and remedies will also be considered, as well as jurisprudential questions about the function of law.

Environmental Design 639 H(3-1)
(formerly Environmental Design 683.88) Planning Theory

An introduction to planning theory. Develops a critical awareness of key historical, theoretical, and ethical frameworks; legal, political, and economic institutions; and an understanding of their implications for Canadian planning. An integrative normative procedural approach to planning is presented, one which is appropriate for a pluralistic liberal democratic society.

Environmental Design 641 H(3-3)
Applications of Plant Ecology to Environmental Management

Fundamental ecological concepts and their applications in Range Management and Forest Management. Range Management section covers such areas as range inventory, classification, assessment, balancing range resource with herd size, productivity and dynamics and various manipulative techniques to improve range productivity. Forest Management section deals with forest use, sustained yield concept, forest and site classification, mensuration, productivity, silviculture, crop rotations, forest planning, conservation and multiple use in forested areas. Weekend field trips to: central Alberta, central British Columbia and the Alberta foothills.

Environmental Design 643 H(3-0) Ecotourism Planning and Management

The definition of ecotourism and assessment of cutting-edge trends in the ecotourism marketplace. Specific needs of public-sector planners and park managers, and concerns of local tour operators and tourism service providers. Managing the impacts of tourism, marketing, establishing partnerships, methods for ensuring sustainability, strategies for communities affected by ecotourism and how to orient the ecotourist.

Environmental Design 645 H(0-8) Site Planning and Design

Site analysis, landscape potentials and constraints, development factors and criteria are discussed and applied to a human settlement project. Small and large scale projects are compared. Primarily studio project work, with lectures on methods and illustrative examples.

Prerequisite: Environmental Design Planning 615 and 633 or equivalent.

Environmental Design 647 H(3-0) Historic Preservation: Principles and Practice

Introduction to the concepts, approaches and practice of historic preservation from both an urban planning as well as an architectural perspective. Building conservation, historic districts, historic site development, ecomuseums, commercial area and neighbourhood revitalization are analysed for both public as well as private sector concerns. North American and European case studies are utilized.

Note: Offered in odd-even dated academic years.

Environmental Design 649 H(3-0) Impact Assessment

Biophysical, economic and social impact assessment will be reviewed in an integrated, interdisciplinary approach which will include lectures, studies of methodologies, theory and practical problems. Federal and various Provincial impact assessment policies and procedures will be considered.

Environmental Design 652 F(0-16) Basic Industrial Design Studio

Basic skills in form-giving for mass produced objects. Principles of two- and three-dimensional composition, space and form; the design process. The application of basic design principles to simple problems in industrial design.

Prerequisite or Corequisite: Environmental Design 533.

Note: Full course offered in single session only.

Note: Open to students in Environmental Design programs and available to students from other faculties with program permission.

MAY BE REPEATED FOR CREDIT

Environmental Design 653 H(3-0) Multimedia for Environmental Design

Laboratory course allowing students the opportunity to develop an understanding of computer multimedia techniques used to create interactive presentations, educational CD-ROM titles and web documents. The elements covered by the course are: visual (still, video and animation techniques), sound (quality and integration), and the use of web design software.

Note: Not open to students with credit in Environmental Design 683.56 or 697.35.

Environmental Design 657 H(3-0) Landscape Reclamation

Introduction to reclamation planning and practice covering such topics as reclamation goal setting, impact prediction, mitigation, materials handling, landscape reconstruction, revegetation, erosion control and industrial decommissioning. The course will focus on large scale developments such as strip mining, industrial plants and linear disturbances. The course is comprised of lectures, a project and student seminars.

Environmental Design 659 H(96 hours) The Ecology of the Canadian West Coast - A Field Course

A two-week field course conducted in late Spring to acquaint students with the ecosystems of the Canadian West Coast from the marine intertidal zone through mesothermal forest ecosystems to alpine tundra ecosystems. The use of plant ecology to help delineate functional, manageable ecosystem units is emphasized using the taxonomy, autoecology and synecology of some 450 plant species. Selected land use and management problems are observed and discussed. A minimum enrollment for the course is required.

Note: Offered in even-odd dated academic years.

Environmental Design 661 H(3-0)
(formerly Environmental Design 683.18) Ecosystem Management and Planning

Natural resource managers and planners are realizing (and operationalizing) the need for concordance between the dynamic process-and-pattern view of nature and the complex social milieu that forms the context for resource planning and management. The emerging field of ecosystem management is the embodiment of the professional response to this need. Examines the interdisciplinary approach of ecosystem management as the intersection between conservation biology, social science of natural resource management and organizational theory. Case studies and readings will be chosen to highlight current ecosystem management ideas and practice.

Environmental Design 663 H(3-0) Introduction to Policy Analysis

Introduces students to the major issues and policy responses to economic, social and environmental problems in Canadian communities. Provides an overall understanding of the political, societal, financial and institutional constraints that affect the processes of policy formation and implementation. Assists in the development of practical skills in the analysis, planning, monitoring and evaluation of public policies.

Environmental Design 665 H(3-0) Drawing Skills and Studio Techniques for Designers.

Introductory manual drawing studio for students of industrial design directed to developing skill in conceiving, developing and communicating ideas through various drawing styles, techniques and media.

Environmental Design 667 H(3-0) Geographic Information Systems for Environmental Design

Introduction to the use of GIS in urban planning and environmental management. Discussions on GIS modeling focus on population projection, location theory, land use modeling and environmental and ecological management. Case studies from both the public and private sector provide the basis of assignments. Emphasis given to developing skill in conceiving, developing and communicating ideas through various drawing styles, techniques and media.

Environmental Design 671 H(3-0)
(formerly Environmental Design 683.35) Urban Design Theory

Intended to provide students with an introduction to theories, concepts, methods and contemporary issues in urban design. Lectures, case studies, seminars and short project.

Environmental Design 673 H(3-0)
(formerly Environmental Design 683.42) Wildlife Management Planning
Reviews the history of wildlife management and the principles of effective planning, including scoping issues, dealing with constraints, goal setting, effective public involvement, conflict resolution, development and evaluation of alternatives, and applying science to evaluate management actions. The course begins with a series of introductory lectures on the fundamentals of wildlife management, history of wildlife management and policy, the need for science in management, and the changing context of public involvement in resource management. Lectures by professional practitioners provide insights into the practical world of resource management and planning. Assignments allow students to assess a wildlife issue, critically review selected wildlife management plans, and to write and present a strategic management plan.

Environmental Design 677 H(3-0) Urban and Planning Law

Examination of urban development from the perspective of constitutional constraints, concepts and powers of municipal corporations, planning machinery and legal techniques to effect or to challenge planning policy and practices.

Note: Offered in even-odd dated academic years.

Environmental Design 679 H(3-0) Computer Modeling of the Environment

Introduction to the use of computer modeling, animation and virtual reality in architecture and urban design. Professional CAD and rendering applications will be used to explore the aesthetic and technical aspects of design. Emphasis given to developing a sensitivity to the application appropriate to communicating three dimensional urban and natural form using computer generated images.

Environmental Design 681 H(3-0) Environmental Ethics Seminar

Intended to provide the student with a thorough grounding in the theory and practice of environmental ethics. Particularly directed to students in Environmental Design and concerns itself primarily with philosophical and ethical issues facing environmental scientists, planners and designers. Includes such topics as animal rights, deep ecology, eco-feminism, environmental pragmatism and sustainable development.

Environmental Design 683 H(1.5-1.5T) Advanced Special Topics in Environmental Design

Topics in architecture, environmental science, industrial design and planning.

MAY BE REPEATED FOR CREDIT

Environmental Design 685 H(3-0) Industrial Design Clinic

The evaluation of new products and services with emphasis on the Industrial Design content. The goal of the evaluation exercise is to provide the client with advice.

Note: Offered in odd-even dated academic years.

Environmental Design 687 H(3-0) Ergonomics for Environmental Design

Consideration of human physical, physiological, perceptual, and behavioural characteristics in the design of an object or environment for safe and effective use. Methods of obtaining human factors information, applying this information in a design process, and evaluating designs against human factors constraints and user performance criteria. Sources of information and factors affecting the validity of information. The scope of human factors, ergonomics, anthropometry, and related disciplines. Independent research in applications of individual interest.

Note: Offered in odd-even dated academic years.

Environmental Design 689 H(3-0) Industrial Design Technology

Application of contemporary and developing technologies to industrial design. Content covers manufacturing processes and materials, with particular emphasis on metals and plastics. The course includes lectures, design exercises, seminar discussions, case studies and field trips.

Note: Offered in even-odd dated academic years.

Environmental Design 691 H(3-0) History of Industrial Design

Review of the social, cultural and technical environment of Industrial Design; major personalities, design movements and achievements in the design of products since 1900; current and emerging trends.

Note: Offered in odd-even dated academic years.

Environmental Design 693 H(3-0) People and Products

Seminar course exploring the interactions between people and products on their many levels and in their multifaceted complexity. Product perception, attitudes, meaning, semiotics, and psycho-social processes. Awareness of frameworks and concepts for understanding the interaction between people and products from industrial design, psychology, sociology, anthropology, ethnology, and other disciplines. Application of such frameworks, concepts, and methods to the design process.

Note: Offered in even-odd dated academic years.

Environmental Design 697 Q(1.5-1.5T) Advanced Special Topics in Environmental Design

Topics in architecture, environmental science, industrial design and planning.

MAY BE REPEATED FOR CREDIT

Environmental Design 701 H(0-8) Advanced Environmental Design Practice

Interdisciplinary training in environmental design practice at an advanced level, centred on case studies, information probing and analysis; culminates in a policy planning, design or management assignment and an environmental design presentation on a real world problem.

Prerequisite: Environmental Design 609 or 711 or permission of instructor.

Note: Credit for both Environmental Design 701 and 702 will not be allowed.

Environmental Design 702 F(0-16) Advanced Environmental Design Practice

Interdisciplinary training in environmental design practice at an advanced level, centred on case studies, information probing and analysis; culminates in a policy planning, design or management assignment and an environmental design presentation on a real world problem.

Prerequisite: Environmental Design 609 or 711 or permission of instructor.

Note: Credit for both Environmental Design 701 and 702 will not be allowed.

Environmental Design 703 Q(0-3) Directed Study in Environmental Design

Research, readings or a studio project in architecture, environmental science, industrial design or planning.

Note: Open only to Environmental Design students with consent of the Associate Dean (Academic).

MAY BE REPEATED FOR CREDIT

Environmental Design 707 H(0-6) Ecological Management in Land Use Planning

A studio course in which a real land use problem with a major ecological management component is taken on by the class as a consulting team. Problem definition, proposal preparation and the complete study from regional biological and land use inventory through client presentations of interim and final results are completed within the term. The final report must include development recommendations and environmental management guidelines. Projects are drawn mainly from the resource development industry, although other potential clients are considered.

Environmental Design 709 H(3-0) Product and Technology Assessment

Theoretical, legal, and practical aspects of assessing products and technologies for their environmental impacts (socio-economic, health, safety, and biophysical). Philosophy and theory of PATA, life cycle assessment, life cycle costing, risk assessment and management, green product endorsement and labelling, and purchasing guidelines are explored through lectures, seminar, and projects.

Note: Offered in odd-even dated academic years.

Environmental Design 711 H(0-8) Theoretical Basis for Interdisciplinary Intervention and Design

Comparisons and contrasts among disciplinary, multidisciplinary and interdisciplinary intervention and research. Focus on interdisciplinary teamwork knowledge and skills on the ability to integrate research into professional real world contexts and on the ability to communicate research results effectively. This course is open only to students registered in a PhD program and is a prerequisite to Environmental Design 702.

Environmental Design 713 H(3-1) Research and Analytic Methods for Planning

Advanced planning techniques and methods for managing, analyzing, interpreting, and presenting data and information, with an emphasis on computer applications.

Not open to students with credit in Environmental Design 745.
Courses of Instruction

Environmental Design 723 H(3-0)
International Development Planning: Theory and Practice
Examines strategies for urban development within the context of a globalized economy. Competition for investment, global interdependence, technological change, growing income polarities, and environmental degradation are creating new challenges in the urbanizing world. Planning concepts and policies will be examined in different economic, institutional and cultural settings with an emphasis on economic, social and physical aspects of change. Selected best practices in North America, Western and Eastern Europe will illustrate different approaches to development and sustainability.

Environmental Design 725 H(3-0)
Topics in Wildlife Management and Resource Development
The practice of wildlife management combines the science of ecology with an understanding of human social and economic needs. It acknowledges that the root of environmental problems lies in the economy and human culture. Through a series of assigned readings, seminars and discussions, the course will examine current issues and methods in wildlife management practice, conservation biology, wildlife population management, community-based wildlife management, and environmental impact assessment.

Environmental Design 731 H(3-0)
Cultural Tourism
Designed to provide students with an introduction to the wide range of existing cultural tourism possibilities, while emphasizing the management design and planning dimensions of historic resources (historic sites, buildings, festivals, events and regional heritage initiatives). Case study approach whenever appropriate.

Note: Offered in even-odd dated academic years.

Environmental Design 743 H(0-8)
Studio in Urban Design
These urban design studies explore contemporary problems in urban development and design, and emphasize a concern for place over an extended period of time, human behaviour - built form relationships and environment conservation goals. The approach aims to produce urban design that is locale-specific and yet responsive to changes in the ways we live.

May be repeated for credit.

Environmental Design 747 H(36 hours in Fall or Winter Session)
Management in Environmental Science
Introduces students to Environmental Management Systems and a set of 22 environmental management tools, which can be used by corporations and institutions to reduce their adverse impacts on the environment and to conserve resources. Lectures and seminars will review current practice, theory and provide specific examples. Ways and means of controlling activities of institutions and corporations that affect the environment, rather than on managing the environment.

Environmental Design 749 H(3-0)
Water Management
A broad perspective on water management issues through lectures, seminars, case studies and extensive readings. Water quality, quantity, technology, aesthetics, recreation and in stream uses with an emphasis on Canada and Western Canada in particular. A review of legislation and policy at municipal, provincial, federal and international levels.

Environmental Design 762 F(0-16)
Advanced Studio in Environmental Design
Topics vary from year to year, depending on such factors as current issues and contemporary problems. A number of studio topics may be offered to accommodate a variety of interests.

Note: Full course offered in single session only.
May be repeated for credit.

Environmental Design 783 H(0-3)
Directed Study in Environmental Design
Research, readings or a studio project in architecture, environmental science, industrial design or planning.

Note: Open only to Environmental Design degree students with consent of the Associate Dean (Academic).
May be repeated for credit.

Environmental Design 791 H(0-8)
Studio in Industrial Design
Professional experience in design principles and/or analytical methods, inter-disciplinary approaches and specific skills. Topics vary from year to year, depending on such factors as current issues and contemporary problems. A variety of studios may be offered to accommodate the varied level of student development.

May be repeated for credit.

Environmental Design 792 F(0-16)
Studio in Industrial Design
Professional experience in design principles and/or analytical methods, interdisciplinary approaches and specific skills. Topics vary from year to year, depending on such factors as current issues and contemporary problems. A variety of studios may be offered to accommodate the varied level of student development.

Prerequisite or Corequisite: Environmental Design 533.

Note: Full course offered in single session only.
May be repeated for credit.

Environmental Design 799 H(3-0)
Preceptorship
A Preceptorship is a study and training arrangement made between a student and an employer or an equivalent supervisor which has specific educational objectives, a method of evaluation, and is an integral part of a student’s Program of Studies. Preceptorships offer a number of benefits: acquiring skills and knowledge which may be better obtained outside the University; developing first-hand experience of professional design practice; preparing for more focused studies in the Faculty; and conducting research. An approved preceptorship assignment is equivalent to full-time studies. Preceptorships are not normally approved until a Program of Study is at least conditionally approved.

May be repeated for credit.

Master’s Degree Project. Students in Environmental Design, undertaking their Master’s Degree Project, will register in PROJ 777/778.

Environmental Design Architecture 511 H(3-1)
Building Science and Technology I
Functioning of the building enclosure: demonstration of the behaviour of building elements and their sub-assemblies under differential temperature and pressure stresses; fundamentals of acoustics; nature and use of building materials; response of building materials to climatic cycles of radiation, precipitation, heating and cooling.

Note: Credit for both Environmental Design Architecture 511 and Architectural Studies 449 will not be allowed.

Environmental Design Architecture 519 H(3-0)
Structures for Architects I
An overview of the different structural systems which may be considered for buildings including: an intuitive application of the principles of mechanics; the relationship of form and structural resistance; typical applications in steel, reinforced concrete and composite systems; and long spans, tall buildings and space structure principles.

Environmental Design Architecture 521 H(3-0)
Introduction to Design Theories
The contemporary cultural, social, and philosophical arenas in which architecture exists are examined through lectures, readings and seminars. The course runs in conjunction with Environmental Design Architecture 581.

Note: Credit for both Environmental Design Architecture 521 and Architectural Studies 455 will not be allowed.

Environmental Design Architecture 523 H(3-0)
History of Architecture and Human Settlements
A survey history of architecture and human settlement from the prehistoric times until the present. The first course addresses the premodern traditions of the major world cultures. The second course explores the traditions of the Western world from the beginning of the Italian Renaissance until the present. The courses will examine the changes...
523.01. History of Architecture and Human Settlements I - Premodern Traditions of the World

523.02. History of Architecture and Human Settlements II - The Western Tradition 1400 to Present

Note: Credit for both Environmental Design Architecture 523 and any of Architectural Studies 457, Environmental Design 671 or Environmental Design Architecture 625 will not be allowed.

Environmental Design Architecture 525 H(3-0) (formerly Environmental Design 683.15)

Architectural of the Western World Since 1900

A survey of the most significant examples of modern architecture, defining their stylistic character in light of developments in technology, the history of ideas, and social and historical factors.

Note: Credit for both Environmental Design Architecture 525 and Art History 425 will not be allowed.

Environmental Design Architecture 541 H(100 hours)

Graphics Workshop I

A skill building course with instruction and supervised experience in basic drafting, sketching and rendering; principles of perspective, drawing and presentation conventions. A variety of instruction may be offered to accommodate the varied level of student development.

Note: Credit for both Environmental Design Architecture 541 and Architectural Studies 451 will not be allowed.

Environmental Design Architecture 543 H(100 hours)

Graphics Workshop II

Instruction and supervised experience in drafting, sketching and rendering; drawing and presentation conventions. Builds on Environmental Design Architecture 541. A variety of instruction may be offered to accommodate the varied level of student development.

Note: Credit for both Environmental Design Architecture 543 and Architectural Studies 453 will not be allowed.

Environmental Design Architecture 561 H(3-0)

Architectural Professional Practice I

An overview of the structure, organization and changing roles of the design professions through history with emphasis on emerging patterns of practice. The procedures, constraints and opportunities of practice in its legal, ethical and technical dimensions will be analysed using a case study method.

Environmental Design Architecture 581 H(0-8)

Introductory Studio in Architecture

An introduction to architectural design. Through exercises in the manipulation and composition of space and form students will develop the foundation of basic design skills necessary to pursue more advanced architectural design studios.

Note: Credit for both Environmental Design Architecture 581 and Architectural Studies 443 will not be allowed.

Environmental Design Architecture 582 F(0-16)

Studio II in Architecture

An introduction to the application of ordering principles of architecture and to the numerous layers that contribute to the quality of inhabitation of place and space through design. Issues explored include the formal, the experiential and the theoretical concerns of architectural design in today’s cultural context.

Note: Credit for both Environmental Design Architecture 582 and Architectural Studies 444 will not be allowed.

Note: Full course offered in single session only.

Graduate Courses

Environmental Design Architecture 611 H(3-1)

Building Science and Technology II

Theory and principles of structural, foundation and building service systems. Application of building science principles to building structure and enclosure, examination of the types and manufacture of building elements and the application of building components to specific problems in architecture.

Environmental Design Architecture 615 Q(3-0)

Environmental Control Systems

Approaches to the design of heating, cooling, and ventilation systems for buildings. Issues in system design such as energy efficiency and indoor air quality.

Environmental Design Architecture 617 Q(3-0)

Architectural Lighting Design

Fundamentals of light and visual perception. Approaches to the design of non-uniform and uniform lighting systems for buildings. Issues in system design such as human satisfaction and performance and energy efficiency. Development of skills in the selection and design of lighting systems.

Environmental Design Architecture 619 H(3-0)

Structures for Architects II

Fundamentals of Structural Analysis including: the characteristics and performance of the various components of structures; the terminology and notation necessary for effective teamwork with structural engineering consultants; and basic design calculations for simple structures.

Environmental Design Architecture 621 H(3-0) (formerly Environmental Design 683.34)

Formal Strategies in Architecture

The relationship between architectural intention and a syntactic knowledge of architecture. Precedents used as vehicles of investigation to clarify the ways meaning is 'contained' in form. The formal strategies utilized by the architect in the generation of architectural meaning through built form.

Environmental Design Architecture 655 H(3-0)

Computer-Aided Architectural Design

Three- and two-dimensional representation of designs. Issues in computer-aided architectural design such as consequences for conceptualization, experiential qualities of design with machines, new approaches to generation of designs, re-use of information, possibilities of new information technologies, and personal productivity.

Environmental Design Architecture 661 H(3-0)

Management and Cost Control in the Building Industry

Organization for building design and construction according to various types of projects; networks and other systems for project control; building economics; cost analysis and estimating techniques; and cost controls during design and construction.

Environmental Design Architecture 682 F(0-16)

Intermediate Architectural Design Studio

An intermediate design studio in which students work on projects defined by the instructor. Topics may vary from year to year. They are determined by the creative interests of the faculty assigned to the course. Enrollment may be limited.

Note: Full course offered in single session only.

Note: Normally open only to students in Faculty of Environmental Design programs.

MAY BE REPEATED FOR CREDIT

Environmental Design Architecture 719 H(1.5-4)

Structures for Architects III

Advanced structural systems for buildings including: theory and basic analysis of foundations; structural connections and composite structures; system characteristics and architectural intent; and case studies in contemporary building structures.

Environmental Design Architecture 752 F(0-16)

Advanced Architecture Design Studio

An advanced design studio that explores advanced issues in architectural design. Local, national, and international distinguished practitioners normally participate in these studios. Topics vary from year to year.

Note: Full course offered in single session only.

Note: Normally open only to students in Faculty of Environmental Design degree programs.

MAY BE REPEATED FOR CREDIT

Environmental Design Architecture 753 H(0-8)

Studio in Architecture

A series of studios that explore issues in architectural design, interdisciplinary approaches or specific skills. Topics may vary.

Note: May be offered in six week period.

Note: Normally open only to students in Faculty of Environmental Design degree programs.

MAY BE REPEATED FOR CREDIT

Environmental Design Architecture 782 F(0-16)

Senior Studio in Architecture
A research oriented design studio in which students collaborate with faculty in projects exploring contemporary themes in architecture. Topics vary from year to year and are defined by the current research interests of Faculty. Enrollment may be limited.

Note: Full course offered in single session only.

MAY BE REPEATED FOR CREDIT

**Environmental Design Planning (EVDP)**

Instruction offered by members of the Faculty of Environmental Design.

**Graduate Courses**

**Environmental Design Planning 619**

**Ecological-Environmental Planning**

The concepts of ecology and “designing with nature” in application to human settlement planning, discussion of key concepts such as biomes, energy and nutrient flows, habitat, trophic gradients, etc. as these can be accounted for, altered, preserved, restored or manipulated in the various episodes of planning and designing for built environments. Conceptualizing the design of environments that enhance or create new urban ecological regimes conducive to sustainability. Examples ranging from general land use plans to housing and design projects.

Note: Not open to students with credit in Environmental Design Planning 634.

**Environmental Design Planning 634**

**Professional Planning Practice 1: Skills and Knowledge**

The first in an integrated set of core courses for planning students that addresses priority knowledge and skill sets. A comprehensive lecture, workshop and studio course covering history, theory and practice of planning. An introduction to physical planning, and to decision-making frameworks and techniques is incorporated.

Note: Not open to students with credit in Environmental Design 683.91 and 683.96.

Note: The assignments assume a working knowledge of computer applications, including spreadsheets and databases.

**Environmental Design Planning 636**

**Professional Planning Practice 2: Skills and Knowledge**

The second in an integrated set of core courses for planning students that addresses priority knowledge and skill sets. A comprehensive lecture, workshop and studio course covering history, theory and practice of planning. Impact assessment methods, ecological and economic frameworks and techniques are addressed. The physical planning studio module assumes basic graphic communication skills.

Note: Not open to students with credit in Environmental Design 683.92 and 683.97.

Note: The assignments assume a working knowledge of computer applications, including spreadsheets and databases.

**Environmental Design Planning 639**

**Master’s Degree Project in Planning: The Process**

A seminar course to initiate the process of developing and designing the student’s Master’s Degree Project in Planning. At the completion of the course, the student is expected to have an approvable MDP proposal and a research plan.

Note: Graded on CR/C/F basis only.

Note: Passing grades on any assignment or on the course does not necessarily imply that the Faculty must accept or approve the student’s proposal.

**Environmental Design Planning 641**

**Master’s Degree Project Research in Planning**

A seminar course to facilitate the timely preparation of the Master’s Degree Project in Planning, including its preparation, writing and defense.

Prerequisite: Unconditionally approved Program of Study and successful completion of Environmental Design 683.86 or Environmental Design Planning 639.

Note: Graded on CR/C/F basis only.

Note: Passing grades on any assignment or on the course does not necessarily imply that the MDP Supervisor or Examining Committee must accept or similarly evaluate work submitted to it as part of the MDP.

**Environmental Design Planning 711**

**Advanced Practicum in Professional Planning Practice**

Approved senior student work experience in professional planning practice. Offered in cooperation with practising professionals and the Alberta Association of the Canadian Institute of Planners.

Prerequisite: Conditionally approved Program of Study.

Note: Graded on CR/C/F basis only.

MAY BE REPEATED FOR CREDIT

**Environmental Design Planning 713**

**Advanced Practicum in Professional Planning Practice**

Approved senior student work experience in professional planning practice. Offered in cooperation with practising professionals and the Alberta Association of the Canadian Institute of Planners.

Prerequisite: Conditionally approved Program of Study.

Note: Graded on CR/C/F basis only.

MAY BE REPEATED FOR CREDIT

**Environmental Science**

**Environmental Science 401**

**Environmental Science Field Course I**

A review of the key components of environmental science, presented as a necessary component of this course. Projects which will be presented in class within simulated environmental assessment hearings. The hearings will highlight the complex problems encountered when scientific evidence is used as a basis for decision-making and policy.

Note: Open only to students in the Environmental Science program, or by consent of the Program Director.

**Environmental Science 501**

**Environmental Science Field Course II**

The focus will be on disturbances to aquatic and terrestrial ecosystems. Day-length visits will be conducted to appropriate areas that have either undergone or are undergoing severe disturbance (e.g., forest clearcutting, water pollution, open pit mining, etc.). Discussion of potential reclamation strategies will take into consideration a range of impacts (e.g., sociological, economic, chemical, ecological, etc.) of each strategy.

Note: Open only to students in the Environmental Science program, or by consent of the Program Director.

**Environmental Science 502**

**Special Problems in Environmental Management**

Briefly surveys many aspects of the professional practice of environmental science including: environmental management, audit and accounting, law and regulation, life cycle assessment, ethics and philosophy, toxicology and epidemiology, hazardous waste management and remediation and reclamation technologies. Includes a major collaborative research project.

Note: Open only to students in the Environmental Science program, or by consent of the Program Director.

**Environmental Science 503**

**Environmental Assessment and Hearings**

Environmental assessment is a general policy process meant to minimize the net environmental effects of a development (e.g., golf course, pulp and paper mill, mine). This course formally introduces students to environmental impact assessment (EIA), which is implicit in much of Environmental Science 401, 501 and 502. A review of the key components of federal and Alberta EIA in the first half of the course will serve as a basis for preparing group projects which will be presented in class within simulated environmental assessment hearings. The hearings will highlight the complex problems encountered when scientific evidence is used as a basis for decision-making and policy.

Note: Open only to students in the Environmental Science program, or by consent of the Program Director.

**Environmental Science 504**

**Research Project in Environmental Science**

An independent study or research project under the supervision of one or more faculty members in the Environmental Science program. Originally is emphasized and laboratory and/or field studies are encouraged. Formal written and oral reports will be presented as a necessary component of this course.

Prerequisite: Consent of the Environmental Science Program Director.

MAY BE REPEATED FOR CREDIT

**Environmental Science 505**

**Special Problems in Environmental Science**
A research project under the supervision of one or more faculty members in the Environmental Science program. Formal written and oral reports will be presented as a necessary component of this course. **Prerequisite:** Consent of the Environmental Science Program Director. **MAY BE REPEATED FOR CREDIT**

### Film/FInance

**Junior Course**

Film 200 **F(2-3)**

**Introduction to Film Studies**

An introduction to the techniques and major genres of film, the critical analysis of film, and the history of cinema. Intended to prepare students for further work in Film Studies.

**Prerequisite:** Film 200.

Film 301 **H(2-3)**

**Topic in National Cinema**

Topics will explore various aspects of, or historical moments in, a particular nation's cinematic culture. Topics might include: Quebecois cinema, current British cinema, German cinema Between the Wars, Canadian cinema, the History of Chinese cinema, etc. **MAY BE REPEATED FOR CREDIT**

Film 305 **H(2-3)**

**Topic in Genre**

Topics will focus on the style, narrative form, and historical evolution of selected genres, for example, the Documentary, the Western, the Melodrama, the Musical, etc. **MAY BE REPEATED FOR CREDIT**

Film 307 **H(2-3)**

**Topic in Cinema and Gender Studies**

Topics will explore the representation of gender and sexuality in cinema. Topics might include: Images of Women in the American 1940s, Lesbian Images inCurrent Cinema, The Queer 1950s, Comparative Images of Women in American and French Cinema, etc. **MAY BE REPEATED FOR CREDIT**

Film 321 **H(2-3)**

**History of Popular Cinema**

An assessment of the various ways in which the history of film production can be approached, including the development of filmmaking technologies, evolutions in cinematic style and narrative traditions, particularly as they relate to popular cinema, and changing industrial practices.

**Prerequisite:** Film 200.

Film 323 **H(2-3)**

**Issues in Film History**

An introduction to key concepts in cinematic historiography. Emphasis will be placed upon non-traditional or non-canonical films and their relationship to dominant histories of filmmaking.

**Prerequisite:** Film 200.

Film 380

**The Art of the Cinema**

Intended for the non-specialist student, this course is designed to foster an appreciation of film culture and an understanding of a broad range of cinematic art.

**Note:** Not open to students with credit in Drama 380 or Film 200. May not be used to fulfill the requirements for the Minor in Film Studies.

Film 401 **H(2-3)**

**Topic in Film Theory**

Topics will be organized around particular theorists, schools of theory, historical issues in film culture, or contemporary thought on film. Topics might include: Psychoanalysis and/as Film Theory; Kaja Silverman and Teresa de Lauretis; Modernism and Postmodernism; Feminist Film Theory; Queer Theory and Film; Postcolonial Theory and Film; Semiotics.

**Prerequisite:** One full-course equivalent in Film or Drama 380. **MAY BE REPEATED FOR CREDIT**

Film 403 **H(2-3)**

**Topic in the Director's Cinema**

Topics will examine the distinctive style and concerns of a particular director or directors.

**Prerequisite:** One full-course equivalent in Film or Drama 380. **MAY BE REPEATED FOR CREDIT**

Film 501 **H(0-1T)**

**Research in Selected Topics**

Independent study and directed reading or research for students in the Film Minor program in their third or fourth year. Students will produce a major essay or complete a significant research project.

**Prerequisite:** Students who wish to propose a Film 501 topic must secure a supervisor among the Film instructors and have the topic approved by the Coordinator of Film Studies. The deadlines are June 30 for Fall Session projects and November 30 for Winter Session Projects. **MAY BE REPEATED FOR CREDIT**

Film 505

**Advanced Topics in Film Studies**

A seminar for senior students that focuses on a formal, theoretical or historical issue in Film Studies or the culture of the Cinema. Reflects the current research of the instructor.

**Prerequisites:** Three full-course equivalents in Film, including Film 401. **MAY BE REPEATED FOR CREDIT**

### Finance

**Financial Management**

Focuses on the investment and financing decision of the firm. Heavy emphasis is placed on valuation and management of working capital and long term assets. The Canadian financial system and sources of financing are surveyed with a view to integrating the financing and investment decisions of a firm.

**Prerequisites:** Admission to the Haskayne School of Business, second year standing, Mathematics 249 or 251, Economics 201 and 203, Statistics 213 and 217, Accounting 317, and Management Studies 291.

**Note:** Credit for both Finance 317 and either 351 or 353 will not be allowed prior to being permitted to repeat the course. Students are required to have consent of the Haskayne School of Business Office before registering in 600-level courses offered by the Haskayne School of Business.

**Canadian Business Finance**

An introduction to business financial management practices in Canada including investment decision, capital markets, and sources, uses and costs of capital over short, intermediate and long run situations.

**Prerequisite:** Third year standing.

**Note:** This course is not available for credit toward the Bachelor of Commerce degree. Until August 15, preference in enrollment is given to students who have declared a Management and Society minor.

**Personal Financial Management**

An introduction to personal financial management practices in Canada. Topics discussed may include goal setting, personal financial statements, the mathematics of personal finance, taxation, general and life insurance, retirement planning, investments, and estate planning. Completion of the course should enable students to properly prepare and plan their own financial future.

**Prerequisite:** Second year standing.

**Note:** This course is not available for credit toward the Bachelor of Commerce degree. Until August 15, preference in enrollment is given to students who have declared a Management and Society minor.
### Finance 443 H(3-T)
**Security Analysis and Investments**
Techniques and theories used in selecting securities for various investment objectives. Evaluation of risks and opportunities with respect to purchase, sale, or retention of investments.
**Prerequisites:** Third year standing and Finance 317.

### Finance 445 H(3-T)
(formerly Finance 595.01)
**Futures and Options**
A study of financial contracts for which the payoffs are contingent upon or derived from the value specified underlying economic variables. Typical underlying variables include the spot price of a commodity and the price of a stock. These contracts are used extensively for hedging and speculative purposes. They also provide useful information about forecasts of the underlying economic variable in a process called “price discovery.”
**Prerequisites:** Third year standing and Finance 317.
**Note:** Credit for both Finance 445 and Actuarial Science 539.04 will not be allowed.

### Finance 447 H(3-T)
**Capital Budgeting**
Capital investment policies of the firm. Real options analysis is used for valuation and decision making. Emphasis on operational matters such as required rate of return estimation, risk analysis, tax factors, and optimization model building. Abandonment decisions and buying versus leasing.
**Prerequisites:** Third year standing and Finance 317.

### Finance 451 H(3-T)
**Advanced Financial Management**
Focuses on understanding the advanced theories and practices of financial management that are required for finance majors. Topics include market imperfections arising from asymmetric information and taxation and options. It applies these concepts to study incentives and conflicts in various financial agent pairings. These concepts are then used in a theoretical and empirical study of important financial decisions, such as capital structure, dividend policy, retained ownership, security underwriting, management of distressed firms, managerial compensation, corporate governance and mergers.
**Prerequisites:** Third year standing and Finance 317.

### Finance 459 H(3-0)
**Investment Decisions in the Non-Corporate Sector**
A study of investment decision problems not normally relating to but affecting the private corporate sector. Individual investment decision models for the public and non-corporate sectors are explored in depth. Supply of and demand for funds in these two sectors are also discussed.
**Prerequisites:** Third year standing and Finance 317.

### Finance 461 H(3-T)
**International Finance**
A study of the forces affecting the financial environment of the corporate sector which appear to stem from requirements in the international sector. Balance-of-payments problems, exchange rates, international reserve creations and transfers are some of the major elements studied.
**Prerequisites:** Third year standing and Finance 317.

### Finance 463 H(3-0)
**Portfolio Theory and Management**
Analysis of the major aspects of the grouping of financial assets. Portfolio analysis and its application to portfolio management, capital market theory and the measurement of financial performance in the presence of risk.
**Prerequisites:** Third year standing and Finance 317.

### Finance 470 F(3-0)
**The Calgary Portfolio Management Trust**
A comprehensive hands-on review of the modern theories and applications of portfolio management. Students will be responsible for completing the fiduciary duties of an actual fund manager, reporting to a board of directors. Topics may include: selecting securities, hedging with covered options, benchmarking a portfolio, financial reporting, evaluation of risk, risk/return tradeoffs and management.
**Prerequisites:** Third year standing and Finance 317.
**Note:** Credit for both Finance 470 and either 443 or 463 will not be allowed.
**Note:** Enrollment is strictly limited by the Hasikaye School of Business and the student must be a Finance concentrator in the BComm program.

### Finance 475 H(3-T)
**Management of Financial Institutions**
Management of funds and their allocation among cash, primary reserves, loans and investments to provide liquidity and earnings. Services to depositors. Consideration of factors involved in the lending decision, pricing of services, branch location, etc. Strategies for maintaining profitability and liquidity in the face of changing monetary policy.
**Prerequisites:** Third year standing and Finance 317.

### Finance 479 H(3-0)
(formerly Finance 595.03)
**Corporate Risk Management**
Introduction to the management of operational and hazard risks based on contemporary financial theories, including risk identification, loss estimation, risk control, risk financing with insurance and other techniques, and enterprise risk management.
**Prerequisites:** Third year standing and Finance 317.

### Finance 549 H(3-0)
**Management of Financial Institutions**
Management of funds and their allocation among cash, primary reserves, loans and investments to provide liquidity and earnings. Services to depositors. Consideration of factors involved in the lending decision, pricing of services, branch location, etc. Strategies for maintaining profitability and liquidity in the face of changing monetary policy.
**Prerequisites:** Third year standing and Finance 317.

### Finance 595 H(3-1T)
**Selected Topics in Financial Management**
Investigation of selected topics related to financial management, emphasizing the application of financial management principles to actual problems in the corporate sector.
**Prerequisites:** Third year standing and Finance 317.
**MAY BE REPEATED FOR CREDIT**

### Graduate Courses

#### Finance 601 H(3-1) (formerly Finance 651)
**Managerial Finance**
Financial analysis and decision-making within an organization. Cash flows, asset management, and financing techniques. Capital budgeting under certainty and uncertainty; cost of capital concepts and studies.
**Prerequisite:** Management Studies 609 or Accounting 601.

### Finance 745 H(3-0)
**Futures and Options**
After presenting basic definitions, institutional details, and strategies, a general theory of derivative pricing based on the principle of No Arbitrage will be developed. This theory will then be applied to the basic derivative contracts (futures, forwards, put options and call options) as well as exotic options. Using the binomial model, as well as the continuous time model of Black Scholes, hedging and replication will also be examined.
**Prerequisite:** Finance 601 or 651.

### Finance 751 H(3-0)
**Advanced Topics in Financial Administration**
Classical and contemporary topics in the theory of finance, including risk and return, the asset selection decision, the financing decision, efficient market analysis, capital structure and cost of capital, the nature of capital markets, and international finance.
**Prerequisite:** Finance 601 or 651.

### Finance 753 H(3-1)
**Problems in Financial Management**
The application of financial management principles to actual problems mainly in the corporate sector, including such areas as working capital, management, short, intermediate and long-term financing problems, dividend policy and reorganization.
**Prerequisite:** Finance 601 or 651.

### Finance 755 H(3-1)
**Capital Budgeting**
Capital investment policies, real options, required rate of return calculation, mathematical programming models, tax factors, risk analysis, buy versus lease, abandonment considerations.
**Prerequisite:** Finance 601 or 651.

### Finance 757 H(3-0)
**Management of Financial Institutions**
Managing a financial institution as contrasted with corporate financial management and investment management.
**Prerequisite:** Finance 601 or 651.

### Finance 759 H(3-1)
**Investment and Portfolio Management**
Theory and analysis of investment and portfolio management decisions. Evaluation of performance of individual and professional investors and portfolio managers.
**Prerequisite:** Finance 601 or 651.
Courses of Instruction

Finance 763 H(3-0)
Corporate Risk Management
Comprehensive introduction to theory and practice of the management of operational and hazard risks based on contemporary financial theories, including risk identification, loss estimation, risk control, risk financing with insurance and other techniques, captive insurance, crisis management, reinvestment decisions, and enterprise risk management.
Prerequisite: Finance 601 or 651.

Finance 765 H(3-0)
Mergers and Acquisitions
A study of economic theory and practical issues around takeover strategies, and takeover defence strategies. Valuation issues, corporate restructuring, corporate governance, and methods of ensuring congruence between management and shareholder goals are also discussed.
Prerequisite: Finance 751 or consent of the business school.

Finance 785 H(3-0)
New Venture Finance
Problems of valuing and financing new ventures. Considerable emphasis is placed on deal structuring, both within a case and project context. Valuing a local new venture as well as developing a detailed financial plan, including a recommended deal structure.
Prerequisite: Finance 601 or 651 or consent of the business school.

Finance 799 H(3S-1)
Seminar in Financial Management
Intensive study and discussion of current literature and research with respect to selected, advanced topics in Finance.
MAY BE REPEATED FOR CREDIT

Finance 795 H(3-0)
International Finance
A study of the international financial environment and the issues firms face when operating in this environment. Currency regimes, currency crises, balance of payments, exchange rate and interest rate parity conditions, supra-national agencies, political risks, management of foreign exchange exposure are some of the major topics studied
Prerequisite: Finance 601 or 651.

Advanced Seminar in Finance H(3S-0)
Prerequisite: Consent of the business school.
MAY BE REPEATED FOR CREDIT

PhD Course

Finance 799 H(3S-0)
Doctoral Seminars in Finance
799.01. Theory of Finance
799.02. Empirical Methods in Finance
799.03. Topics in Finance
799.04. Financial Engineering


department note de “C-” dans les cours préalables.
Remarque: Pour s’inscrire à un cours de langue en français, l’étudiant doit avoir réussi au cours French 335 ou 337, l’étudiant doit avoir réussi au cours French 215 et 217, ou 220, ou 221 ou avoir obtenu l’autorisation du Département.

Director of the Department: A.J. Wall
Il est recommandé aux étudiants de consulter le Département à chaque étape de la planification de leur programme.

Les étudiants admis au baccalauréat en français se verront désigné un professeur du Département qui sera leur conseiller attitré et les aidera à planifier leur programme ainsi qu’à choisir leurs cours.

Les étudiants de langue maternelle française, italienne et espagnole et ceux dont le niveau d’études dans ces langues est supérieur à celui du diplôme de fin d’études secondaires (Y compris les étudiants provenant d’un programme bilingue ou d’immersion) doivent obligatoirement consulter le Département pour se faire placer dans le cours approprié. Les locuteurs natifs ne peuvent se faire créditer des cours de langue ni par équivalence (”,advanced credit”) ni par évaluation spéciale (”,special assessment”).

Pour s’inscrire à un cours de niveau intermédiaire ou avancé (niveaux 300 et suivants, sauf French 335 ou 337), l’étudiant doit avoir réussi au cours French 215 et 217, ou 220, ou 221 ou avoir obtenu l’autorisation du Département.

Certains cours intermédiaires et avancés ne sont pas offerts tous les ans. Pour les cours proposés pour l’année en cours, prière de se reporter à l’horaire général de l’Université.

Remarque: Pour s’inscrire à un cours de langue en français, l’étudiant doit avoir obtenu au moins la note de “C-” dans les cours préalables.

Instruction offered by members of the Department of French, Italian and Spanish in the Faculty of Humanities.

Department Head – A. J. Wall
Students are encouraged at all times to seek departmental guidance in planning any aspect of their programs. Upon admission to the Major in French each student will be assigned a departmental advisor who will assist with program planning and course selection.

French, Italian and Spanish-speaking students or students with more than matriculation in these languages (including graduates of a bilingual or immersion program) MUST consult the Department to be placed in a course corresponding to their ability. Native speakers are not eligible to take language courses by special assessment or to receive advanced credit for them.

To register in Senior Courses (300 level and above, except French 335 or 337), students must have completed French 215 and 217, or 220, or 221 or have obtained the consent of the Department.

Not all Senior Courses are offered every year. Current course offerings are listed in the Master Timetable.

**Note:** All university level prerequisites for French language courses must be met with a grade of "C-" or better.

### Junior Courses

**French 209**  
**Beginners’ French I**  
Basic elements of the French language, including training in comprehension, speaking, reading and writing of French.  
**Prerequisite:** French 20, French 209 or consent of the Department.  
**Note:** Not open to students with credit in French 20, French 30, French 31 (or equivalent).  
**Note:** May not be counted towards a Minor, a Major or Honours in French.

**French 211**  
**Beginners’ French II**  
A continuation of French 209.  
**Prerequisite:** French 20, French 209 or consent of the Department.  
**Note:** Not open to students with credit in French 30 or French 31 (or equivalent).  
**Note:** May not be counted towards a Minor, a Major or Honours in French.

**French 213**  
**Intermediate French**  
Further development of abilities in spoken and written French. Review of French grammar along with extensive oral and written practice.  
**Prerequisite:** French 211, French 30 or consent of the Department.

**French 215**  
**Francophonie: Language and Culture**  
A study of French language and culture in French-speaking countries, including France, Canada, and countries in Africa and the Caribbean. Introduction to sources and research instruments for such study, leading to written and oral work.  
**Prerequisite:** French 30N or 30S or 31 (or equivalents), or French Language Arts 30, or French 213 or consent of the Department.  
**Note:** Not open to students with credit in any University French course other than French 209, 211, 213, 217, 225, 235, 335, 337.

**French 217**  
**Introduction to Texts in French**  
A study of French language, introducing the basic techniques of textual analysis.  
**Prerequisite:** French 30N or 30S or 31 (or equivalents), or French Language Arts 30, or French 213, or consent of the Department.  
**Note:** Not open to students with credit in any University French course other than French 209, 211, 213, 215, 235, 237, 335, 337.

**French 235**  
**Reading French (Beginners I)**  
**Note:** Not open to students with credit in French 30 or in any University French course.  
**Note:** May not be counted towards a Minor, a Major or Honours in French.

**French 237**  
**Reading French (Beginners II)**  
**Prerequisite:** French 235 or consent of the Department.  
**Note:** Not open to students with credit in French 30 or any University French course other than French 209, 235, 237, 305.

### Senior Courses

**Senior Courses**

**French 315**  
**Vocabulaire et analyse grammaticale 1**  
Analyse grammaticale et enrichissement du vocabulaire à l’aide de l’étude de textes. Discussions ayant pour thème la culture au sens large; pratique de la lecture et de l’écriture.  
**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.  
**Remarque:** Non accessible aux étudiants avec accréditation en French 319, 320 ou 321.

**French 317**  
**Vocabulaire et analyse grammaticale 2**  
Suite du cours French 315.  
**Préalable:** French 315, 319 ou autorisation du Département.  
**Remarque:** Non accessible aux étudiants avec accréditation en French 320 ou 321.

**French 323**  
**Introduction au Canada francophone**  
Étude de productions culturelles en langue française qui sont représentatives de plusieurs régions du Canada.  
**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.  
**Remarque:** Non accessible aux étudiants avec accréditation en French 369.

**French 333**  
**La francophonie vue à travers les médias**  
Étude de sujets d’actualité de la francophonie, tels que présentés dans des médias divers (journaux, magazines, radio, télévision, etc.).  
**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.

**French 335**  
**Reading French (Advanced I)**  
Development of advanced reading skills in French. Building on strategies, grammar and vocabulary acquired in French 237 or other French courses, more difficult texts will be studied and reading comprehension improved. Readings drawn mainly from journalistic sources, and specialized publications in the Humanities and Social Sciences. Computer-based independent study.  
**Prerequisite:** French 30, 213, 237 or consent of the Department.  
**Note:** May not be counted towards a Minor, a Major or Honours in French. Not open to students with credit in French 215 or higher (other than French 235 and 237).

**French 337**  
**Reading French (Advanced II)**  
**Prerequisite:** French 335 or consent of the Department.  
**Note:** May not be counted towards a Minor, a Major or Honours in French. Not open to students with credit in French 215 or higher (other than French 235 and 237).

**French 339**  
**Concepts littéraires**  
**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.  

**French 343**  
**Cinéma de langue française**  
Introduction à l’analyse de films en français.  
**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.

**French 349**  
**Phonologie française**  
Introduction à la structure des sons de la langue.

**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.

**Remarque:** Non accessible aux étudiants avec accréditation en French 345.

**French 359**  
H(3-0)

**Histoire des idées**

Concepts fondamentaux de l’histoire des idées et panorama de la pensée française sous les diverses formes qu’elle revêt dans les domaines littéraire, artistique, philosophique, politique et religieux.

**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.

**Remarque:** Non accessible aux étudiants avec accréditation en French 367.

**French 399**  
H(3-0)

**Langue française, littérature et culture**

Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** French 215 et 217, ou 220, ou 221, ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 415**  
H(3-1)

**Étude approfondie de la langue française**

Études appliquées de phonologie, de syntaxe, de sémantique et de lexicologie. Perfectionnement de techniques choisies d’écriture. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalable:** French 317, 320, 321 ou autorisation du Département.

**Remarque:** Non accessible aux étudiants avec accréditation en French 419 ou 421.

**MAY BE REPEATED FOR CREDIT**

**French 439**  
H(3-0)

**Le Canada francophone**

Études avancées des cultures francophones du Canada: langue, littérature et cinéma. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalable:** Quatre demi-cours de français, parmi les suivants: French 315, 317 (ou 319, 320, 321), 339 (ou 351, 353, 355, 365, 366), 349 (ou 345), 359 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 449**  
H(3-0)

**Littératures francophones contemporaines**

Études culturelles et littéraires à partir de textes modernes écrits en français et originaires des grandes régions de la francophonie (par exemple, le Maghreb, les Antilles ou l’Indochine). Les sujets traités peuvent inclure la tradition et la modernité, la quête de l’identité, le post-colonialisme, la différence et l’assimilation ainsi que le statut de la femme. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalable:** Quatre demi-cours de français, parmi les suivants: French 315, 317 (ou 319, 320, 321), 339 (ou 351, 353, 355, 365, 366), 349 (ou 345), 359 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 459**  
H(3-0)

**Littérature du 19e siècle**

Études spécialisées en littérature française du 19e siècle. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalable:** Quatre demi-cours de français, parmi les suivants: French 315, 317 (ou 319, 320, 321), 339 (ou 351, 353, 355, 365, 366), 349 (ou 345), 359 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 479**  
H(3-0)

**Langue et société**

Étude de la langue utilisée dans le monde francophone à l’aide des concepts fondamentaux de la sociolinguistique. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalable:** Quatre demi-cours de français, parmi les suivants: 315, 317 (ou 319, 320, 321), 339 (ou 351, 353, 355, 365, 366), 349 (ou 345), 359 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 499**  
H(3-0)

**Projet spécial en études françaises (langue, littérature ou culture)**

Les thèmes de ce cours seront abordés à l’aide de méthodes novatrices.

**Préalables:** Quatre demi-cours de français, parmi les suivants: French 315, 317 (ou 319, 320, 321), 339 (ou 351, 353, 355, 363, 365), 349 (ou 345), 359 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 503**  
Q(0-3T)

**Projet de fin d’études du Premier cycle de français**

Recherche pluridisciplinaire de fin d’études, rédigée en français, visant à relier les connaissances et aptitudes acquises dans le cadre de la concentration en français à celles qui ont été acquises dans une spécialisation autre que le français (par exemple, une autre concentration, une mineure ou une minispecialisation). Les projets seront exposés oralement en classe et ensuite discutés.

**Préalable:** Trois demi-cours de français du niveau 400 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 505**  
Q(0-3T)

**Études indépendantes. Stage de travail en français**

Stage en milieu francophone, sous la direction de professeurs du Département. Rapport de fin de stage rédigé en français. Les étudiants obtiendront soit la note de CR (Completed Requirements) soit celle de F (Failed).

**Préalable:** Autorisation du Département, obtenue après remise par l’étudiant d’une proposition écrite

**French 507**  
Q(0-3T)

**Études indépendantes. Stage de recherche en français**

Stage de recherche, effectué sous la direction de professeurs du Département. Rapport rédigé en français. Les étudiants obtiendront soit la note de CR (Completed Requirements) soit celle de F (Failed).

**Préalable:** Autorisation du Département, obtenue après remise par l’étudiant d’une proposition écrite

**French 509**  
H(3-0)

**Traduction**

Étude avancée de la théorie et de la pratique de la traduction. Les travaux de traduction se feront du français à l’anglais et de l’anglais au français, à partir de textes de nature diverse. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** Romance Studies 409 et trois demi-cours de français de niveau 400 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 511**  
H(3-0)

**Théories critiques**

Présentation de certaines théories contemporaines qui ont cours en études littéraires et culturelles. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** Trois demi-cours de français de niveau 400, ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 515**  
H(3-1)

**Étude spécialisée de la langue française**

Étude avancée de la structure et de l’usage de la langue française. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** Trois demi-cours de français de niveau 400, ou autorisation du Département.

**Remarque:** Non accessible aux étudiants avec accréditation en French 519 ou 521.

**MAY BE REPEATED FOR CREDIT**

**French 539**  
H(3-0)

**Étude spécialisée du Canada français**

Séminaire sur des sujets avancés dans le domaine de la langue, de la littérature ou de la culture au sens large. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** Trois demi-cours de français de niveau 400 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 549**  
H(3-0)

**Étude spécialisée de la francophonie**

Séminaire sur des sujets avancés ayant trait à la langue, aux littératures ou aux diverses cultures de la francophonie. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** Trois demi-cours de français de niveau 400 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**

**French 557**  
H(3-0)

**Littérature et culture françaises du 17e siècle**

Étude de textes choisis du “Grand siècle”. Le format et le contenu peuvent varier d’une année à l’autre.

**Préalables:** Trois demi-cours de français de niveau 400 ou autorisation du Département.

**MAY BE REPEATED FOR CREDIT**
Courses of Instruction

French 559 H(3-0)
*Littérature et culture françaises du 18e siècle*
Étude de textes choisis du Siècle des Lumières en France. Le format et le contenu peuvent varier d’une année à l’autre.
*Préalable:* Trois demi-cours de français de niveau 400 ou autorisation du Département.
*MAY BE REPEATED FOR CREDIT*

French 595 H(3-0)
*Perfectionnement des techniques de recherche*
*Préalables:* Trois demi-cours de français de niveau 400, ou autorisation du Département.
*Remarque:* Ce cours est réservé aux étudiants inscrits au programme du baccalauréat spécialisé ("Honours") de français.

French 597 H(0-3T)
*Mémoire de baccalauréat spécialisé*
*Préalables:* French 595 plus trois demi-cours de français de niveau 400, ou autorisation du Département.

French 599 H(3-0)
*Études spécialisées de la langue, de la littérature ou de la culture*
Séminaire sur des questions d’actualité ayant trait à la langue, à la littérature ou à la culture au sens large. Exemples de sujets traités: la littérature française du Moyen-Age, l’autobiographie, l’écriture des femmes de langue française, le créole dans les écrits de langue française, etc.
*Préalables:* Trois demi-cours de français de niveau 400, ou autorisation du Département.
*MAY BE REPEATED FOR CREDIT*

**Graduate Courses**

(Dans certaines circonstances, les cours de niveau 500 pourront être crédités dans le cadre du programme des études supérieures.)
(Only where appropriate to a student’s programme may graduate credit be received for courses numbered 500-599.)

French 605 H(3-0)
*Problématiques littéraires et culturelles*
*MAY BE REPEATED FOR CREDIT*

French 611 H(3-0)
*Langue française*
*MAY BE REPEATED FOR CREDIT*

French 615 H(3-0)
*Images, textes, performance*
*MAY BE REPEATED FOR CREDIT*

French 625 H(3-0)
*Études cinématographiques*
*MAY BE REPEATED FOR CREDIT*

French 635 H(3-0)
*Le texte narratif*
*MAY BE REPEATED FOR CREDIT*

French 641 H(3-0)
*Littérature et culture avant 1800*
*MAY BE REPEATED FOR CREDIT*

French 645 H(3-0)
*La Modernité*
*MAY BE REPEATED FOR CREDIT*

French 655 H(3-0)
*Francophonies*
*MAY BE REPEATED FOR CREDIT*

French 665 H(3-0)
*Études postcoloniales*
*MAY BE REPEATED FOR CREDIT*

French 675 H(3-0)
*Féminismes et Gender*
*MAY BE REPEATED FOR CREDIT*

French 685 H(3-0)
*Voix québécoises et canadiennes*
*MAY BE REPEATED FOR CREDIT*

French 691 H(3-0)
*Autour d’un auteur*
*MAY BE REPEATED FOR CREDIT*

French 695 H(3-0)
*Profession et recherche*
*MAY BE REPEATED FOR CREDIT*

French 699 H(3-0)
*Thèmes spéciaux*
*MAY BE REPEATED FOR CREDIT*