Course Section | Course Subject | Course Number | Special Topic | Section Number | Section Title | Term | Description
--- | --- | --- | --- | --- | --- | --- | ---
ANTH_O 100-101 | ANTH_O | 100 | | 101 | Introduction to Cultural Anthropology | W2 | An overview of social and cultural anthropology, its origins, its distinctive methods and concepts, and its place in the contemporary world. A critical examination of human diversity and how social and cultural differences are produced and shaped by local and global patterns. [3-0-0] Prerequisite: Second-year standing.

BIOC_O 379-101 | BIOC_O | 309 | | 101 | Pharmacology II | W2 | Continuation of Pharmacology I. Expands on topics including pharmacokinetics and pharmacodynamics of drug action, interaction of drugs with the autonomic nervous system (ANS), the inflammatory response, and the treatment of chronic diseases. [3-0-0] Prerequisite: BIOC 308.


BIOC_O 402-001 | BIOC_O | 402 | | 001 | Proteins: Structure and Function | W2 | Structural components of proteins; classification by primary, secondary, and tertiary structures; protein chemistry and purification; peptide and protein synthesis by chemical means; and three-dimensional structure determination using X-ray diffraction and NMR. [3-0-0] Prerequisite: One of BIOC 304, BIOC 311.

ANTH_O 100-102 | ANTH_O | 100 | | 102 | Introduction to Cultural Anthropology | W2 | An overview of social and cultural anthropology, its origins, its distinctive methods and concepts, and its place in the contemporary world. A critical examination of human diversity and how social and cultural differences are produced and shaped by local and global patterns. [3-0-0] Prerequisite: Second-year standing.

ANTH_O 100-103 | ANTH_O | 100 | | 108 | Introduction to Cultural Anthropology | W2 | An overview of social and cultural anthropology, its origins, its distinctive methods and concepts, and its place in the contemporary world. A critical examination of human diversity and how social and cultural differences are produced and shaped by local and global patterns. [3-0-0] Prerequisite: Second-year standing.

ANTH_O 205-101 | ANTH_O | 205 | | 101 | Gender, Sexuality, and the Body | W2 | An anthropological exploration of how understandings of gender, sex, and the body are culturally and historically shaped, with a focus on theory as well as case studies. How globalization and transnationalism are changing norms of gender and sexuality is also explored. [3-0-0] Prerequisite: Second-year standing.

ANTH_O 277-101 | ANTH_O | 277 | | 101 | Anthropology of Reading and Writing | W2 | Critical inquiry into the development and role of reading and writing in cross-cultural context. Emphasis on the origins of writing from archaeological evidence, the impact of writing systems on societies past and present, the social functions of writing, and innovations in new media. [3-0-0] Prerequisite: Second-year standing.

ANTH_O 319-101 | ANTH_O | 319 | | 101 | Settling Down: An Archaeology of Early State Soc W2 | | Survey of archaeological evidence and theories for the origins and spread of settled village life, food production systems, and complex social and political organization. Begins with the Early Neolithic period and continues through to the appearance of the old world civilizations. [3-0-0] Prerequisite: ANTH 103, and third-year standing.


<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Lectures</th>
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<tr>
<td>ANTH_O 270-210</td>
<td>Anthropology, History, and Tradition</td>
<td>2</td>
<td>T2E</td>
<td>12:00 p.m. - 1:30 p.m.</td>
<td>Online Learning</td>
<td>APSC_O 101-T2E</td>
</tr>
<tr>
<td>ANTH_O 370</td>
<td>Anthropology, Syntax, and Semantics</td>
<td>1</td>
<td>Lecture</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>ANTH_O 401</td>
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<tr>
<td>APSC_O 221-202</td>
<td>Technical Communication</td>
<td>2</td>
<td>Lecture</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 178-T2B</td>
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<tr>
<td>APSC_O 301-204</td>
<td>Technical Communication</td>
<td>3</td>
<td>Lecture</td>
<td>1:30 p.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 181-T2C</td>
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<tr>
<td>APSC_O 418</td>
<td>Travel, Migration and the Politics of Mobility</td>
<td>1</td>
<td>Lecture</td>
<td>2:30 p.m. - 3:30 p.m.</td>
<td>In Person Learning</td>
<td>ANTH_O 418</td>
</tr>
<tr>
<td>APSC_O 475-201</td>
<td>Anthropology, History, and Tradition</td>
<td>2</td>
<td>Lecture</td>
<td>10:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>APSC_O 101-T2B</td>
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<tr>
<td>APSC_O 178-T2E</td>
<td>Dynamics</td>
<td>2</td>
<td>Discussion</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<td>APSC_O 178-T2E</td>
</tr>
<tr>
<td>APSC_O 181-218</td>
<td>Electric and Magnetic Fields</td>
<td>2</td>
<td>Experiential</td>
<td>5:30 p.m. - 7:00 p.m.</td>
<td>Online Learning</td>
<td>APSC_O 178-T2E</td>
</tr>
<tr>
<td>APSC_O 181-M_101</td>
<td>Topics in Anthropology</td>
<td>3</td>
<td>Seminar</td>
<td>9:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>APSC_O 181-M_101</td>
</tr>
<tr>
<td>APSC_O 181-T2F</td>
<td>Dynamics</td>
<td>2</td>
<td>Discussion</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 181-T2F</td>
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<tr>
<td>APSC_O 181-T2F</td>
<td>Dynamics</td>
<td>2</td>
<td>Discussion</td>
<td>1:30 p.m. - 3:30 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 181-T2F</td>
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<tr>
<td>APSC_O 181-278</td>
<td>Electric and Magnetic Fields</td>
<td>2</td>
<td>Discussion</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 181-278</td>
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<tr>
<td>APSC_O 201-202</td>
<td>Written and Oral Communication in Engineering</td>
<td>2</td>
<td>Lecture</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 201-202</td>
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<tr>
<td>APSC_O 248</td>
<td>Written and Oral Communication in Engineering</td>
<td>2</td>
<td>Lecture</td>
<td>1:30 p.m. - 3:30 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 248</td>
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<tr>
<td>APSC_O 278</td>
<td>Electric and Magnetic Fields</td>
<td>2</td>
<td>Discussion</td>
<td>3:00 p.m. - 5:00 p.m.</td>
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<td>APSC_O 278</td>
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<td>Electric and Magnetic Fields</td>
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<td>APSC_O 278</td>
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<tr>
<td>APSC_O 301</td>
<td>Written and Oral Communication in Engineering</td>
<td>3</td>
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<td>10:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>APSC_O 301</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>1:30 p.m. - 3:30 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>2:00 p.m. - 3:30 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>3:30 p.m. - 5:30 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>5:30 p.m. - 7:30 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>6:00 p.m. - 7:30 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>7:30 p.m. - 9:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
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<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>8:30 p.m. - 10:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
</tr>
<tr>
<td>APSC_O 370</td>
<td>Electrical, Magnetic, and Waves</td>
<td>2</td>
<td>Lecture</td>
<td>9:00 p.m. - 11:00 p.m.</td>
<td>In Person Learning</td>
<td>APSC_O 370</td>
</tr>
</tbody>
</table>
Science and the Co-operative Education Program. Prerequisite: APSC 310.
Supervised, integrated learning experience in a public or private organization for a minimum of three months.
Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 110. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Chemical equilibrium, reactions in gas phase and in aqueous solutions, acid-base and redox reactions, kinetics of chemical reactions, thermodynamics, electrochemistry, and organic chemistry. [2-2*-2*]

Chemical equilibrium, reactions in gas phase and in aqueous solutions, acid-base and redox reactions, kinetics of chemical reactions, thermodynamics, electrochemistry, and organic chemistry. [2-2*-2*]

Chemical equilibrium, reactions in gas phase and in aqueous solutions, acid-base and redox reactions, kinetics of chemical reactions, thermodynamics, electrochemistry, and organic chemistry. [2-2*-2*]

Chemical equilibrium, reactions in gas phase and in aqueous solutions, acid-base and redox reactions, kinetics of chemical reactions, thermodynamics, electrochemistry, and organic chemistry. [2-2*-2*]

Chemical equilibrium, reactions in gas phase and in aqueous solutions, acid-base and redox reactions, kinetics of chemical reactions, thermodynamics, electrochemistry, and organic chemistry. [2-2*-2*]

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.

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Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday's law, inductance, waves, light, and optics. Prerequisite: APSC 172. Corequisite: APSC 173.
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<tr>
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<tr>
<td>APSC 411-72E</td>
<td>411</td>
<td>Co-operative Education Work Term V</td>
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<tr>
<td>APSC 412-72F</td>
<td>412</td>
<td>Independent Study</td>
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<tr>
<td>APSC 412-72G</td>
<td>412</td>
<td>Co-operative Education Work Term VI</td>
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<tr>
<td>APSC 412-72M</td>
<td>412</td>
<td>Experiential</td>
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<td>BIOC 410-72C</td>
<td>448</td>
<td>Directed Studies in Biochemistry</td>
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</table>

The credit value for this course will be determined in consultation with the student prior to the registration.

In Person Learning

Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410.

In Person Learning

Supervised, technical paid work experience with a public or private organization for a minimum of 12 weeks full-time. Internship assignment required. Restricted to graduate degree students meeting requirements of the Faculty of Applied Science and the Co-operative Education program. Prerequisite: APSC 410.

Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410.

Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 411.

Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 411.

Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410.

Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410.

Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410.

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Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410.
BIOC 448-C_101 BIOC 0 448 C C_101 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_102 BIOC 0 448 C C_102 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_103 BIOC 0 448 C C_103 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_104 BIOC 0 448 C C_104 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_105 BIOC 0 448 C C_105 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_106 BIOC 0 448 C C_106 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_107 BIOC 0 448 C C_107 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_108 BIOC 0 448 C C_108 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

BIOC 448-C_109 BIOC 0 448 C C_109 Directed Studies in Biochemistry W2

The credit value for this course will be determined in consultation with the student prior to the registration

Independent Study In Person Learning Arranged Arranged

APSC 317-101 APSC 0 317 101 Engineering Drawing and CAD/CAM W2

Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

APSC 317-201 APSC 0 317 201 Engineering Analysis II W2

Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

APSC 317-201 APSC 0 317 201 Engineering Computation and Instrumentation W2

Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

APSC 223-201 APSC 0 223 201 Fluid Mechanics I W2

Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

APSC 225-103 APSC 0 225 103 Electric Circuits and Power W2

Lecture In Person Learning Tue Thu 6:30 p.m. - 8:00 p.m.

Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimensional analysis; pipe flow; valves and fittings; flow measurements. [3-2*-1]

APSC 172.

Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-aided design and modeling, introduction to rapid prototyping, team-based design project. [10-0-2]

Engineering Drawing and CAD/CAM

Integrates and transcendental functions, techniques of integration, applications of integration, polar coordinates, infinite sequences and series, vectors and the geometry of space, and partial derivatives. [3-0-1]

Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 72%, and permission of the supervisor's department.

Directed Studies in Biochemistry

Liberal Arts, Engineering, or Science students with a minimum overall grade average of 72%, and permission of the supervisor's department.

Directed Studies in Biochemistry

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Dynamics
12:00 p.m. - 2:00 p.m.
In Person Learning
Lecture

L1F 171
W2
Wed
Discussion
Lecture

T1I 171
L1A 177
W2
Lecture
Engineering Computation and Instrumentation

T1K 181
Laboratory
Wed
In Person Learning

T1H 177
Laboratory
Thu
In Person Learning

T1G 177-L1H
Laboratory
Thu
In Person Learning

T1F 177-L1G
Laboratory
Thu
In Person Learning

T1E 177-L1E
Laboratory
Thu
In Person Learning

T1D 177-L1D
Laboratory
Thu
In Person Learning

T1C 177-L1C
Laboratory
Thu
In Person Learning

T1B 177-L1B
Laboratory
Thu
In Person Learning

TIA 177
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Lecture
In Person Learning
Mon Wed
5:00 p.m. - 6:30 p.m.

181-A 171
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Lecture
In Person Learning
Wed Fri
12:30 p.m. - 2:00 p.m.

201-A 181
Kinematics of particles, curvilinear motion, normal/tangential, polar, cylindrical coordinates, force
and acceleration, equation of motions, work and energy, conservation of energy. Introduction to rigid body
dynamics. [3-0-2] Prerequisite: All of APSC 172, APSC 180. Corequisite: APSC 173. Lecture
In Person Learning
Mon Wed
11:00 a.m. - 12:30 p.m.

202-A 181
Kinematics of particles, curvilinear motion, normal/tangential, polar, cylindrical coordinates, force
and acceleration, equation of motions, work and energy, conservation of energy. Introduction to rigid body
dynamics. [3-0-2] Prerequisite: All of APSC 172, APSC 180. Corequisite: APSC 173. Lecture
In Person Learning
Mon Wed
3:30 p.m. - 5:00 p.m.

101-A 255
Electric Circuits and Power
AC power systems. [3-2*-0] Prerequisite: APSC 178. Lecture
In Person Learning
Mon Wed
2:00 p.m. - 3:30 p.m.

171-A 250
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Lecture
In Person Learning
Fri
6:00 p.m. - 8:00 p.m.

171-A 260
Mechanics of Materials I
Concepts of stress and strain, Axial, shear forces and bending moment diagrams for statically determinate
structures, torsion in shafts. Axial and shear stresses and deformations. Transformation of plane stress, Mohr’s
circle. [3-0-0] Prerequisite: APSC 173 and APSC 180. Lecture
In Person Learning
Tue Thu
9:30 a.m. - 11:00 a.m.

171-A 177-L1A
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Fri
6:00 p.m. - 8:00 p.m.

171-A 171-T1A
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Tue
4:00 p.m. - 6:00 p.m.

171-A 171-T1B
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Mon
12:00 p.m. - 2:00 p.m.

171-A 171-T1C
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Wed
8:00 a.m. - 10:00 a.m.

171-A 171-T1D
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Wed
12:00 p.m. - 2:00 p.m.

171-A 171-T1E
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Mon
6:00 p.m. - 8:00 p.m.

171-A 171-T1G
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Mon
2:00 p.m. - 4:00 p.m.

171-A 171-T1H
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Fri
4:00 p.m. - 6:00 p.m.

171-A 171-T1I
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Wed
6:00 p.m. - 8:00 p.m.

171-A 171-T1J
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Tue
8:00 a.m. - 10:00 a.m.

171-A 171-T1K
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Tue
6:00 p.m. - 8:00 p.m.

171-A 171-T1L
Orthographic projections, axonometric and perspective projections, dimensioning and tolerances, computer-
aided design and modelling, introduction to rapid prototyping, team-based design project. [3-0-2] Discussion
In Person Learning
Thu
4:00 p.m. - 6:00 p.m.

171-A 177-L4
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
(Alternate weeks) 10:00 a.m. - 12:00 p.m.

171-A 177-L8
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
(Alternate weeks) 10:00 a.m. - 12:00 p.m.

171-A 177-L1C
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
(Alternate weeks) 12:00 p.m. - 2:00 p.m.

171-A 177-L1D
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
(Alternate weeks) 12:00 p.m. - 2:00 p.m.

171-A 177-L1E
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
(Alternate weeks) 6:00 p.m. - 8:00 p.m.

171-A 177-L1F
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
(Alternate weeks) 6:00 p.m. - 8:00 p.m.

171-A 177-L1G
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.

171-A 177-L1H
Computer systems, software development, operating systems, compilers, programming in a high-level
language, selection and loop structures, functions, arrays, pointers, files, data acquisition, solving engineering
problems with computer programs. [3-2*-0] Laboratory
In Person Learning
Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.

171-A 176-A
Electric fields and forces, electric potential, capacitance, DC circuits, magnetic fields and forces, Faraday’s law,
inductance, waves, light, and optics. [3-0-1] Prerequisite: APSC 172. Corequisite: APSC 173. Lecture
In Person Learning
Wed Fri
12:30 p.m. - 2:00 p.m.
In Person Learning

Fluid Mechanics I

173

W2

Engineering Computation and Instrumentation

L1I

Laboratory

In Person Learning

Tue

(Alternate weeks)

12:00 p.m. - 2:00 p.m.

Discussion

Engineering Analysis II

5:00 p.m. - 6:00 p.m.

T1E

APSC 177-L1I

APSC 177-L1J

APSC 177-L1K

APSC 177-L1L

APSC 172-Z0I

APSC 173-T2B

APSC 173-T2F

APSC 173-T2G

APSC 173-T2H

APSC 173-T2I

APSC 173-T2A

APSC 173-T2B

APSC 173-T2F

APSC 173-T2G

APSC 173-T2H

APSC 173-T2I

APSC 173-T2B

APSC 173-T2F

APSC 173-T2G

APSC 173-T2H
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Section</th>
<th>Days</th>
<th>Time</th>
<th>Title</th>
</tr>
</thead>
</table>
| APSC 0 173-T2I | T2I     | Wed  | 5:00 p.m. - 6:30 p.m. | Engineering Analysis II  
Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent fluid flow; dimensional analysis; pipe flow; valves and fittings, flow measurements. [3-2*-1] Prerequisite: APSC 172. Discussion In Person Learning Thu 1:00 p.m. - 2:00 p.m. |
| APSC 0 253-T0D | T0D     | Mon  | 12:30 p.m. - 2:00 p.m. | Fluid Mechanics I  
Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent fluid flow; dimensional analysis; pipe flow; valves and fittings, flow measurements. [3-2*-1] Prerequisite: APSC 180, APSC 181, APSC 248. Discussion In Person Learning Fri 11:00 a.m. - 12:00 p.m. |
| APSC 0 253-T0E | T0E     | Tue  | 11:00 a.m. - 12:00 p.m. | Fluid Mechanics I  
Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent fluid flow; dimensional analysis; pipe flow; valves and fittings, flow measurements. [3-2*-1] Prerequisite: APSC 180, APSC 181, APSC 248. Discussion In Person Learning Thu 12:00 p.m. - 1:00 p.m. |
| APSC 0 253-T0F | T0F     | Wed  | 2:00 p.m. - 3:00 p.m. | Fluid Mechanics I  
Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent fluid flow; dimensional analysis; pipe flow; valves and fittings, flow measurements. [3-2*-1] Prerequisite: APSC 180, APSC 181, APSC 248. Discussion In Person Learning Thu 2:00 p.m. - 3:00 p.m. |
| APSC 0 255-T1D | T1D     | Tue  | 10:00 a.m. - 11:00 a.m. | Electric Circuits and Power  
Discussion In Person Learning Tue 10:00 a.m. - 11:00 a.m. |
| APSC 0 255-T1E | T1E     | Wed  | 2:00 p.m. - 3:00 p.m. | Engineering Analysis II  
Integrals and transcendental functions, techniques of integration, applications of integration, polar coordinates, infinite sequences and series, vectors and the geometry of space, and partial derivatives. [3-0-1] Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 11, Principles of Mathematics 11; and Physics 11. Lecture In Person Learning Wed 2:00 p.m. - 3:00 p.m. |
| ASTR 0 120-101 | 101    | Tue  | 11:00 a.m. - 12:30 p.m. | Astrophysics II  
Principles of communication with Indigenous communities. [3-0-0] Prerequisite: APSC 172. |
Chemical reactions, thermochemistry, electrochemistry, and organic chemistry.

Kinematics of particles, curvilinear motion, normal-tangential, polar, cylindrical coordinates, force and acceleration, equation of motions, work and energy, conservation of energy. Introduction to rigid-body dynamics. [3-0-2] Prerequisite: All of APSC 172, APSC 180. Corequisite: APSC 173.


Review of vector calculus and coordinate systems, electrostatic fields, electric dipoles and polarization; magnetostatics fields; magnetic dipoles and magnetization; boundary conditions; electromagnetic induction; Maxwell’s equations. Credit will be granted for only one of APSC 276 or ENGR 305. [3-0-1] Prerequisite: All of APSC 176, APSC 248.

In Person Learning

Identification of dynamical systems by considering input signals, sensor measurements, noise, and disturbance, as well as using parameter estimation, model selection and validation, and practical considerations. Credit will only be granted to one of ENGR 419 or APSC 519.

Written and oral communication in engineering. Report preparation, business correspondence, and oral presentation of technical material. Principles of communication with Indigenous communities. [3-0-0]

Written and oral communication in engineering. Report preparation, business correspondence, and oral presentation of technical material. Principles of communication with Indigenous communities. [3-0-0]
Lecture 2: 2:00 p.m. - 3:30 p.m. Tue (Alternate weeks)

In Person Learning Seminar W2

Laboratory In Person Learning Tue (Alternate weeks) 1:30 p.m. - 5:30 p.m.

Laboratory In Person Learning Tue (Alternate weeks) 3:30 p.m. - 5:30 p.m.

Laboratory In Person Learning Wed (Alternate weeks) 1:00 p.m. - 3:00 p.m.

Laboratory In Person Learning Thu (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Thu (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Thu (Alternate weeks) 9:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Thu (Alternate weeks) 9:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Thu (Alternate weeks) 9:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Thu (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Thu (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Thu (Alternate weeks) 3:30 p.m. - 5:00 p.m.

Laboratory In Person Learning Wed (Alternate weeks) 11:00 a.m. - 12:30 p.m.

Laboratory In Person Learning Tue Thu 9:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

Laboratory In Person Learning Wed (Alternate weeks) 11:00 a.m. - 12:30 p.m.

Laboratory In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

Laboratory In Person Learning Mon Wed 6:00 p.m. - 7:30 p.m.

Laboratory In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

Laboratory In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

Laboratory In Person Learning Fri (Alternate weeks) 2:00 p.m. - 4:00 p.m.
APSC 255-L1B APSC_O 253 L1B Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings; flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Fri (Alternate weeks) 2:00 p.m. - 4:00 p.m.

APSC 255-L1C APSC_O 253 L1C Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Thu (Alternate weeks) 1:00 p.m. - 3:00 p.m.

APSC 255-L1D APSC_O 253 L1D Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Thu (Alternate weeks) 1:00 p.m. - 3:00 p.m.

APSC 255-L1E APSC_O 253 L1E Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

APSC 255-L1F APSC_O 253 L1F Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

APSC 255-L1G APSC_O 253 L1G Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Thu (Alternate weeks) 3:00 p.m. - 5:00 p.m.

APSC 255-L1H APSC_O 253 L1H Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Thu (Alternate weeks) 3:00 p.m. - 5:00 p.m.

APSC 255-L1J APSC_O 253 L1J Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Tue (Alternate weeks) 2:00 p.m. - 4:00 p.m.

APSC 255-L1L APSC_O 253 L1L Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Tue (Alternate weeks) 2:00 p.m. - 4:00 p.m.

APSC 255-L1M APSC_O 253 L1M Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.

APSC 255-L1N APSC_O 253 L1N Fluid Mechanics I W2 Fluid properties and fluid statics; principles of conservation of mass, momentum, and energy; laminar and turbulent flow; dimension analysis; pipe flow; valves and fittings, flow measurements. [3-2*1] Prerequisite: All of APSC 180, APSC 181, APSC 248. Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Biol 125-L01 Biol_O 125 L01 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Mon 12:30 p.m. - 1:30 p.m.

Biol 125-L02 Biol_O 125 L02 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Mon 3:30 p.m. - 6:30 p.m.

Biol 125-L03 Biol_O 125 L03 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Mon 6:30 p.m. - 9:30 p.m.

Biol 125-L04 Biol_O 125 L04 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

Biol 125-L05 Biol_O 125 L05 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Tue 12:30 p.m. - 1:30 p.m.

Biol 125-L06 Biol_O 125 L06 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Tue 3:30 p.m. - 6:30 p.m.

Biol 125-L07 Biol_O 125 L07 Biology for Science Majors II W2 Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Laboratory In Person Learning Tue 6:30 p.m. - 9:30 p.m.

Corequisite: One of CHEM 113, CHEM 123 is recommended.
Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Corequisite: One of CHEM 113, CHEM 123 is recommended.

Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Wed 12:30 p.m. - 3:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Wed 3:30 p.m. - 6:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Wed 6:30 p.m. - 9:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Thu 3:30 p.m. - 6:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Thu 6:30 p.m. - 9:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Fri 9:30 a.m. - 12:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Mon 3:30 p.m. - 6:30 p.m.

Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

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Biology for Science Majors II

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116.

Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.
Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Co-requisite: One of CHEM 113, CHEM 123 is recommended.

Laboratory In Person Learning Tue 3:30 p.m. - 6:30 p.m.

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Co-requisite: One of CHEM 113, CHEM 123 is recommended.

Laboratory In Person Learning Tue 6:30 p.m. - 9:30 p.m.

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Co-requisite: One of CHEM 113, CHEM 123 is recommended.

Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.

Laboratory In Person Learning Tue 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Tue 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Thu 2:10 p.m. - 4:10 p.m.

Laboratory In Person Learning Thu 2:10 p.m. - 4:00 p.m.

Laboratory In Person Learning Mon (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Laboratory In Person Learning Mon (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Laboratory In Person Learning Tue (Alternate weeks) 2:10 p.m. - 4:00 p.m.

Laboratory In Person Learning Tue (Alternate weeks) 2:10 p.m. - 4:00 p.m.

Laboratory In Person Learning Mon (Alternate weeks) 10:00 a.m. - 12:00 p.m.

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Laboratory In Person Learning Thu (Alternate weeks) 2:10 p.m. - 4:10 p.m.

Laboratory In Person Learning Thu (Alternate weeks) 2:10 p.m. - 4:00 p.m.

Laboratory In Person Learning Mon (Alternate weeks) 10:00 a.m. - 12:00 p.m.
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<th>Course Code</th>
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<th>Credits</th>
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<td>APSC_O</td>
<td>Digital Logic Design</td>
<td>3-2*-0</td>
<td>Mon (Alternate weeks)</td>
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<td>APSC_179</td>
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<td>3-2*-0</td>
<td>Mon (Alternate weeks)</td>
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<td>Digital Logic Design</td>
<td>3-2*-0</td>
<td>Mon (Alternate weeks)</td>
<td>Laboratory</td>
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**APSC 255-L1N**

- **Course Title**: Applications of Engineering Design
- **Credits**: 3-1-0
- **Prerequisites**: All of APSC 169, APSC 177, APSC 179, APSC 254.

**APSC 258-L2A**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2B**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2C**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2D**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2E**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2F**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2G**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 258-L2H**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2A**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2B**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2C**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2D**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2E**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2F**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2G**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2H**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2I**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2J**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2K**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2L**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2M**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2N**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2O**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2P**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2Q**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2R**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2S**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2T**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2U**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2V**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2W**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2X**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2Y**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2Z**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L2**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L3**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L4**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L5**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L6**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L7**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L8**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L9**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L10**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L11**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.

**APSC 262-L12**

- **Course Title**: Digital Logic Design
- **Credits**: 3-2*-0
- **Prerequisite**: APSC 178.
Biochemistry Laboratory

Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, FELP analysis, agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOC 393 or BIOL 393. [0-4-0] Prerequisite: BIOC 304 and one of BIOS 200, BIOS 228, CHEM 204, CHEM 214.
Laboratory In Person Learning Thu 2:30 p.m. - 6:30 p.m.

Biochemistry Laboratory

Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, FELP analysis, agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOC 393 or BIOL 393. [0-4-0] Prerequisite: BIOC 304 and one of BIOS 200, BIOS 228, CHEM 204, CHEM 214.
Laboratory In Person Learning Fri 2:30 p.m. - 6:30 p.m.

Biochemistry Laboratory

Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, FELP analysis, agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOC 393 or BIOL 393. [0-4-0] Prerequisite: BIOC 304 and one of BIOS 200, BIOS 228, CHEM 204, CHEM 214.
Laboratory In Person Learning Tue 8:30 a.m. - 12:30 p.m.

Biochemistry Laboratory

Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, FELP analysis, agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOC 393 or BIOL 393. [0-4-0] Prerequisite: BIOC 304 and one of BIOS 200, BIOS 228, CHEM 204, CHEM 214.
Laboratory In Person Learning Tue 2:30 p.m. - 6:30 p.m.

Biochemistry Laboratory

Current methods in gene expression will be presented, relevant to such areas as molecular biology, microbiology, and biochemistry. Topics include extraction, handling and manipulation of RNA, analysis of gene expression (transcriptional), production of recombinant proteins, and genetic transformation of eukaryotes. [0-4-0] Prerequisite: BIOS 308 and one of BIOC 393, BIOL 393.
Laboratory In Person Learning Thu 9:30 a.m. - 1:30 p.m.

Biochemistry Laboratory

Current methods in gene expression will be presented, relevant to such areas as molecular biology, microbiology, and biochemistry. Topics include extraction, handling and manipulation of RNA, analysis of gene expression (transcriptional), production of recombinant proteins, and genetic transformation of eukaryotes. [0-4-0] Prerequisite: BIOS 308 and one of BIOC 393, BIOL 393.
Laboratory In Person Learning Thu 3:30 p.m. - 7:30 p.m.

Biochemistry Laboratory

Current methods in gene expression will be presented, relevant to such areas as molecular biology, microbiology, and biochemistry. Topics include extraction, handling and manipulation of RNA, analysis of gene expression (transcriptional), production of recombinant proteins, and genetic transformation of eukaryotes. [0-4-0] Prerequisite: BIOS 308 and one of BIOC 393, BIOL 393.
Laboratory In Person Learning Fri 9:30 a.m. - 1:30 p.m.

The Biochemical Basis of Disease

Draws on foundational knowledge of normal biochemistry. Inborn errors of metabolism, abnormal growth and metabolism, neurodegeneration and inappropriate protein folding, deficiency diseases, endocrine disorders, and cardiovascular and hematological disorders. Credit will be granted for only one of BIOC 407 or BIOL 507. [3-0-0] Prerequisite: One of BIOC 305, BIOS 310.
Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

Biology for Science Majors II

Continuation of BIOC 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOS 110/125 or BIOS 117/122. [3-0-0] Prerequisite: BIOC 116.
Corequisite: One of CHEM 113, CHEM 123 is recommended.
Laboratory In Person Learning Wed 3:30 p.m. - 6:30 p.m.

Biology for Science Majors II

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Biology for Science Majors II

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Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

Biology for Science Majors II

Continuation of BIOC 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOS 110/125 or BIOS 117/122. [3-0-0] Prerequisite: BIOC 116.
Corequisite: One of CHEM 113, CHEM 123 is recommended.
Laboratory In Person Learning Thu 12:30 p.m. - 3:30 p.m.

Biology for Science Majors II

Continuation of BIOC 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOS 110/125 or BIOS 117/122. [3-0-0] Prerequisite: BIOC 116.
Corequisite: One of CHEM 113, CHEM 123 is recommended.
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Biology for Science Majors II

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Laboratory In Person Learning Thu 6:30 p.m. - 9:30 p.m.
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Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Arranged Arranged

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Arranged Arranged

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Tue 8:00 a.m. - 11:00 a.m.

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Wed 8:00 a.m. - 11:00 a.m.

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

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Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Fri 8:00 a.m. - 11:00 a.m.

Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, inter-organ coordination in plants and animals, and excretion and movement in animals. Ecosystem, population, community, and behavioural ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Laboratory In Person Learning Arranged Arranged

Structure and function of plant and animal cells; membrane models, cytoplasmic organelles, biological transport processes, cytoskeleton and cell motility. [3-0-0] Prerequisite: BIOL 125 and one of CHEM 113, CHEM 123. Lecture Cell Biology W2 Tue Thu 2:00 p.m. - 3:30 p.m.

Fundamental processes underlying adaptive evolution, speciation, and extinction. Methods used to reconstruct the evolutionary histories of, and relationships among, groups of organisms. Factors determining the distribution and abundance of organisms. Competition, predation, and an explanation of processes that promote species coexistence and lead to the maintenance of species diversity. [3-0-0] Prerequisite: BIOL 125. Lecture In Person Learning Thu 8:00 a.m. - 9:30 a.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 10:00 a.m. - 11:30 a.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 1:00 p.m. - 2:30 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 9:30 a.m. - 12:30 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 2:00 p.m. - 5:00 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 12:30 p.m. - 2:00 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 2:00 p.m. - 5:00 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 12:30 p.m. - 3:30 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 2:00 p.m. - 5:00 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 12:30 p.m. - 3:30 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 2:00 p.m. - 5:00 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 12:30 p.m. - 3:30 p.m.

Comparative study of Bryophytes, Pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOS 117, BIOS 122. Lecture Land Plants W2 Mon Thu Fri 2:00 p.m. - 5:00 p.m.
**Biol_O 319**

**L01** Land Plants

**W2** Comparative study of bryophytes, pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOC 125 or (b) all of BIOC 117, BIOC 122. Laboratory In Person Learning Mon 6:30 p.m. - 9:30 p.m.

**Biol_O 320-104**

**Biol_O 320**

**L04** Land Plants

**W2** Comparative study of bryophytes, pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: Either (a) BIOC 125 or (b) all of BIOC 117, BIOC 122. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

**Biol_O 322-101**

**Biol_O 322**

**101** Human Infectious Disease

**W2** Agents of infectious disease in humans. Physiology and structure, mechanisms of pathogenesis, immunological response, clinical disease caused, laboratory diagnosis, treatment, prevention, and control. Properties and uses of antimicrobial agents, resistance, vaccines, and bioterrorism. Credit will be granted for only one of BIOC 322 or BIOC 334. [3-0-0] Prerequisite: Either (a) BIOC 235 or (b) HIST 251. Lecture In Person Learning Mon 2:00 p.m. - 5:00 p.m.

**Biol_O 325-101**

**Biol_O 325**

**101** Principles of Genetics

**W2** Mendelian genetics, gene expression, recombination, mutation, evolution, and molecular techniques. Examples will be drawn from both eukaryotic and prokaryotic systems. Credit will be granted for only one of BIOC 260 or BIOC 365. [3-0-0] Prerequisite: BIOC 125. Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

**Biol_O 336-101**

**Biol_O 336**

**101** Ecology of Animals

**W2** Integrates recent advances in the study of animal ecology. Principles of animal community, population, and individual ecology are covered. [1-0-0] Prerequisite: BIOC 201 and BIOC 202. In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

**Biol_O 332-101**

**Biol_O 332**

**101** Virology

**W2** Study of viral agents of infectious disease in eukaryotes. Viral pathogens investigated with respect to classification, structure, replication, mechanisms of pathogenesis, clinical disease caused, viroepidemiology, laboratory diagnosis, treatment, prevention, and control. Topics include properties and uses of antiviral agents, production and use of vaccines, and bioterrorism. [3-0-0] Prerequisite: BIOC 228. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

**Biol_O 338-002**

**Biol_O 338**

**002** Immunology

**W2** Introduction to concepts of immunology. Immune system, innate immunity and complement, adaptive immunity, cellular and humoral immune response, cytokines, T-cell activation, the major histocompatibility complex, antibody structure and genetics, immune system and cancer, AIDS, autoimmunity, hypersensitivity. [3-0-0] Prerequisite: BIOC 228. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

**Biol_O 339-101**

**Biol_O 339**

**101** Biochemistry II

**W2** Continuation of BIOC 311. Energy production via glycolysis, oxidative phosphorylation, and photosynthesis. Integration and control of carbohydrate, lipid, and protein metabolism. Synthesis, and metabolism of nucleic acids and the biochemistry of gene function. Credit will only be granted for one of BIOC 319 or BIOC 305. [3-0-0] Prerequisite: BIOC 311. Lecture In Person LearningTue Thu 9:30 a.m. - 11:00 a.m.

**Biol_O 330-101**

**Biol_O 330**

**101** Clinical Neuroscience

**W2** The structural, biochemical, and functional changes that characterize clinically-important diseases of the nervous system, including: brain and spinal cord trauma; developmental disorders, memory, and memory dysfunction; neurodegenerative diseases; mood and anxiety disorders; epilepsy; and maintenance of homeostasis. [3-0-0] Prerequisite: One of BIOC 200, BIOC 241, PSYO 210, PSYO 311. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

**Biol_O 335-101**

**Biol_O 335**

**101** Comparative Animal Physiology

**W2** Comparative course concerning the evolution and advantage of systems design in a variety of animals. Two underlying themes include the principles of homeostasis - the regulation of a constant internal state - and the systems involved in maintaining a constant internal environment: cardiovascular, respiratory, osmoregulatory, and endocrine. [3-0-0] Prerequisite: BIOC 154. Lecture In Person Learning Wed Fri 11:00 a.m. - 1:30 p.m.

**Biol_O 323-101**

**Biol_O 323**

**101** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

**Biol_O 323-101**

**Biol_O 323**

**101** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Laboratory In Person Learning Wed 2:00 p.m. - 5:00 p.m.

**Biol_O 323-102**

**Biol_O 323**

**102** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Laboratory In Person Learning Wed 6:30 p.m. - 9:30 p.m.

**Biol_O 323-103**

**Biol_O 323**

**103** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Laboratory In Person LearningThu 9:30 a.m. - 12:30 p.m.

**Biol_O 323-104**

**Biol_O 323**

**104** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Laboratory In Person Learning Thu 2:00 p.m. - 5:00 p.m.

**Biol_O 323-105**

**Biol_O 323**

**105** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Laboratory In Person Learning Thu 6:30 p.m. - 9:30 p.m.

**Biol_O 336-KMT**

**Biol_O 336**

**KMT** Developmental Biology

**W2** Principles of animal development. Embryonic development of key invertebrates is compared to vertebrates at the morphological, genetic, and epigenetic levels. Differential gene expression and cell-signaling responsible for the specification of embryonic cell fates and pattern formation will be compared in various animals. Credit will be granted for only one of BIOL 383 or BIOL 263. [3-3-0] Prerequisite: BIOC 200. Laboratory In Person Learning Arranged Arranged

**Biol_O 370-001**

**Biol_O 370**

**001** African Savannah Biology

**W2** Analysis of the ecological, developmental, and evolutionary mechanisms responsible for the diversity of African savannah life including early hominins. [3-0-0] Prerequisite: BIOC 201. Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.
Introduction to the diverse roles of microbes in natural and artificial environments. Topics range from community interactions to biogeochemical cycles to bioremediation and will introduce principles, practical applications such as waste water treatment, and implications of environmental microbiology. [3-0-0] Prerequisite: BIOC 209 and one of CHEM 211, CHEM 213.

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**BIOC 382-101 BIOC 383**

101 Environmental Microbiology W2

Physiology and molecular biology of prokaryotic organisms. Molecular structure and functional aspects of prokaryotic cells including: bacterial and archaeal metabolism; energy production and use by aerobes and anaerobes; cellular growth and biosynthesis; and molecular genetics. Credit will be granted for only one of BIOC 382 or BIOC 420 when the subject matter is of the same nature. [3-0-0] Prerequisite: BIOC 228 and one of CHEM 204, CHEM 214.

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**BIOC 382-101 BIOC 383**

101 Prokaryotic Physiology W2

Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, FELP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOC 393 or BIOC 395. [0-4-0] Prerequisite: BIOC 311. Co-requisite: BIOC 366. Equivalency: BIOC393

Laboratory W2

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**BIOC 383-101 Bioc 393**

101 Biochemistry Laboratory W2

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**BIOC 393-101 Bioc 393**

101 Biochemistry Laboratory W2

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**BIOC 393-102 Bioc 393**

102 Biochemistry Laboratory W2

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**BIOC 393-103 Bioc 393**

103 Biochemistry Laboratory W2

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**BIOC 393-104 Bioc 393**

104 Biochemistry Laboratory W2

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**BIOC 393-105 Bioc 393**

105 Biochemistry Laboratory W2

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**BIOC 393-106 Bioc 393**

106 Biochemistry Laboratory W2

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**BIOC 393-107 Bioc 393**

107 Biochemistry Laboratory W2

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**BIOC 393-108 Bioc 393**

108 Biochemistry Laboratory W2

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**BIOC 417-101 Bioc 417**

101 Evolutionary Ecology W2

Scenic scientific basis of conservation biology. Analysis of demographic data, population models, and extinction risks. Examine complex habitat, landscape, genetic, and trophic interactions that affect populations. Conservation approaches including habitat planning, reserve design, surrogacy, and policy. Credit will be granted for only one of BIOC 422 or BIOC 513. [3-0-0] Prerequisite: BIOC 308.

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**BIOC 422-101 BIOC 422**

101 Conservation Biology W2

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**BIOC 423-001 BIOC 424**

001 Global Food Systems: Society, Ecology, Sustainability W2

The molecular and cellular basis of cancer: Introduction to principles of oncology including prevention, diagnosis and treatment. [2-0-0] Prerequisite: One of BIOC 311, BIOC 104 and one of BIOC 200, BIOC 205, BIOC 306.

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**BIOC 426-101 BIOC 426**

101 Cancer Biology W2

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**BIOC 430-001 BIOC 430**

100 Special Topics in Biology, Lecture Format W2

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**BIOC 430-N_001 BIOC 430**

N_001 Special Topics in Biology, Lecture Format W2

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**BIOC 430-W_001 BIOC 430**

W_001 Special Topics in Biology, Lecture Format W2

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**BIOC 460-101 BIOC 461**

101 Cell Signaling W2

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**BIOC 468-001 BIOC 468**

001 Molecular Approaches in Ecology and Evolution W2

Scientific basis of conservation biology. Obtain and analyze demographic data, develop population models, and project extinction risks. Complex habitat, landscape, genetic, and trophic interactions that affect population dynamics. Conservation approaches including habitat planning, reserve design, surrogacy, and policy. Credit will be granted for only one of BIOC 422 or BIOC 513. [3-0-0] Prerequisite: BIOC 201.

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**BIOC 513-101 BIOC 513**

101 Conservation Biology W2
CHEM_123-001 CHEM_O 123 001 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

CHEM_123-002 CHEM_O 123 002 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

CHEM_123-101 CHEM_O 123 001 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Mon 12:30 p.m. - 2:30 p.m.

CHEM_123-102 CHEM_O 123 002 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Mon 12:30 p.m. - 2:30 p.m.

CHEM_123-103 CHEM_O 123 003 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Mon 12:30 p.m. - 2:30 p.m.

CHEM_123-104 CHEM_O 123 004 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

CHEM_123-105 CHEM_O 123 005 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

CHEM_123-106 CHEM_O 123 006 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

CHEM_123-107 CHEM_O 123 007 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 1:30 p.m. - 4:30 p.m.

CHEM_123-108 CHEM_O 123 008 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 1:30 p.m. - 4:30 p.m.

CHEM_123-109 CHEM_O 123 009 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 1:30 p.m. - 4:30 p.m.

CHEM_123-110 CHEM_O 123 010 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

CHEM_123-111 CHEM_O 123 011 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

CHEM_123-112 CHEM_O 123 012 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

CHEM_123-113 CHEM_O 123 013 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM_123-114 CHEM_O 123 014 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM_123-115 CHEM_O 123 015 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM_123-116 CHEM_O 123 016 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM_123-117 CHEM_O 123 017 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM_123-118 CHEM_O 123 018 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM_123-121 CHEM_O 123 021 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.

CHEM_123-122 CHEM_O 123 022 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.

CHEM_123-123 CHEM_O 123 023 Physical and Organic Chemistry W2 Chemical kinetics, equilibrium, thermodynamics and energy changes, acid and base equilibria, introductory organic chemistry. Credit will be granted for only one of CHEM 123 or CHEM 113. [3-3-0] Prerequisite: CHEM 121. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.
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Principles of chemical kinetics, reaction mechanisms, and chemical thermodynamics. Credit will be granted for only one of CHEM 201 or 210. [3-3-1] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 111, CHEM 121. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended.

Lecture In Person Learning Thu 1:30 p.m. - 4:30 p.m.

Principles of chemical kinetics, reaction mechanisms, and chemical thermodynamics. Credit will be granted for only one of CHEM 201 or 210. [3-3-1] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 111, CHEM 121. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended.

Lecture In Person Learning Thu 5:30 p.m. - 8:30 p.m.

Principles of chemical kinetics, reaction mechanisms, and chemical thermodynamics. Credit will be granted for only one of CHEM 201 or 210. [3-3-1] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 111, CHEM 121. A minimum grade of 65% in CHEM 113 is strongly recommended.

Laboratory In Person Learning Fri 11:00 a.m. - 2:00 p.m.

Principles of chemical kinetics, reaction mechanisms, and chemical thermodynamics. Credit will be granted for only one of CHEM 201 or 210. [3-3-1] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 111, CHEM 121. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended.

Seminar In Person Learning Mon (Alternate weeks) 9:00 a.m. - 10:00 a.m.

Principles of chemical kinetics, reaction mechanisms, and chemical thermodynamics. Credit will be granted for only one of CHEM 201 or 210. [3-3-1] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 111, CHEM 121. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended.

Seminar In Person Learning Mon (Alternate weeks) 9:00 a.m. - 10:00 a.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Lecture In Person Learning Mon Wed Fri 3:00 p.m. - 4:00 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Mon 12:00 p.m. - 3:00 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Tue 1:30 p.m. - 4:30 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Wed 4:30 p.m. - 7:30 p.m.

Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromaticity and aromatic substitution; functional group transformations in organic synthesis; carbohydrates, amino acids, proteins, heterocycles. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3-0] Prerequisite: CHEM 203. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214.

Laboratory In Person Learning Arranged Arranged

Intended for students in earth, environmental, and life sciences. Thermodynamics and kinetics as they apply to natural systems. This course cannot be used for credit by Chemistry Majors. Credit will be granted for only one of CHEM 201 or 210. [3-3-1] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 111, CHEM 121. A minimum grade of 80% in CHEM 113 is strongly recommended.

Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.
Intended for students in earth, environmental, and life sciences. Thermodynamics and kinetics as they apply to natural systems. This course cannot be used for credit by Chemistry Majors. Credit will be granted for only one of CHEM 201 or 210. Pre-requisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122 and one of CHEM 113. A minimum grade of 65% in CHEM 113 is strongly recommended. Laboratory In Person Learning Mon (Alternate weeks) 10:00 a.m. - 1:00 p.m.

Mechanistic description of aromatic substitution, reactions of carbon compounds and amines, oxidation/reduction reactions. Chemistry of carbohydrates, amino acids, vitamins, lipids, nucleotides. Chemical principles of biological catalysis and metabolism. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3*-0] Prerequisite: One of CHEM 201, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 204. Lecture In Person Learning Wed (Alternate weeks) 5:30 p.m. - 8:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbon compounds and amines, oxidation/reduction reactions. Chemistry of carbohydrates, amino acids, vitamins, lipids, nucleotides. Chemical principles of biological catalysis and metabolism. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3*-0] Prerequisite: One of CHEM 201, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 204. Laboratory In Person Learning Wed (Alternate weeks) 5:30 p.m. - 8:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbon compounds and amines, oxidation/reduction reactions. Chemistry of carbohydrates, amino acids, vitamins, lipids, nucleotides. Chemical principles of biological catalysis and metabolism. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3*-0] Prerequisite: One of CHEM 201, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 9:30 a.m. - 12:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbon compounds and amines, oxidation/reduction reactions. Chemistry of carbohydrates, amino acids, vitamins, lipids, nucleotides. Chemical principles of biological catalysis and metabolism. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3*-0] Prerequisite: One of CHEM 201, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 1:30 p.m. - 4:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbon compounds and amines, oxidation/reduction reactions. Chemistry of carbohydrates, amino acids, vitamins, lipids, nucleotides. Chemical principles of biological catalysis and metabolism. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3*-0] Prerequisite: One of CHEM 201, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 5:30 p.m. - 8:30 p.m.

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Mechanistic description of aromatic substitution, reactions of carbon compounds and amines, oxidation/reduction reactions. Chemistry of carbohydrates, amino acids, vitamins, lipids, nucleotides. Chemical principles of biological catalysis and metabolism. Credit will be granted for only one of CHEM 204 or CHEM 214. [3-3*-0] Prerequisite: One of CHEM 201, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 5:30 p.m. - 8:30 p.m.

Properties of natural waters, including gas and solid equilibria, pH, redox, complexation analysis, corrosion treatment, ion-exchange, colloid, and microbial transformations. [3-3*-0] Prerequisite: One of MATH 101, MATH 103 and one of CHEM 201. CHEM 210. Lecture In Person Learning Wed (Alternate weeks) 5:00 p.m. - 6:30 p.m.

Overview of instrumental methods of chemical analysis, including spectroscopic methods, mass spectrometry, electromorphosis and chromatography. [3-4-0] Prerequisite: CHEM 211. One of BIOS 202, STAT 230 is strongly recommended. Lecture In Person Learning Mon Wed Fri 3:30 p.m. - 4:30 p.m.
CHEM_O 311-101 CHEM_O 311 L01 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectrometric methods, mass spectrometry, electrophoresis and chromatography. [3-4-0] Prerequisite: CHEM 211. One of BIOG 202, STAT 230 is strongly recommended. Laboratory In Person Learning Wed 4:00 p.m. - 8:00 p.m.

CHEM_O 311-102 CHEM_O 311 L02 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectrometric methods, mass spectrometry, electrophoresis and chromatography. [3-4-0] Prerequisite: CHEM 211. One of BIOG 202, STAT 230 is strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 1:30 p.m.

CHEM_O 311-103 CHEM_O 311 L03 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectrometric methods, mass spectrometry, electrophoresis and chromatography. [3-4-0] Prerequisite: CHEM 211. One of BIOG 202, STAT 230 is strongly recommended. Laboratory In Person Learning Thu 2:30 p.m. - 6:30 p.m.

CHEM_O 311-XMT CHEM_O 311 XMT Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectrometric methods, mass spectrometry, electrophoresis and chromatography. [3-4-0] Prerequisite: CHEM 211. One of BIOG 202, STAT 230 is strongly recommended. Laboratory In Person Learning Arranged Arranged

CHEM_O 312-001 CHEM_O 312 W2 Introduction to Quantum Mechanics and Spectroscopy Principles of quantum mechanics, atomic wavefunctions, angular momentum, spins, atomic term symbols. [3-4*-0] Prerequisite: CHEM 201, Corequisite: MATH 200 is strongly recommended. Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

CHEM_O 312-101 CHEM_O 312 L01 Introduction to Quantum Mechanics and Spectroscopy Principles of quantum mechanics, atomic wavefunctions, angular momentum, spins, atomic term symbols. [3-4*-0] Prerequisite: CHEM 201, Corequisite: MATH 200 is strongly recommended. Laboratory In Person Learning Tue (Alternate weeks) 3:30 p.m. - 7:30 p.m.

CHEM_O 312-102 CHEM_O 312 L02 Introduction to Quantum Mechanics and Spectroscopy Principles of quantum mechanics, atomic wavefunctions, angular momentum, spins, atomic term symbols. [3-4*-0] Prerequisite: CHEM 201, Corequisite: MATH 200 is strongly recommended. Laboratory In Person Learning Tue (Alternate weeks) 3:30 p.m. - 7:30 p.m.

CHEM_O 312-XMT CHEM_O 312 XMT Introduction to Quantum Mechanics and Spectroscopy Principles of quantum mechanics, atomic wavefunctions, angular momentum, spins, atomic term symbols. [3-4*-0] Prerequisite: CHEM 201, Corequisite: MATH 200 is strongly recommended. Laboratory In Person Learning Arranged Arranged

Chem 317-001 CHEM_O 317 W2 Environmental Physical Organic Chemistry Basic physicochemical processes governing the fate, transport, distribution, properties, and reactions of anthropogenic organic compounds in the environment including pesticides and herbicides. Includes aspects of the photochemistry, structure–activity relationship, detection, toxidology, remediation, and soil impact of such compounds. [3-0-0] Prerequisite: One of MATH 101, MATH 103 and one of CHEM 204, CHEM 214 and one of PHYS 121, PHYS 122. Lecture In Person Learning Mon Wed Fri 4:00 p.m. - 5:00 p.m.

Chem 317-101 CHEM_O 317 W2 Environmental Physical Organic Chemistry Basic physicochemical processes governing the fate, transport, distribution, properties, and reactions of anthropogenic organic compounds in the environment including pesticides and herbicides. Includes aspects of the photochemistry, structure–activity relationship, detection, toxidology, remediation, and soil impact of such compounds. [3-0-0] Prerequisite: One of MATH 101, MATH 103 and one of CHEM 204, CHEM 214 and one of PHYS 121, PHYS 122. Lecture In Person Learning Arranged Arranged

CHEM_O 319-101 CHEM_O 319 L01 Topics in Computerized Instrumentation, Lecture W2 Computerized data acquisition and analysis in chemistry instrumentation, development of new instruments to collect and analyze experimental data: Digital acquisition systems, optical systems, electrical circuits, and coding. [3-0-0] Prerequisite: All of CHEM 200, MATH 200. Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 5:00 p.m.

CHEM_O 319-102 CHEM_O 319 L02 Topics in Computerized Instrumentation, Lecture W2 Computerized data acquisition and analysis in chemistry instrumentation, development of new instruments to collect and analyze experimental data: Digital acquisition systems, optical systems, electrical circuits, and coding. [3-0-0] Prerequisite: All of CHEM 200, MATH 200. Laboratory In Person Learning Tue (Alternate weeks) 11:00 a.m. - 1:00 p.m.

CHEM_O 330-001 CHEM_O 330 W2 Advanced Organic Chemistry Application of carbonyl group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*-0] Prerequisite: One of CHEM 204, CHEM 214. Lecture In Person Learning Mon Wed Fri 10:00 a.m. - 11:00 a.m.

CHEM_O 330-101 CHEM_O 330 L01 Advanced Organic Chemistry Application of carbonyl group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*-0] Prerequisite: One of CHEM 204, CHEM 214. Laboratory In Person Learning Tue (Alternate weeks) 11:00 a.m. - 1:00 p.m.

CHEM_O 330-102 CHEM_O 330 L02 Advanced Organic Chemistry Application of carbonyl group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*-0] Prerequisite: One of CHEM 204, CHEM 214. Laboratory In Person Learning Mon (Alternate weeks) 11:00 a.m. - 1:00 p.m.

CHEM_O 330-103 CHEM_O 330 L03 Advanced Organic Chemistry Application of carbonyl group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*-0] Prerequisite: One of CHEM 204, CHEM 214. Laboratory In Person Learning Tue (Alternate weeks) 4:00 p.m. - 8:00 p.m.

CHEM_O 335-001 CHEM_O 335 W2 Bioinorganic Chemistry Examination of the involvement of inorganic chemistry in biological systems; structure and chemistry of metalloproteins and metalloenzymes. Nature of proteins, biomolecules, and simple bonding models of d-block compounds; iron and copper proteins involved with electron and oxygen transport and oxygen and nitrogen activation, various proteins of zinc and nickel. [3-0-0] Prerequisite: One of CHEM 204, CHEM 214 and one of CHEM 202, CHEM 210. Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

CHEM_O 335-001 CHEM_O 335 W2 Bioinorganic Chemistry Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoredox catalysis, solar fuels. [3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214. Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

CHEM_O 335-101 CHEM_O 335 W2 Bioinorganic Chemistry Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoredox catalysis, solar fuels. [3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214. Laboratory In Person Learning Tue (Alternate weeks) 8:00 a.m. - 12:00 p.m.

CHEM_O 335-102 CHEM_O 335 W2 Bioinorganic Chemistry Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoredox catalysis, solar fuels. [3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214. Laboratory In Person Learning Tue (Alternate weeks) 1:00 p.m. - 5:00 p.m.

CHEM_O 403-101 CHEM_O 403 W2 Enzymology Enzyme kinetics: steady-state kinetic analysis, fast-reaction methods, kinetic isotope effects. Catalytic mechanisms: coenzymology, radical-mediated reactions, catalytic site enhancements. Special topics: enzyme evolution, multifunctional enzymes, biocatalysis, protein engineering. Credit will be granted for only one of CHEM 403, BIOL 403, CHEM 569 or CHEM 469. [3-0-0] Prerequisite: One of BIOG 204, BIOG 211. Equivalency: BIOG 403. Lecture In Person Learning Mon Wed Fri 9:00 a.m. - 10:00 a.m.
Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 446 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_101 CHEM_O 448 A A_101 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_102 CHEM_O 448 A A_102 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_103 CHEM_O 448 A A_103 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_104 CHEM_O 448 A A_104 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_105 CHEM_O 448 A A_105 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_106 CHEM_O 448 A A_106 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_107 CHEM_O 448 A A_107 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_108 CHEM_O 448 A A_108 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_109 CHEM_O 448 A A_109 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_110 CHEM_O 448 A A_110 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_111 CHEM_O 448 A A_111 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_112 CHEM_O 448 A A_112 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_113 CHEM_O 448 A A_113 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_114 CHEM_O 448 A A_114 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_115 CHEM_O 448 A A_115 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_116 CHEM_O 448 A A_116 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_117 CHEM_O 448 A A_117 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_118 CHEM_O 448 A A_118 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448_C_119 CHEM_O 448 A A_119 Special Topics in Chemistry, Lecture Format W2 Independent Study In Person Learning Arranged Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.
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<th>Course Code</th>
<th>Semester</th>
<th>Year</th>
<th>Title</th>
<th>Type</th>
<th>Location</th>
<th>Days</th>
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<td>COOP O 406-201</td>
<td>201</td>
<td>2</td>
<td>Co-op Education Work Experience VI</td>
<td>2</td>
<td>Arranged</td>
<td>In Person Learning</td>
<td>Thursday</td>
<td>5:00 p.m. - 6:30 p.m.</td>
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<td>CDOR H 203-101</td>
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<td>203</td>
<td>Communication in the Sciences</td>
<td>W2</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Tuesday</td>
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<td>9:30 a.m. - 11:00 a.m.</td>
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<td>Communications in the Humanities</td>
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<td>Lecture</td>
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<tr>
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<td>Communication in the Social Sciences</td>
<td>W2</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Tuesday</td>
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<td>CDOR H 205-102</td>
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<td>205</td>
<td>Communication in the Social Sciences</td>
<td>W2</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Monday</td>
<td>5:00 p.m. - 6:30 p.m.</td>
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<tr>
<td>CDOR H 216-101</td>
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<td>216</td>
<td>Communication and Media</td>
<td>W2</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Monday</td>
<td>8:00 a.m. - 9:30 a.m.</td>
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<tr>
<td>CDOR H 304-001</td>
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<td>304</td>
<td>Persuasive Rhetoric, Public Speaking, and Advocacy</td>
<td>W2</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Monday</td>
<td>11:00 a.m. - 12:30 p.m.</td>
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<tr>
<td>CDOR H 380-101</td>
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<td>380</td>
<td>Public Memory, Commemoration, and Identity</td>
<td>W3</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Monday</td>
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<td>Communication Capstone</td>
<td>W2</td>
<td>Lecture</td>
<td>Multi-access Learning</td>
<td>Tuesday</td>
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<td>Lecture</td>
<td>In Person Learning</td>
<td>Wednesday</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<td>Friday</td>
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<td>W2</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Tuesday</td>
<td>12:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>COSC O 101-105</td>
<td>0</td>
<td>101</td>
<td>Digital Citizenship</td>
<td>W2</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Tuesday</td>
<td>8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>COSC O 101-106</td>
<td>0</td>
<td>101</td>
<td>Digital Citizenship</td>
<td>W2</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Tuesday</td>
<td>12:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>COSC O 101-107</td>
<td>0</td>
<td>101</td>
<td>Digital Citizenship</td>
<td>W3</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Tuesday</td>
<td>4:00 p.m. - 6:00 p.m.</td>
</tr>
</tbody>
</table>
COSC_121-L2A COSC_ 111
10:00 a.m. - 12:00 p.m.
In Person Learning
Computer Programming I
W2
Lecture
Laboratory
In Person Learning
Mon
Fri

Programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of
PREC 12, MATH 12, MATH 125, MATH 126.

Advanced programming in the application of software engineering techniques to the design
and implementation of programs manipulating complex data structures. [3-2-0] Prerequisite: A score of 60% or
higher in one of COSC 111, COSC 123, APSC 177.

Knowledge and skills to navigate the digital society. Digital participation, digital access, skills and utilization.
Digital literacy, computer applications, converging technologies, and online resources. This course does not
assume students have any Computer Science background. [3-2-0]

Laboratory
In Person Learning
Fri
12:00 p.m. - 2:00 p.m.

Laboratory
In Person Learning
Thur
4:00 p.m. - 6:00 p.m.

Laboratory
In Person Learning
Mon
8:00 a.m. - 10:00 a.m.

Laboratory
In Person Learning
Fri
2:10 p.m. - 4:10 p.m.

Laboratory
In Person Learning
Fri
2:10 p.m. - 4:10 p.m.

Laboratory
In Person Learning
Mon
10:00 a.m. - 12:00 p.m.

Laboratory
In Person Learning
Mon
11:00 a.m. - 2:00 p.m.

Laboratory
In Person Learning
Fri
6:30 p.m. - 8:00 p.m.

Laboratory
In Person Learning
Fri
10:00 a.m. - 12:00 p.m.

Laboratory
In Person Learning
Mon
2:00 p.m. - 4:00 p.m.

Laboratory
In Person Learning
Mon
2:00 p.m. - 4:00 p.m.

Laboratory
In Person Learning
Thur
12:00 p.m. - 2:00 p.m.

Laboratory
In Person Learning
Wed
12:00 p.m. - 2:00 p.m.

Laboratory
In Person Learning
Fri
12:00 p.m. - 2:00 p.m.

Laboratory
In Person Learning
Wed
4:00 p.m. - 6:00 p.m.

Laboratory
In Person Learning
Wed
10:00 a.m. - 12:00 p.m.

Laboratory
In Person Learning
Mon
4:10 p.m. - 6:10 p.m.

Laboratory
In Person Learning
Thu
12:00 p.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Schedule</th>
<th>Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSC 221</td>
<td>Computer Programming II</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>Prerequisite: A score of 60% or higher in one of COSC 121, COSC 123, APSC 177.</td>
</tr>
<tr>
<td>COSC 222</td>
<td>Data Structures</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>Laboratory</td>
<td>Prerequisite: COSC 221.</td>
</tr>
<tr>
<td>COSC 303</td>
<td>Numerical Analysis</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>Prerequisite: One of MATH 200, MATH 221, and either (a) COSC 111 or (b) DATA 301. Equivalency: MATH 303.</td>
</tr>
<tr>
<td>COSC 210</td>
<td>Discrete Structures in Computing</td>
<td>11:00 a.m. - 1:00 p.m.</td>
<td>Laboratory</td>
<td>Prerequisite: A score of 60% or higher in one of COSC 111, COSC 123, APSC 177.</td>
</tr>
<tr>
<td>COSC 221</td>
<td>Computer Programming II</td>
<td>9:00 a.m. - 11:00 a.m.</td>
<td>Laboratory</td>
<td>Prerequisite: COSC 111.</td>
</tr>
<tr>
<td>COSC 222</td>
<td>Data Structures</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>Prerequisite: COSC 221.</td>
</tr>
<tr>
<td>COSC 303</td>
<td>Numerical Analysis</td>
<td>11:00 a.m. - 1:00 p.m.</td>
<td>Laboratory</td>
<td>Prerequisite: One of MATH 200, MATH 221, and either (a) COSC 111 or (b) DATA 301. Equivalency: MATH 303.</td>
</tr>
</tbody>
</table>

**Course Descriptions:**

- **COSC 210: Discrete Structures in Computing**
  - **Lecture (W2):** 11:00 a.m. - 1:00 p.m. in Person Learning.
  - **Laboratory:** 9:00 a.m. - 11:00 a.m. in Person Learning.
  - **Topics:** Discrete structures in computing and relevant mathematical techniques. Logic and applications in automated reasoning and programming; proof techniques and analysis of algorithms and computation models; graph theory and graph models in computing; counting principles and discrete probability. [3-0-1] Prerequisite: One of MATH 101, MATH 103, MATH 142, APSC 173. Corequisite: COSC 121.

- **COSC 221: Computer Programming II**
  - **Lecture (W2):** 10:00 a.m. - 12:00 p.m. in Person Learning.
  - **Laboratory:** 9:00 a.m. - 11:00 a.m. in Person Learning.
  - **Topics:** Advanced programming in the application of software engineering techniques to the design and implementation of programs manipulating complex data structures. [3-2-0] Prerequisite: A score of 60% or higher in one of COSC 111, COSC 123, APSC 177.

- **COSC 222: Data Structures**
  - **Lecture (W2):** 11:00 a.m. - 1:00 p.m. in Person Learning.
  - **Laboratory:** 10:00 a.m. - 12:00 p.m. in Person Learning.
  - **Topics:** Discrete structures in computing and relevant mathematical techniques. Logic and applications in automated reasoning and programming; proof techniques and analysis of algorithms and computation models; graph theory and graph models in computing; counting principles and discrete probability. [3-0-1] Prerequisite: One of MATH 101, MATH 103, MATH 142, APSC 173. Corequisite: COSC 221.

- **COSC 303: Numerical Analysis**
  - **Lecture (W2):** 11:00 a.m. - 1:00 p.m. in Person Learning.
  - **Laboratory:** 10:00 a.m. - 12:00 p.m. in Person Learning.
  - **Topics:** Numerical techniques for basic mathematical processes and their analysis. Taylor polynomials, root-finding, linear systems, eigenvalues, approximating derivatives, locating minizers, approximating integrals, solving differential equations. Credit will be granted for only one of COSC 303 or MATH 303. [3-0-1] Prerequisite: All of MATH 200, MATH 221, and either (a) COSC 111 or (b) DATA 301. Equivalency: MATH 303.
COSC 303-L01 COSC_O 303 L01 Numerical Analysis
101
W2
Lecture
In Person Learning
Thu
11:00 a.m. - 12:00 p.m.

COSC 303-L02 COSC_O 303 L02 Numerical Analysis
101
W2
Lecture
In Person Learning
Fri
11:00 a.m. - 12:00 p.m.

COSC 305-L01 COSC_O 305 L01 Project Management
101
W2
Project Management
Laboratory
In Person Learning
Mon
9:30 a.m. - 11:00 a.m.

COSC 305-L02 COSC_O 305 L02 Project Management
101
W2
Project Management
Laboratory
In Person Learning
Wed
2:00 p.m. - 4:00 p.m.

COSC 305-L03 COSC_O 305 L03 Project Management
101
W2
Project Management
Laboratory
In Person Learning
Thu
8:00 a.m. - 10:00 a.m.

COSC 305-L04 COSC_O 305 L04 Project Management
101
W2
Project Management
Laboratory
In Person Learning
Thu
12:00 p.m. - 2:00 p.m.

COSC 310-101 COSC_O 310 101 Software Engineering
W2
Software Engineering
Lecture
In Person Learning
Tue Thu
3:30 p.m. - 5:00 p.m.

COSC 310-L03 COSC_O 310 L03 Software Engineering
W2
Software Engineering
Laboratory
In Person Learning
Fri
12:00 p.m. - 2:00 p.m.

COSC 320-101 COSC_O 320 101 Analysis of Algorithms
W2
Analysis of Algorithms
Lecture
In Person Learning
Tue Thu
11:00 a.m. - 13:30 p.m.

COSC 322-L01 COSC_O 322 L01 Introduction to Artificial Intelligence
W2
Introduction to Artificial Intelligence
Lecture
In Person Learning
Mon Wed
2:00 p.m. - 3:00 p.m.

COSC 322-L02 COSC_O 322 L02 Introduction to Artificial Intelligence
W2
Introduction to Artificial Intelligence
Laboratory
In Person Learning
Mon
8:00 a.m. - 10:00 a.m.

COSC 322-L03 COSC_O 322 L03 Introduction to Artificial Intelligence
W2
Introduction to Artificial Intelligence
Laboratory
In Person Learning
Tue
4:00 p.m. - 6:00 p.m.

COSC 322-L04 COSC_O 322 L04 Introduction to Artificial Intelligence
W2
Introduction to Artificial Intelligence
Laboratory
In Person Learning
Mon
12:00 p.m. - 2:00 p.m.

COSC 322-L05 COSC_O 322 L05 Introduction to Artificial Intelligence
W2
Introduction to Artificial Intelligence
Laboratory
In Person Learning
Thu
2:00 p.m. - 4:00 p.m.

COSC 328-001 COSC_O 328 001 Introduction to Networks
W2
Introduction to Networks
Lecture
In Person Learning
Wed Fri
2:00 p.m. - 3:30 p.m.

COSC 341-101 COSC_O 341 101 Human Computer Interaction
W2
Human Computer Interaction
Lecture
In Person Learning
Mon
9:30 a.m. - 11:00 a.m.

COSC 360-001 COSC_O 360 001 Web Programming
W2
Web Programming
Lecture
In Person Learning
Wed Fri
8:00 a.m. - 9:30 a.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSC 360-L01</td>
<td>COSC 360-L01</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 360-L02</td>
<td>COSC 360-L02</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 360-L03</td>
<td>COSC 360-L03</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 360-L04</td>
<td>COSC 360-L04</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 360-L05</td>
<td>COSC 360-L05</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 360-L06</td>
<td>COSC 360-L06</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 407-L01</td>
<td>COSC 407-L01</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 407-L02</td>
<td>COSC 407-L02</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 407-L03</td>
<td>COSC 407-L03</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 407-L04</td>
<td>COSC 407-L04</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 407-L05</td>
<td>COSC 407-L05</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 407-L06</td>
<td>COSC 407-L06</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
<tr>
<td>COSC 634-003</td>
<td>COSC 634-003</td>
<td>3-0-0</td>
<td>Design and implementation of parallel programs including theoretical computer models, parallel architectures (distributed, multicores, GPUs), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-2-0] Prerequisite: COSC 507.</td>
</tr>
</tbody>
</table>

**Course Details:**
- **Lecture:** In Person Learning
- **Laboratory:** In Person Learning

**Course Schedule:**
- **8:00 a.m. - 9:30 a.m.**
- **10:00 a.m. - 12:00 p.m.**
- **2:00 p.m. - 4:00 p.m.**
- **4:00 p.m. - 6:00 p.m.**
- **8:00 a.m. - 10:00 a.m.**
- **10:00 a.m. - 12:00 p.m.**
- **12:00 p.m. - 2:00 p.m.**
- **2:00 p.m. - 4:00 p.m.**
- **4:00 p.m. - 6:00 p.m.**
- **8:00 a.m. - 10:00 a.m.**

**Course Locations:**
- **Mon:** Laboratory
- **Tue:** Lecture
- **Wed:** Laboratory
- **Thu:** Laboratory
- **Fri:** Laboratory
- **Sat:** Lecture

**Course Notes:**
- **Prerequisites:**
  - COSC 221, COSC 222, and COSC 507 [3-2-0]
  - COSC 222, COSC 210 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]
  - COSC 407 or COSC 507 [3-2-0]

**Course Materials:**
- **Database System Implementation**
- **Web Programming**
- **Introduction to Parallel Computing**
- **Computer Graphics**
COSC_O 419 B B_101 Topics in Computer Science W2 Advanced or specialized topics in computer science. Consult the department for the specific topic to be offered in any given year. Credit will be granted for only one of COSC 419 or COSC 519 when the subject matter is of the same nature. Prerequisite: Fourth-year standing. Experiential In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

COSC_O 419 O_O_101 Topics in Computer Science W2 Advanced or specialized topics in computer science. Consult the department for the specific topic to be offered in any given year. Credit will be granted for only one of COSC 419 or COSC 519 when the subject matter is of the same nature. Prerequisite: Fourth-year standing. Experiential In Person Learning Tue Thu 11:00 a.m. - 11:30 a.m.

COSC_O 444-011 COSC_O 444 101 Computer Vision W2 Specialized topics in computer science. Credit will be granted for only one of COSC 419 or COSC 519 when the subject matter is of the same nature. Independent Study In Person Learning Arranged Arranged

COSC_O 448_A_101 COSC_O 448 A A_101 Directed Studies in Computer Science W2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC_O 448_A_102 COSC_O 448 A A_102 Directed Studies in Computer Science W2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC_O 448_C_101 COSC_O 448 C C_101 Directed Studies in Computer Science W2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC_O 448_C_102 COSC_O 448 C C_102 Directed Studies in Computer Science W2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC_O 519_B_101 COSC_O 519 B B_101 Topics in Computer Science W2 Specialized topics in computer science. Credit will be granted for only one of COSC 419 or COSC 519 when the subject matter is of the same nature. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

COSC_O 519_L_001 COSC_O 519 I I_001 Topics in Computer Science W2 Specialized topics in computer science. Credit will be granted for only one of COSC 419 or COSC 519 when the subject matter is of the same nature. Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

COSC_O 544-101 COSC_O 544 101 Computer Vision W2 Specialized topics in computer science. Credit will be granted for only one of COSC 419 or COSC 519 when the subject matter is of the same nature. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.


COSC_O 580_E_101 COSC_O 580 E E_101 Graduate Seminar W2 Presentation and discussion of recent results in the Computer Science literature. Pass/Fail. Seminar In Person Learning Fri 8:00 a.m. - 11:00 a.m.


CRWR_O 150-002 CRWR_O 150 002 Introduction to Writing Poetry and Non-Fiction W2 Introduction to composition and experimentation in the genres of poetry and creative non-fiction. Students will develop a working knowledge of modern aesthetics in poetry and creative non-fiction, as well as an objective appreciation of their own voice in the context of those aesthetics. No more than 6 credits in total will be granted for CRWR 150, CRWR 180: [1-0-0] or [1-0-1] or [1-0-2] or [1-0-0] or [2-0-0]. Lecture In Person Learning Thu 5:30 p.m. - 8:30 p.m.

CRWR_O 180-101 CRWR_O 180 101 Introduction to Writing Fiction and Drama W2 Introduction to composition and experimentation in the genres of fiction and drama. Students will develop a working knowledge of modern aesthetics in fiction and drama, as well as an objective appreciation of their own voice in the context of those aesthetics. No more than 6 credits in total will be granted for CRWR 180, CRWR 181: [2-0-0] or [3-0-0] or [2-0-1]. Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

CRWR_O 218-001 CRWR_O 218 001 Intermediate Workshop in Creative Writing: Poet W2 Intermediate creative writing course. Students are instructed and guided in the writing of poetry, are encouraged to pursue experimentation in poetry, and will participate in the feedback and critique sessions that constitute the workshop method. Prerequisite: CRWR 150. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

CRWR_O 218-101 CRWR_O 218 101 Intermediate Workshop in Creative Writing: Non-No W2 Intermediate creative writing course. Students are instructed and guided in the writing of creative non-fiction, are encouraged to pursue experimentation in creative non-fiction, and will participate in the feedback and critique sessions that constitute the workshop method. Prerequisite: One of CRWR 150, ENGL 113, ENGL 114. Lecture Online Learning Mon Wed 3:30 p.m. - 5:00 p.m.

CRWR_O 280-001 CRWR_O 280 001 Theory and Practice of Creative Writing W2 Recommended for students taking Creative Writing, English, Visual Arts, or Performance courses. Introduces students to the history of contemporary forms of creative writing. Students will write on problems of aesthetics and practice various forms. Prerequisite: Two of ENGL 112, ENGL 113, ENGL 150, ENGL 151, ENGL 153, CRWR 150, CRWR 180. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

CRWR_O 384-101 CRWR_O 384 101 Spoken Word W2 Advanced workshop in writing and performing Spoken Word texts. Restricted to students with at least third-year standing. Credit will be granted for only one of CULT 384, CRWR 384, THTR 384 or CULT 38B: [3-0-0] Prerequisite: 8 credits of Creative Writing and/or Theatre. For students without prerequisites, portfolio submission is also required. Equivalency: THTR 384, CULT 384. Lecture In Person Learning Wed 11:00 a.m. - 2:00 p.m.

CRWR_O 385-101 CRWR_O 385 101 Writing for Children W2 Advanced workshop in writing for children and young adults. Restricted to students with at least third-year standing. Restricted to Creative Writing Majors and Minors except with permission of the department. Credit will be granted for only one of CRWR 385 and CRWR 382 when the subject matter is of the same nature. Prerequisite: Either (a) two of CRWR 205, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260 or (b) two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors and non-minors portfolio submission is also required. Lecture In Person Learning Fri 8:00 a.m. - 11:00 a.m.
Intensive manuscript production in one or two major genres: fiction, poetry, drama, or creative non-fiction. As students begin to shape their portfolios, they will be asked to place their work in a contemporary aesthetic context. [3-0-0] or [2-2-0] Prerequisite: 6 credits from CRWR 181, CRWR 282, CRWR 382, or CRWR 471 with a minimum grade of 72% in each of these two courses. For non-majors and non-minors: portfolio submission also required. Lecture In Person Learning Mon 11:00 a.m. - 12:00 p.m.

CRWR 473-101 CRWR_O 473 101 Writing and Community Learning W2 Applied community learning aspects of creative writing. Develops specialized skills in successful professional practice by working in interdisciplinary and collaborative teams with community partners. Field trips will be required. [0-0-2] Prerequisite: Third-year standing. Lecture In Person Learning Tue Thu 12:00 p.m. - 2:00 p.m.

CRWR 475-001 CRWR_O 475 001 Preparing for a Career as a Writer W2 Developing professional skills such as sustainable writing practices, preparing work for submission, marketing and promotion. Careers that are within and adjacent to creative writing will also be discussed. Restricted to CRWR Majors except with permission from instructor. [2-0-0] Lecture In Person Learning Fri 11:00 a.m. - 1:00 p.m.

CULT 220-101 CULT_O 220 101 Media and Popular Cultures in Global Context W2 Introduction to media and cultural studies in a global context, specifically the critical analysis of cultural texts, cultural industries, and media audiences. [3-0-0] Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

CULT 220-102 CULT_O 220 102 Media and Popular Cultures in Global Context W2 Introduction to media and cultural studies in a global context, specifically the critical analysis of cultural texts, cultural industries, and media audiences. [3-0-0] Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

CULT 222-100 CULT_O 222 100 Media and Popular Cultures in Global Context W2 Introduction to media and cultural studies in a global context, specifically the critical analysis of cultural texts, cultural industries, and media audiences. [3-0-0] Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

CULT 222-101 CULT_O 222 101 Cultural Studies Practicum W2 Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [3-0-0] Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

CULT 222-102 CULT_O 222 102 Cultural Studies Practicum W2 Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [3-0-0] Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

CULT 222-103 CULT_O 222 103 Cultural Studies Practicum W2 Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [3-0-0] Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

CULT 230-101 CULT_O 230 101 Foundations: Interdisciplinary Theory and Methods W2 Introduction to film and other screen-based media as narrative, with a focus on both formal and ideological elements. Credit will be granted for only one of CULT 210 or ENGL 315. [3-0-0] Prerequisite: 3 credits of first-year CULT and 3 credits of first-year ENGL. Equivalency: ENGL 215 Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

CULT 272-001 CULT_O 272 001 Feminism and Environment W2 Exercises contributions of feminist theories and practice to understanding and addressing environmental change. Foregrounds the role of decolonial, anti-racist, disability justice and queer feminist perspectives in environmental justice, policy, art, and activism. Credit will be granted for only one of CULT 272 or GWST 272. [3-0-0] Prerequisite: 3 credits of first-year CULT or SUST 104. Equivalency: GWST 272 Lecture In Person Learning Tue 2:00 p.m. - 3:30 p.m.

CULT 272-002 CULT_O 272 002 Feminism and Environment W2 Exercises contributions of feminist theories and practice to understanding and addressing environmental change. Foregrounds the role of decolonial, anti-racist, disability justice and queer feminist perspectives in environmental justice, policy, art, and activism. Credit will be granted for only one of CULT 272 or GWST 272. [3-0-0] Prerequisite: 3 credits of first-year CULT or SUST 104. Equivalency: GWST 272 Discussion In Person Learning Thu 11:00 a.m. - 12:30 p.m.

CULT 275-101 CULT_O 275 101 Foundations: Interdisciplinary Theory and Methods W2 A critical study of the cultural influence of the Internet on everyday life. With different topics, this course may be taken more than once for credit. No more than 9 credits in total will be granted for CULT 375, ENGL 375, or any combination thereof. Credit will be granted for only one of CULT 312 and ENGL 312 when the subject matter is of the same nature. Prerequisite: Third-year standing. Equivalency: DHK 312 Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

CULT 312-A_002 CULT_O 312 A_002 Internet Culture W3 Theory and practice from the point of view of producer/writer/director. Course culminates in the creation of a short-form documentary. Credit will be granted for only one of CULT 317 or FILM 371. [2-2-0] Prerequisite: One of USA 106, USA 263, FILM 263, and third-year standing or permission of the instructor. Equivalency: FILM 371 Approaches to the interdisciplinary field of settler colonial studies in Canadian and comparative contexts in relation to literature, film, and other forms of cultural production. Examines the role of representation, narrative, and discourse in settler, colonization, and decolonization. Credit will be granted for only one of ENGL 385 or CULT 313. Prerequisite: 3 credits of 200-level CULT. CULT 250 or ENGL 234 is recommended. Equivalency: ENGL 385 Lecture In Person Learning Tue 11:00 a.m. - 12:00 p.m.

CULT 317-001 CULT_O 317 001 Digital Documentary Production W2 Critical examination of documentary practices, including museums, monuments, and heritage sites, specifically in terms of the construction of place, community, and identity. Credit will be granted for only one of CULT 380 or CMCM 380. Prerequisite: Third-year standing. CULT 250 or CULT 275 recommended. Equivalency: CMCM 380 Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

CULT 318-101 CULT_O 318 101 Public Memory, Commemoration, and Identity W2 Advanced studio course in digital and film-based photography. Emphasis on photography as an artistic tool. This course may be taken twice for a maximum of 6 credits. Students in the Major/Combined Major/Minor in CULT can apply no more than 6 credits in total of CULT 310, USA 362, or any combination thereof to their degree. Prerequisite: All of USA 244, USA 256. 0-0 Prerequisite: One of USA 206, USA 266, USA 268, USA 271, or permission of the instructor. Note: For USA 244, CULT students require permission of instructor. Equivalency: USA 362 Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.

CULT 322-002 CULT_O 322 002 Advanced Practice in Photography W2 Advanced interdisciplinary course addressing the importance of technology-based approaches in contemporary art, with emphasis placed upon the formation of an idea and the media most appropriate to its expression. Students in the Major/Combined Major/Minor in CULT can apply no more than 6 credits in total of CULT 382, USA 382, or any combination thereof to their degree. Prerequisite: One of USA 206, USA 266, USA 268, USA 271, or permission of the instructor. Equivalency: USA 382 Lecture In Person Learning Mon Wed 11:00 a.m. - 2:00 p.m.

CULT 324-101 CULT_O 324 101 Spoken Word W2 Advanced workshop in writing and performing Spoken Word texts. Credit will be granted for only one of CULT 384, CULT 388, CRWR 384 or THTR 384. [0-0-3] Prerequisite: 6 credits of Creative Writing and/or Theatre. Third-year standing. Equivalency: THTR 384 CRWR 384 Lecture In Person Learning Wed Fri 10:00 a.m. - 12:00 p.m.
CULT_O 400-L_101  CULT_O 400  L_101  Topics in Popular Culture  W2  Focus on media such as music, film, music videos, television, advertising, and the Internet. No more than 9 credits in total will be granted for CULT 400, ENGL 493, or any combination thereof. [3-0-0] Prerequisite: 3 credits of 300-level CULT. CULT 210, CULT 211, and/or CULT 270 recommended. Equivalency: ENGL 493  Lecture  In Person Learning  Tue Thu  2:00 p.m. – 3:30 p.m.

CULT_O 400-M_101  CULT_O 400  M_101  Topics in Popular Culture  W2  Focus on media such as music, film, music videos, television, advertising, and the Internet. No more than 9 credits in total will be granted for CULT 400, ENGL 493, or any combination thereof. [3-0-0] Prerequisite: 3 credits of 300-level CULT. CULT 210, CULT 211, and/or CULT 270 recommended. Equivalency: ENGL 493  Lecture  In Person Learning  Fri  8:00 a.m. – 11:00 a.m.

CULT_O 400-N_101  CULT_O 400  N_101  Topics in Popular Culture  W2  Focus on media such as music, film, music videos, television, advertising, and the Internet. No more than 9 credits in total will be granted for CULT 400, ENGL 493, or any combination thereof. [3-0-0] Prerequisite: 3 credits of 300-level CULT. CULT 210, CULT 211, and/or CULT 270 recommended. Equivalency: ENGL 493  Lecture  In Person Learning  Wed  11:00 a.m. – 2:00 p.m.

CULT_O 401-A_101  CULT_O 401  A_101  Topics in Media Studies  W2  In-depth study of contemporary media phenomena and practices. With different topics, this course may be taken more than once for credit. Prerequisite: 3 credits of 200-level CULT.  Lecture  In Person Learning  Mon  5:00 p.m. – 8:00 p.m.

CULT_O 460-101  CULT_O 460  101  Posthumanism and Critical Animal Studies  W2  Contemporary theories in the field of critical animal studies via ecofeminism, literary studies, philosophy and history with the aim of considering the interconnectedness of species, race and sexism. Particular attention will be paid to ecofeminism and the ethics of care in regards to the treatment of animals. Credit will be granted for only one of CULT 460 or ENGL 457. [3-0-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Lecture  In Person Learning  Mon Wed  5:00 p.m. – 6:30 p.m.

CULT_O 491-101  CULT_O 491  101  Black Intellectual Traditions  W2  Intellectual influences on, and responses to, Black experiences in our modern world. Credit will be granted for only one of CULT 461 or ENGL 491. Prerequisite: Third-year standing. Equivalency: ENGL 491  Lecture  In Person Learning  Tue Thu  11:00 a.m. – 12:30 p.m.

CULT_O 499-101  CULT_O 499  101  Community-Engaged Research in Cultural Studies  W2  Develops professional skills in research, collaboration, and communication. Students work in collaborative teams to complete projects that support the work of community partners. Projects vary from year to year. Students must arrange their own transportation to/from Kelowna area required off-campus meetings. 65 contact hours of class and community partner interaction. Prerequisite: Permission of the Cultural Studies program. Preference will be given to students enrolled as Major, Combined Major, or Minor in CULT.  Independent Study  Hybrid Learning  Fri  2:00 p.m. – 5:00 p.m.

DATA_O 502-001  DATA_O 502  001  Curriculum Issues and Theories  W2  Curriculum theories and issues are explored through a review of literature (historical and contemporary) and critical reflection on existing practices. Provides a basis for examining knowledge claims, beliefs and assumptions underpinning contemporary understandings and practices of curriculum.  Lecture  Online Learning  Mon (Alternate weeks)  4:00 p.m. – 5:00 p.m.

DATA_O 501-101  DATA_O 501  101  Making Predictions with Data  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Wed Fri  2:00 p.m. – 3:30 p.m.

DATA_O 501-102  DATA_O 501  102  Making Predictions with Data  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Thu  8:00 a.m. – 9:00 a.m.

DATA_O 501-L3A  DATA_O 501  L3A  Making Predictions with Data  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Fri  9:00 a.m. – 10:00 a.m.

DATA_O 501-L3C  DATA_O 501  L3C  Making Predictions with Data  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Fri  1:00 p.m. – 2:00 p.m.

DATA_O 505-L2D  DATA_O 505  L2D  Making Predictions with Data  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Wed  12:00 p.m. – 1:00 p.m.

DATA_O 505-L2A  DATA_O 505  L2A  Introduction to Data Analytics  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Fri  10:00 a.m. – 12:00 p.m.

DATA_O 505-L2B  DATA_O 505  L2B  Introduction to Data Analytics  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Tue  12:00 p.m. – 2:00 p.m.

DATA_O 505-L2C  DATA_O 505  L2C  Introduction to Data Analytics  W2  Techniques for computation, analysis, and visualization of data using software. Manipulation of small and large data sets. Databases. Automation using scripting. Real-world applications from life sciences, physical sciences, economics, engineering, or psychology. No prior computing background is required. Cannot be used for credits toward a major in Computer Science, Data Science, Mathematics, or Statistics. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Equivalency: ENGL 457  Laboratory  In Person Learning  Fri  8:00 a.m. – 10:00 a.m.

DATA_O 535-101  DATA_O 535  101  Applied Time Series and Forecasting  W2  Trends, stationary and nonstationary time series models, forecasting, seasonal models. [3-0-0] Prerequisite: One of STAT 205, STAT 236.  Lecture  In Person Learning  Tue Thu  5:00 p.m. – 6:30 p.m.
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DIHU_155-T2H  DIHU_1  155  T2H  Writing and Making with Technology in the Hum W2  ENGL 155  Discussion  In Person Learning  Wed  5:00 p.m. - 6:00 p.m.

A critical study of the cultural influence of the internet on everyday life. With different topics, this course may be more than once for credit. No more than 9 credits in total will be granted for DHU 312, CLT 312, or any combination thereof. Credit will be granted for only one of DHU 312 and CLT 312 when the subject matter is of the same nature. Prerequisite: Third-year standing. Equivalency: CLT 313

DIHU_312-A_002  DIHU_1  312  A  A_002  Internet Culture  W3  Discussion  Online Learning  Mon Wed  12:30 p.m. - 1:00 p.m.

An examination of interrelated arts, visual cultures and texts in South Asia (15th to 19th c) within their historical and cultural contexts. Topics include the rise of the multicultul Maghul Empire, the roles of Hinduism, Islam, and Buddhism, and encounters with Renaissance and Colonial Europe. Digital art historical approaches will normally be used, though no computing experience is required. Credit will be granted for only one of DHU 375, ARTH 375, or WRLD 375. Prerequisite: Third-year standing. Equivalency: ARTH 375, WRLD 375

DIHU_375-001  DIHU_1  375  001  Encountering India: The Age of the Maghul  W3  Discussion  In Person Learning  Wed  6:00 p.m. - 7:30 p.m.

Study of a particular topic in digital humanities. With different topics this course may be more than once for credit. Credit will be granted for only one of DHU 409, CULT 409 and ENGL 409 when the subject matter is of the same nature. Prerequisite: 3 credits of 100-level CLT, DHU, ENGL, or FILM 100, and Third-year standing.

DIHU_409-B_101  DIHU_1  409  B  B_101  Topics in Digital Humanities  W3  Equivalency: ENGL400, CULT409  Discussion  In Person Learning  Mon  5:00 p.m. - 6:00 p.m.

Development of advanced academic communication and composition skills: writing and grammar; reading comprehension and proficiency; comprehension and oral fluency; intercultural communication. Students participate in a variety of complex academic activities and situations involving multiple purposes and participants. Twelve weeks (140 hours). Prerequisite: Successful completion of EAP 105 or minimum English language competence level (see English Language Proficiency Tests at http://kanagame.calber.edu/admissions/english-language-admission-standard/english-language-profiency-tests-and-programs). Registration limited to students in the English Foundation Program.

EAP_104-101  EAP_1  104  101  English for Academic Purposes Level IV  W2  Lecture  In Person Learning  Mon Tue Wed Thu Fri  8:00 a.m. - 11:00 a.m.

Prerequisites: CULT 208, or ENGL 209. Prerequisite: Third-year standing. Equivalency: CULT 208

ECON_101-101  ECON_1  101  101  Principles of Microeconomics  W2  Elements of theory and Canadian policy and institutions concerning the economics of markets and market behaviour, prices and costs, exchange and trade, competition and monopoly, distribution of income. [3-0-1] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_101-102  ECON_1  101  102  Principles of Microeconomics  W2  Elements of theory and Canadian policy and institutions concerning the economics of growth and business cycles, national income accounting, interest and exchange rates, money and banking, the balance of trade. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_102-101  ECON_1  102  101  Principles of Macroeconomics  W2  Elements of theory and Canadian policy and institutions concerning the economics of growth and business cycles, national income accounting, interest and exchange rates, money and banking, the balance of trade. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_102-102  ECON_1  102  102  Principles of Macroeconomics  W2  Elements of theory and Canadian policy and institutions concerning the economics of growth and business cycles, national income accounting, interest and exchange rates, money and banking, the balance of trade. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_204-101  ECON_1  204  101  Intermediate Microeconomic Analysis  W2  Microeconomy course at the post-principles level. Analysis of consumer behaviour, production, exchange, equilibrium of the firm under varying market structures, factor markets, economic efficiency, and welfare. [3-0-1] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_204-102  ECON_1  204  102  Intermediate Microeconomic Analysis  W2  Microeconomy course at the post-principles level. Analysis of consumer behaviour, production, exchange, equilibrium of the firm under varying market structures, factor markets, economic efficiency, and welfare. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_204-T2A  ECON_1  204  T2A  Intermediate Microeconomic Analysis  W2  Microeconomy course at the post-principles level. Analysis of consumer behaviour, production, exchange, equilibrium of the firm under varying market structures, factor markets, economic efficiency, and welfare. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_204-T2B  ECON_1  204  T2B  Intermediate Microeconomic Analysis  W2  Microeconomy course at the post-principles level. Analysis of consumer behaviour, production, exchange, equilibrium of the firm under varying market structures, factor markets, economic efficiency, and welfare. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_205-101  ECON_1  205  101  Intermediate Macroeconomic Analysis  W2  Macroeconomy course at the post-principles level. Income and employment theory, monetary and fiscal policies, the impact of international trade and finance on the domestic economy, economic growth and fluctuations. [3-0-1] Prerequisite: ECON 102 and one of MATH 100, MATH 116.

ECON_205-102  ECON_1  205  102  Intermediate Macroeconomic Analysis  W2  Macroeconomy course at the post-principles level. Income and employment theory, monetary and fiscal policies, the impact of international trade and finance on the domestic economy, economic growth and fluctuations. [3-0-1] Prerequisite: ECON 102 and one of MATH 100, MATH 116.

ECON_205-T2A  ECON_1  205  T2A  Intermediate Macroeconomic Analysis  W2  Macroeconomy course at the post-principles level. Income and employment theory, monetary and fiscal policies, the impact of international trade and finance on the domestic economy, economic growth and fluctuations. [3-0-1] Prerequisite: ECON 102 and one of MATH 100, MATH 116.

ECON_221-101  ECON_1  221  101  Introduction to Strategic Thinking  W2  Game theory with applications drawn from many disciplines and the principles of strategic interactions. [3-0-0] Prerequisite: All of ECON 101, ECON 102.

ECON_221-102  ECON_1  221  102  Introduction to Strategic Thinking  W2  Game theory with applications drawn from many disciplines and the principles of strategic interactions. [3-0-0] Prerequisite: All of ECON 101, ECON 102.

ECON_221-103  ECON_1  221  103  Introduction to Strategic Thinking  W2  Game theory with applications drawn from many disciplines and the principles of strategic interactions. [3-0-0] Prerequisite: All of ECON 101, ECON 102.

ECON_235-101  ECON_1  235  101  Data and Statistics for Economics  W3  Elements of theory and Canadian policy and institutions concerning the economics of markets and market behaviour, prices and costs, exchange and trade, competition and monopoly, distribution of income. [3-0-1] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_255-101  ECON_1  255  101  Managerial Economics  W2  Elements of theory and Canadian policy and institutions concerning the economics of growth and business cycles, national income accounting, interest and exchange rates, money and banking, the balance of trade. [3-0-0] Prerequisite: ECON 101 and one of MATH 100, MATH 116.

ECON_308-101  ECON_1  308  101  Intermediate Microeconomics II  W2  Factor markets, general equilibrium, uncertainty and information, contract theory, externalities, public goods and welfare. [3-0-0] Prerequisite: ECON 204.

ECON_308-102  ECON_1  308  102  Intermediate Microeconomics II  W2  Factor markets, general equilibrium, uncertainty and information, contract theory, externalities, public goods and welfare. [3-0-0] Prerequisite: ECON 204.

ECON_320-101  ECON_1  320  101  Introduction to Mathematical Economics  W2  Application of single and multivariable calculus to economics. Includes comparative static analysis of household and firm behaviour as well as simple dynamic models. [3-0-1] Prerequisite: All of ECON 101, ECON 102 and one of MATH 101, MATH 142.

ECON_320-T2A  ECON_1  320  T2A  Methods of Empirical Research  W2  Techniques of empirical economic research. Simple and multiple regression, time series analysis, and simultaneous equation estimation. Students are required to undertake applied work. [3-0-1] Prerequisite: ECON 327.

ECON_328-101  ECON_1  328  101  Methods of Empirical Research  W2  Techniques of empirical economic research. Simple and multiple regression, time series analysis, and simultaneous equation estimation. Students are required to undertake applied work. [3-0-1] Prerequisite: ECON 327.
ECO_N 328-T2B  ECO_N 328  T2B  Methods of Empirical Research  W2

Techniques of empirical economics research. Simple and multiple regression, time series analysis, and simultaneous equation estimation. Students are required to undertake applied work. [3-0-0] Prerequisite: ECON 327. Discussion  In Person Learning  Mon  10:00 a.m. - 11:00 a.m.

ECO_N 331-101  ECO_N 331  101  World Economy since 1800  W2

Development of the world economy, from the onset of the Industrial Revolution around 1800 to the present. Broad causes of world economic development, interaction between economic forces and social institutions, and development of particular national economies. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Tue Thu  2:30 p.m. - 3:30 p.m.

ECO_N 339-T2B  ECO_N 339  101  Economics of Technological Change  W2

Application of economic analysis to technological change; impact of technological change on the growth and distribution of income; economic influences on the invention and diffusion of technology; interaction between technology, work, skills, and education; public policy toward technological change. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Tue Thu  12:30 p.m. - 2:00 p.m.

ECO_N 345-T01  ECO_N 345  101  Money and Banking  W2

Financial markets and financial institutions in theory and practice; structure and development of the Canadian financial system; development and theory of the regulation of the financial system; process of monetary control; theory and history of central banking and monetary policy. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Mon Wed  3:30 p.m. - 5:00 p.m.

ECO_N 352-T01  ECO_N 352  101  Public Sector Economics  W2

The government plays a pervasive role in the Canadian economy. The powerful tools of government policy - taxation, spending, borrowing, and regulation - affect the economics of every Canadian. This course applies the tools of economic analysis to the study of some of the most important aspects of public policy in these areas. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Mon Wed  5:00 p.m. - 6:30 p.m.

ECO_N 355-T01  ECO_N 355  101  International Trade  W2

The determinants of trade patterns, trade policy, tariff and non-tariff barriers to trade, political economy of protectionism, bilateral and multilateral trade disputes, trade liberalization, trade and development. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Experimental  In Person Learning  Wed Fri  9:30 a.m. - 11:00 a.m.

ECO_N 356-T01  ECO_N 356  101  International Finance  W2

Exchange rate policy regimes; international financial organizations; the interaction between monetary policy and exchange rate regimes; financial crises. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

ECO_N 380-T01  ECO_N 380  101  Labour Economics  W2

Canadian labour market. Labour supply, allocation of time among work and non-market activity, labour force participation, education and training. Determination of and effect of unions on wages and employment. Wage structure and differentials. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Tue Thu  11:00 a.m. - 12:30 p.m.

ECO_N 383-T01  ECO_N 383  101  Health Economics  W2

The role of economics in health, healthcare, and health policy. Topics include economic determinants of health, minority health and health equity, health economic evaluation, demand for healthcare and health insurance, health risk behaviours, and public policy and health outcomes. Credit will be granted for only one of ECON 383 or ECON 395. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

ECO_N 391-A_101  ECO_N 391  301  A A_101  Topics in Economics  W2

Examination of selected topics in current economic theory and/or policy. Topics vary each time the course is offered. With different topics, the course can be taken more than once for credit. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Mon Wed  11:00 a.m. - 1:30 p.m.

ECO_N 391-C_101  ECO_N 391  301  C C_101  Topics in Economics  W2

Examination of selected topics in current economic theory and/or policy. Topics vary each time the course is offered. With different topics, the course can be taken more than once for credit. [3-0-0] Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Tue Thu  3:30 p.m. - 5:00 p.m.

EDU_D 600-001  EDU_D 600  001  Culturally Responsive Leadership in a Diverse School  W3

Theoretical underpinnings for education leaders to think more deeply and consider issues involved in implementing social justice education and to respond to societal pressures around issues of equity, diversity, and inclusion. Seminar  Online Learning  Tue  5:00 p.m. - 8:00 p.m.

EDU_D 100-101  EDU_D 100  101  Controversial Issues in Education  W2

Students will examine basic and fundamental questions about educational policy and practice by critically examining a variety of controversial issues including, but not limited to, issues of equity, community, and individual rights and freedoms. [3-0-0] Prerequisite: Students must have at least 70% in English 12 or English 12 First Peoples; a 5 on the LPI; (c) a passing grade in ENGL 009; (d) or an acceptable equivalent. For a list of equivalency options consult the Current Students website at students.ok.ubc.ca/courses-money-enrolment/registration/first-year-english. Lecture  In Person Learning  Mon Wed  9:30 a.m. - 11:00 a.m.

EDU_D 100-102  EDU_D 100  101  Controversial Issues in Education  W2

Students will examine basic and fundamental questions about educational policy and practice by critically examining a variety of controversial issues including, but not limited to, issues of equity, community, and individual rights and freedoms. [3-0-0] Prerequisite: Students must have at least 70% in English 12 or English 12 First Peoples; a 5 on the LPI; (c) a passing grade in ENGL 009; (d) or an acceptable equivalent. For a list of equivalency options consult the Current Students website at students.ok.ubc.ca/courses-money-enrolment/registration/first-year-english. Lecture  In Person Learning  Mon Wed  9:30 a.m. - 11:00 a.m.

EDU_D 160-101  EDU_D 160  101  Mathematical Reasoning for Arts and Education  W2

An introduction to the distinctive manner in which core concepts and methods of scholarly inquiry are applied to education as a field of inquiry. Through a variety of hands-on learning activities, readings, seminars, discussions, and personal reflection students will explore the processes and products of inquiry. Restricted to students with at least third-year standing. [3-0-0] Lecture  In Person Learning  Thu  5:00 p.m. - 8:00 p.m.

EDU_D 300-101  EDU_D 300  101  Inquiry in Education  W2

Examines the nature of curriculum focusing on the humanities and languages. Opportunities and challenges of developing curriculum for schooling are considered within contemporary political, legal, moral, administrative, and policy contexts. Pass/Fail. Prerequisite: All of ECON 101, ECON 102. Lecture  In Person Learning  Mon Tue Wed Thu Fri  8:00 a.m. - 5:30 p.m.

EDU_D 436-001  EDU_D 436  001  Developing Curricular Vision for a Democratic Society  W2

Teaching and learning theory and practice relating to a holistic approach to well-being. Examining and interpreting the research on philosophical, psychological, physiological and political aspects of wellbeing. Pass/Fail. Prerequisite: EDUC 441. Lecture  In Person Learning  Mon Tue Wed Thu Fri  8:00 a.m. - 5:30 p.m.

EDU_D 441-P01  EDU_D 441  P01  Field Experience: Formative Practice  W2

Working collaboratively in a school context, mentor teachers and teacher candidates co-plan, co-teach and co-assess. Insight into the significance of personal practical knowledge by engaging in dialogue, observation, and reflection concerning why the mentor teacher orients practices in particular ways, using specific strategies, resources, and lesson sequences. Pass/Fail. Prerequisite: All of EDUC 440, EDUC 431. Corequisite: EDUC 436. Experimental  In Person Learning  Arranged  Arranged
EDUC_O 502-001  EDUC_O 502  001  Teacher as Researcher  W2  Aims to broaden and enhance educators’ research literacy skills and ability to read a range of empirical peer-reviewed findings that hold potential to shape their engagement in their coursework and their applied practice. Lecture  Online Learning  Arranged  Arranged

EDUC_O 528-001  EDUC_O 528  001  Theory and Practice in Inclusive Education  W2  An inquiry-oriented course designed for educators interested in inclusive aspects of special education. Participants will explore pedagogical, attitudinal, and systemic barriers to inclusion. Related theory and research-based inclusive approaches will serve as resources for individual and group inquiries. Lecture  In Person Learning  Sat (Alternate weeks)  9:10 a.m. - 4:00 p.m.

EDUC_O 598-101  EDUC_O 598  101  M.Ed. Seminar with Project  W2  Building on coursework completed during the master’s program, this course supports students in the development of their M.Ed. exit projects. It provides scaffolding for the conceptualization, development, and completion of projects that will meet or exceed the requirements for both graduate programs and teacher qualification standards. Pass/Fail. Independent Study  In Person Learning  Arranged  Arranged

EDUC_O 599-101  EDUC_O 599  101  Senior Seminar with Thesis  W2  Pass/Fail  Thesis  In Person Learning  Arranged  Arranged

EESC_O 101-101  EESC_O 101  101  Environmental Science  W2  A quantitative and scientific approach to the understanding of global energy, water and nutrient cycling; growth of human populations and their effects on the environment and ecosystem function. Functional understanding of modern environmental issues, and the requirements of, and opportunities for, sustainability. [3-0-0] Lecture  In Person Learning  Mon Wed Fri  4:00 p.m. - 5:00 p.m.

EESC_O 106-101  EESC_O 106  101  The Catastrophic Earth  W2  The causes, physical characteristics, and consequences of natural disasters such as earthquakes, volcanic eruptions, severe weather, landslides, tsunamis, floods, meteor impact, and mass extinctions. [3-0-0] Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

EESC_O 112-001  EESC_O 112  001  Environmental Earth Science  W2  Earth systems and environment: atmosphere, climate, water cycle, oceans, surface-water, groundwater, earth surface processes, soils, and biochemical cycling. Applications of environmental science to solving modern environmental problems. [3-3-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Lecture  In Person Learning  Tue Thu  3:30 p.m. - 5:00 p.m.

EESC_O 112-101  EESC_O 112  101  Environmental Earth Science  W2  Earth systems and environment: atmosphere, climate, water cycle, oceans, surface-water, groundwater, earth surface processes, soils, and biochemical cycling. Applications of environmental science to solving modern environmental problems. [3-3-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Laboratory  In Person Learning  Thu  11:00 a.m. - 2:00 p.m.

EESC_O 112-102  EESC_O 112  102  Environmental Earth Science  W2  Earth systems and environment: atmosphere, climate, water cycle, oceans, surface-water, groundwater, earth surface processes, soils, and biochemical cycling. Applications of environmental science to solving modern environmental problems. [3-3-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Laboratory  In Person Learning  Wed  11:00 a.m. - 2:00 p.m.

EESC_O 112-103  EESC_O 112  103  Environmental Earth Science  W2  Earth systems and environment: atmosphere, climate, water cycle, oceans, surface-water, groundwater, earth surface processes, soils, and biochemical cycling. Applications of environmental science to solving modern environmental problems. [3-3-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Laboratory  In Person Learning  Tue  11:00 a.m. - 2:00 p.m.

EESC_O 121-001  EESC_O 121  001  Earth History  W2  Origin of rocks, oceans, atmosphere and the record of life on Earth. Scientific methods of studying Earth history. Geologic time, dating methods, the stratigraphic record. Organic evolution, the fossil record, and extinctions. [3-2-0] Prerequisite: EESC 111 recommended. Lecture  In Person Learning  Mon Wed Fri  2:00 p.m. - 3:00 p.m.

EESC_O 121-101  EESC_O 121  101  Earth History  W2  Origin of rocks, oceans, atmosphere and the record of life on Earth. Scientific methods of studying Earth history. Geologic time, dating methods, the stratigraphic record. Organic evolution, the fossil record, and extinctions. [3-2-0] Prerequisite: EESC 111 recommended. Laboratory  In Person Learning  Wed  8:00 a.m. - 10:00 a.m.

EESC_O 121-102  EESC_O 121  102  Earth History  W2  Origin of rocks, oceans, atmosphere and the record of life on Earth. Scientific methods of studying Earth history. Geologic time, dating methods, the stratigraphic record. Organic evolution, the fossil record, and extinctions. [3-2-0] Prerequisite: EESC 111 recommended. Laboratory  In Person Learning  Mon  12:00 p.m. - 2:00 p.m.

EESC_O 201-001  EESC_O 201  001  Optical Mineralogy and Petrology  W2  Identification of common rock-forming minerals using the polarizing microscope. Use of minerals and rock textures as a means of determining the classification and petrogenesis of igneous and metamorphic rocks. [2-3-0] Prerequisite: One of EESC 111, EESC 200. Lecture  In Person Learning  Tue Thu  3:30 p.m. - 5:00 p.m.

EESC_O 201-101  EESC_O 201  101  Optical Mineralogy and Petrology  W2  Identification of common rock-forming minerals using the polarizing microscope. Use of minerals and rock textures as a means of determining the classification and petrogenesis of igneous and metamorphic rocks. [2-3-0] Prerequisite: One of EESC 111, EESC 200. Laboratory  In Person Learning  Tue Thu  8:00 a.m. - 11:00 a.m.

EESC_O 201-102  EESC_O 201  102  Optical Mineralogy and Petrology  W2  Identification of common rock-forming minerals using the polarizing microscope. Use of minerals and rock textures as a means of determining the classification and petrogenesis of igneous and metamorphic rocks. [2-3-0] Prerequisite: One of EESC 111, EESC 200. Laboratory  In Person Learning  Tue  11:00 a.m. - 2:00 p.m.

EESC_O 205-001  EESC_O 205  001  Introduction to Hydrology  W2  Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasis on surface water hydrology of western North America. Credit will be granted for only one of EESC 205 or GEOG 205. [3-3-0] Prerequisite: Either (a) two of EESC 101, EESC 111, EESC 112, EESC 200 or (b) all of GEOG 108, GEOG 109 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG205. Lecture  In Person Learning  Mon Wed  5:00 p.m. - 6:30 p.m.

EESC_O 205-101  EESC_O 205  101  Introduction to Hydrology  W2  Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasis on surface water hydrology of western North America. Credit will be granted for only one of EESC 205 or GEOG 205. [3-3-0] Prerequisite: Either (a) two of EESC 101, EESC 111, EESC 112, EESC 200 or (b) all of GEOG 108, GEOG 109 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG205. Laboratory  In Person Learning  Tue  11:00 a.m. - 2:00 p.m.

EESC_O 205-102  EESC_O 205  102  Introduction to Hydrology  W2  Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasis on surface water hydrology of western North America. Credit will be granted for only one of EESC 205 or GEOG 205. [3-3-0] Prerequisite: Either (a) two of EESC 101, EESC 111, EESC 112, EESC 200 or (b) all of GEOG 108, GEOG 109 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG205. Laboratory  In Person Learning  Thu  11:00 a.m. - 2:00 p.m.

EESC_O 212-101  EESC_O 212  101  Atmospheric Environments  W2  Physical principles underlying weather and climates. Thermal, moisture, and wind climates at scales from valley to the globe. Daily weather, air pollution, global change. Credit will be granted for only one of EESC 212 or GEOG 200. [3-3-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG2100. Lecture  In Person Learning  Mon Wed  11:00 a.m. - 12:30 p.m.
**EESC 304-101**

**Geologic Resources**

Lecture 212

Mon Wed

Physical principles underlying weather and climates. Thermal, moisture, and climate at scales from valleys to the globe. Daily weather, air pollution, global change. Credit will be granted for only one of EESC 212 or GEOG 208. (3-0-0) Prerequisite: Either (a) GEOG 108 and GEOG 109 or (b) two of GEOG 103, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG200.

**Laboratory In Person Learning** Wed

6:30 p.m. - 9:30 p.m.

**EESC 304-102**

**Geologic Resources**

Lecture 212

Mon Wed

Physical principles underlying weather and climates. Thermal, moisture, and climate at scales from valleys to the globe. Daily weather, air pollution, global change. Credit will be granted for only one of EESC 212 or GEOG 208. (3-0-0) Prerequisite: Either (a) GEOG 108 and GEOG 109 or (b) two of GEOG 103, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG200.

**Laboratory In Person Learning** Fri

2:00 p.m. - 5:00 p.m.

**EESC 304-001**

**Global Biogeochemistry**

Laboratory 309

Mon

Global forests, classification, silviculture, forest tenure systems, forest policy evolution, forest regulations, and the profession. Overview of forest disturbance impacts, eco-forestry, sustainable forest management, eco-certification, the role of information technologies and research. (3-0-0) Prerequisite: Either (a) two of BLOC 125, EESC 101, EESC 111, GEOG 108, GEOG 109 or (b) two of BLOC 125, EESC 111, EESC 112, GEOG 108, GEOG 109.

**Laboratory In Person Learning** Wed Fri

8:00 a.m. - 9:30 a.m.

**EESC 304-002**

**Global Biogeochemistry**

Laboratory 309

Wed

Global forests, classification, silviculture, forest tenure systems, forest policy evolution, forest regulations, and the profession. Overview of forest disturbance impacts, eco-forestry, sustainable forest management, eco-certification, the role of information technologies and research. (3-0-0) Prerequisite: Either (a) two of BLOC 125, EESC 101, EESC 111, GEOG 108, GEOG 109 or (b) two of BLOC 125, EESC 111, EESC 112, GEOG 108, GEOG 109.

**Laboratory In Person Learning** Wed Fri

8:00 a.m. - 9:30 a.m.

**EESC 309-101**

**Introduction Forest Science and Management**

Lecture 315

Wed

Origin, classification and interpretation of sediments and sedimentary rocks. Weathering, erosion, transportation, sedimentation, and lithification of clastic materials. Non-clastic sediments. Sedimentary environments, facies and stratigraphic methods. Credit will be granted for only one of EESC 356 or GEOG 356. (3-0-0) Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. EESC/GEOG 314 is recommended.

**Lecture In Person Learning** Wed

1:00 p.m. - 3:00 p.m.

**EESC 315-101**

**Environmental Impact Assessment: Techniques a W2**

Lecture 315

Wed

Environmental Impact Assessment: Techniques a W2

Practical techniques and methods for environmental impact assessment. Technical approaches, evaluation and estimation tools, and project management skills used for environmental assessment work. (3-0-2) Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. EESC/GEOG 314 is recommended.

**Lecture In Person Learning** Wed

3:00 p.m. - 5:00 p.m.

**EESC 315-102**

**Environmental Impact Assessment: Techniques a W2**

Lecture 315

Wed

Environmental Impact Assessment: Techniques a W2

Practical techniques and methods for environmental impact assessment. Technical approaches, evaluation and estimation tools, and project management skills used for environmental assessment work. (3-0-2) Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. EESC/GEOG 314 is recommended.

**Lecture In Person Learning** Wed

3:00 p.m. - 5:00 p.m.

**EESC 356-101**

**Stratigraphy and Sedimentology**

Lecture 356

Wed

Stratigraphy and Sedimentology

Origin, classification and interpretation of sediments and sedimentary rocks. Weathering, erosion, transportation, sedimentation, and lithification of clastic materials. Non-clastic sediments. Sedimentary environments, facies and stratigraphic methods. Credit will be granted for only one of EESC 356 or GEOG 356. (3-0-0) Prerequisite: One of EESC 121, EESC 222, GEOG 222. Equivalency: GEOG356.

**Lecture In Person Learning** Wed

1:00 p.m. - 3:00 p.m.

**EESC 356-001**

**Stratigraphy and Sedimentology**

Lecture 356

Wed

Stratigraphy and Sedimentology

Origin, classification and interpretation of sediments and sedimentary rocks. Weathering, erosion, transportation, sedimentation, and lithification of clastic materials. Non-clastic sediments. Sedimentary environments, facies and stratigraphic methods. Credit will be granted for only one of EESC 356 or GEOG 356. (3-0-0) Prerequisite: One of EESC 121, EESC 222, GEOG 222. Equivalency: GEOG356.

**Lecture In Person Learning** Wed

1:00 p.m. - 3:00 p.m.

**EESC 356-002**

**Stratigraphy and Sedimentology**

Lecture 356

Wed

Stratigraphy and Sedimentology

Origin, classification and interpretation of sediments and sedimentary rocks. Weathering, erosion, transportation, sedimentation, and lithification of clastic materials. Non-clastic sediments. Sedimentary environments, facies and stratigraphic methods. Credit will be granted for only one of EESC 356 or GEOG 356. (3-0-0) Prerequisite: One of EESC 121, EESC 222, GEOG 222. Equivalency: GEOG356.

**Laboratory In Person Learning** Wed

3:30 p.m. - 6:30 p.m.

**EESC 360-101**

**Geologic Resources**

Lecture 360

Wed

Geologic Resources

Mineral deposits, their geologic settings, genetic classification and models of formation. Metaliferous, non-metaliferous and industrial materials deposits. (3-3-0) Prerequisite: EESC 200 and EESC 201.

**Laboratory In Person Learning** Wed

9:30 a.m. - 11:00 a.m.

**EESC 360-100**

**Geologic Resources**

Lecture 360

Wed

Geologic Resources

Mineral deposits, their geologic settings, genetic classification and models of formation. Metaliferous, non-metaliferous and industrial materials deposits. (3-3-0) Prerequisite: EESC 200 and EESC 201.

**Laboratory In Person Learning** Wed

9:30 a.m. - 11:00 a.m.

**EESC 367-001**

**Energy Resources Management**

Lecture 367

Wed

Energy Resources Management

Integrated approach to freshwater resources and their place in environmental science. Topical issues with emphasis on management options and consequences. Required field trips during lab times. (3-0-0) Prerequisite: 3 credits of 200-level courses in BLOC, CHEM, EESC or GEOG courses cross listed with EESC, and third-year standing.

**Lecture In Person Learning** Wed

12:30 p.m. - 2:30 p.m.

**EESC 402-101**

**Freshwater Resources**

Lecture 402

Wed

Freshwater Resources

Integrated approach to freshwater resources and their place in environmental science. Topical issues with emphasis on management options and consequences. Required field trips during lab times. (3-0-0) Prerequisite: 3 credits of 200-level courses in BLOC, CHEM, EESC or GEOG courses cross listed with EESC, and third-year standing.

**Laboratory In Person Learning** Wed

8:00 a.m. - 11:00 a.m.
Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.
| ENGL O 155-T21 | ENGL O 153 | T21 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Thu 12:00 p.m. - 1:00 p.m. |
| ENGL O 155-T22 | ENGL O 153 | T22 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Mon 10:00 a.m. - 11:00 a.m. |
| ENGL O 155-T23 | ENGL O 153 | T23 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Thu 5:00 p.m. - 6:00 p.m. |
| ENGL O 155-T24 | ENGL O 153 | T24 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Tue 10:00 a.m. - 11:00 a.m. |
| ENGL O 155-T25 | ENGL O 153 | T25 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Thu 10:00 a.m. - 11:00 a.m. |
| ENGL O 155-T26 | ENGL O 153 | T26 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Tue 1:00 p.m. - 2:00 p.m. |
| ENGL O 155-T38 | ENGL O 153 | T28 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Wed 8:00 a.m. - 9:00 a.m. |
| ENGL O 155-T30 | ENGL O 153 | T30 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Wed 10:00 a.m. - 11:00 a.m. |
| ENGL O 155-T31 | ENGL O 153 | T31 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Mon 8:00 a.m. - 9:00 a.m. |
| ENGL O 155-T32 | ENGL O 153 | T32 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Thu 11:00 a.m. - 12:00 p.m. |
| ENGL O 155-T34 | ENGL O 153 | T34 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Wed 2:00 p.m. - 3:00 p.m. |
| ENGL O 155-T38 | ENGL O 153 | T38 | Readings in Narrative | W2 | Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research. Discussion In Person Learning Mon 9:00 a.m. - 10:00 a.m. |
| ENGL O 155-101 | ENGL O 155 | 101 | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Lecture In Person Learning Fri 2:00 p.m. - 4:00 p.m. |
| ENGL O 155-T3A | ENGL O 155 | T3A | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Fri 10:00 a.m. - 11:00 a.m. |
| ENGL O 155-T2B | ENGL O 155 | T2B | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Mon 8:00 a.m. - 9:00 a.m. |
| ENGL O 155-T2C | ENGL O 155 | T2C | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Wed 1:00 p.m. - 2:00 p.m. |
| ENGL O 155-T2D | ENGL O 155 | T2D | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Tue 5:00 p.m. - 6:00 p.m. |
| ENGL O 155-T2E | ENGL O 155 | T2E | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Fri 4:00 p.m. - 5:00 p.m. |
| ENGL O 155-T2F | ENGL O 155 | T2F | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Mon 9:00 a.m. - 10:00 a.m. |
| ENGL O 155-T2G | ENGL O 155 | T2G | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Wed 10:00 a.m. - 11:00 a.m. |
| ENGL O 155-T2H | ENGL O 155 | T2H | Writing and Making Technology in the Humanities | W2 | Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115 Discussion In Person Learning Wed 5:00 p.m. - 6:00 p.m. |
| ENGL O 202-101 | ENGL O 202 | 101 | Okanagan Syllis Literature: Concept and Frame | W2 | Examination of published research on a special topic with emphasis on rhetorical features and social contexts. Students will produce a final project that demonstrates their ability to reason, develop ideas, organize, write in an effective style, incorporate research, and review their work. Prerequisite: One of ENGL 101, INDG 101. Equivalency: INDD2020 Lecture Online Learning Arranged Arranged |
| ENGL O 209-A_101 | ENGL O 209 | A_101 | Topics in Composition | W2 | Indigenous perspectives as demonstrated through oral story. Okanagan theory and philosophy through oral story; a systems-based Indigenous Peoples story approach to connection to land, ecology and society. Credit will be granted for only one of ENGL 202 or INDG 202. Prerequisite: One of INDG 101, INDG 102. Equivalency: INDD2020 Lecture Online Learning Mon Wed 11:00 a.m. - 12:30 p.m. |
ENGL 209-A 102  ENGL O 209  A  A_102  Topics in Composition  W2
Examination of published research on a special topic with emphasis on theoretical features and social contexts. Students will produce a final project that demonstrates their ability to reason, develop ideas, organize, write in an effective style, incorporate research, and revise their work. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Wed Fri 2:00 p.m. - 3:30 p.m.

ENGL 209-A 103  ENGL O 209  A  A_103  Topics in Composition  W2
Examination of published research on a special topic with emphasis on theoretical features and social contexts. Students will produce a final project that demonstrates their ability to reason, develop ideas, organize, write in an effective style, incorporate research, and revise their work. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Wed Fri 11:00 a.m. - 12:30 p.m.

ENGL 212-101  ENGL O 212  A  Children's Literature  W2
Historical survey of literature written for and about children, in genres such as poems, short stories, fairy tales, novels, and treatises, covering a full range of modes from didactic to realistic to fantasy. At least 25% of class time involves practice-based instruction in critical analysis, essay writing and research. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Tues Thu 9:30 a.m. - 11:00 a.m.

ENGL 215-101  ENGL O 215  A  Reading Screens  W2
Film and other screen-based media as narrative, with a focus on both formal and ideological elements. Credit will be granted for only one of ENGL 215 or CULT 210. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Equivalency: CULT 210

ENGL 216-101  ENGL O 221  A  Foundations: Literature in Historical Context 2  W2
Poetry, drama, fiction, and non-fiction prose from the eighteenth century to the present, with attention to the importance of history and changes in form for literary analysis. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Mon Wed 2:00 p.m. - 3:30 p.m.

ENGL 222-102  ENGL O 221  A  Foundations: Literature in Historical Context 2  W2
Poetry, drama, fiction, and non-fiction prose from the eighteenth century to the present, with attention to the importance of history and changes in form for literary analysis. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Wed Fri 11:00 a.m. - 12:30 p.m.

ENGL 227-101  ENGL O 230  A  The Bible in English Literature  W2
Biblical themes, figures, and images in English literature, with attention to English versions of the Bible. At least 25% of class time involves practice-based instruction in critical analysis, essay writing and research. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Mon Wed 11:00 a.m. - 12:30 p.m.

ENGL 229-101  ENGL O 250  A  Foundations: Interdisciplinary Theory and Methods  W2
Major trends in critical theory, with attention to the applications of theory in literary research. Credit will be granted for only one of ENGL 250 or CULT 275. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Equivalency: CULT 275

ENGL 251-101  ENGL O 251  A  African Literary Canon  W2
Significant texts and authors in modern African literature (in English) covering various regions, histories and cultures of the continent. At least 25% of class time involves practice-based instruction in critical analysis, essay writing and research. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture  In Person Learning  Mon Wed 11:00 a.m. - 12:30 p.m.

ENGL 315-4 101  ENGL O 333  E  E_101  Canadian Fiction  W2
One or more major themes and/or movements in Canadian fiction. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156, and third-year standing. Lecture  In Person Learning  Wed Fri 3:30 p.m. - 5:00 p.m.

ENGL 337-101  ENGL O 337  A  American Literature between the Wars  W2
Major movements and writers. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, and third-year standing. Recommended: One of ENGL 231 or ENGL 233. Lecture  In Person Learning  Mon Wed 5:00 p.m. - 6:30 p.m.

ENGL 344-B 101  ENGL O 344  B  B_101  Topics in Medieval Studies  W2
Addresses a range of topics in medieval texts, from genres in medieval literature (such as lyric poetry, romance, and fabliaux) to topics dealing with cultural issues. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156, and third-year standing. Lecture  In Person Learning  Tues Thu 12:30 p.m. - 2:00 p.m.

ENGL 352-001  ENGL O 352  A  Shakespeare: Earlier Works  W2
Examines Shakespeare's works before 1590. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, and third-year standing. Lecture  In Person Learning  Wed Fri 12:30 p.m. - 2:00 p.m.

ENGL 357-101  ENGL O 357  A  Restoration Drama and Culture  W2
Addresses English literature through interdisciplinary perspectives and practices, ranging from performance, to visual arts, to creative writing and comparative literature. This course may involve cross-disciplinary pedagogy, experiential learning, community-based learning and/or undergraduate research opportunities. With different topics, this course may be taken three times for credit. ENGL 394 and ENGL 395 must have different topics in order for students to receive credit for both courses. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, and third-year standing. Recommended: ENGL 234. Equivalency: CULT 251 Lecture  In Person Learning  Mon Wed 5:00 p.m. - 8:00 p.m.

ENGL 385-001  ENGL O 385  A  Settler Studies, Literature, and Culture  W2
Addresses English literature through interdisciplinary perspectives and practices, ranging from performance, to visual arts, to creative writing and comparative literature. This course may involve cross-disciplinary pedagogy, experiential learning, community-based learning and/or undergraduate research opportunities. With different topics, this course may be taken three times for credit. ENGL 394 and ENGL 395 must have different topics in order for students to receive credit for both courses. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, and third-year standing. Experimental Hybrid Learning  Fri 2:00 p.m. - 5:00 p.m.

ENGL 394-4 101  ENGL O 394  A  Interdisciplinary Studies in English Literature  W2
An examination of one or more genres, writers, forms, themes, or major trends in popular literature. May not be taken for credit toward the English major, minor, honours or combined major, or the English concentration in the BA, General Studies. With different topics, this course may be taken three times for credit, but it cannot be used as a prerequisite for 450-level ENGL courses. ENGL 395 and ENGL 394 must have different topics in order for students to receive credit for both courses. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, APSC 176, and third-year standing. Lecture  In Person Learning  Tues Thu 12:30 p.m. - 2:00 p.m.

ENGL 423-A 101  ENGL O 423  A  Approaches to 16th- and/or 17th-Century Literature  W2
Advanced topics in sixteenth- and/or seventeenth-century literature and culture. Prerequisite: 3 credits of 300-level ENGL. Seminar  In Person Learning  Mon 11:00 a.m. - 2:00 p.m.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ENGL 457-101</td>
<td>Posthumanist and Critical Animal Studies</td>
<td>3</td>
<td>APSC 246</td>
<td>Lecture Mon Wed 5:00 p.m. - 6:30 p.m.</td>
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<tr>
<td>ENGL 491-101</td>
<td>Topics in Historical Periods and Movements</td>
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<td>APSC 246</td>
<td>Lecture Tue Thu 11:00 a.m. - 1:30 p.m.</td>
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<td>Topics in Popular Culture</td>
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<td>APSC 246</td>
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<td>Topics in Popular Culture</td>
<td>3</td>
<td>APSC 246</td>
<td>Lecture Fri 8:00 a.m. - 11:00 a.m.</td>
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<td>ENGL 499-N</td>
<td>Topics in Popular Culture</td>
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<td>APSC 246</td>
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<tr>
<td>ENGR 305-201</td>
<td>Engineering Economic Analysis</td>
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<tr>
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<td>ENGR 315-T2D</td>
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<td>3</td>
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<td>Discussion Online Wed 11:00 a.m. - 12:00 p.m.</td>
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</table>
ENGR_O 315-T2E ENGR_O 315 T2F Systems and Control W2 Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. [3-2*-0] Prerequisite: APSC 256.
Discussion Online Learning Mon 4:00 p.m. - 5:00 p.m.

ENGR_O 320-201 ENGR_O 320 202 Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Lecture In Person Learning Mon Wed 6:30 p.m. - 8:00 p.m.

ENGR_O 320-202 ENGR_O 320 202 Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

ENGR_O 320-L2A ENGR_O 320 L2A Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Wed 10:00 a.m. - 12:00 p.m.

ENGR_O 320-L2B ENGR_O 320 L2B Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Wed (Alternate weeks) 4:00 p.m. - 6:00 p.m.

ENGR_O 320-L2C ENGR_O 320 L2C Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Wed (Alternate weeks) 12:00 p.m. - 2:00 p.m.

ENGR_O 320-L2D ENGR_O 320 L2D Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Wed (Alternate weeks) 12:00 p.m. - 2:00 p.m.

ENGR_O 320-L2E ENGR_O 320 L2E Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Fri (Alternate weeks) 2:00 p.m. - 4:00 p.m.

ENGR_O 320-L2F ENGR_O 320 L2F Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Fri (Alternate weeks) 2:00 p.m. - 4:00 p.m.

ENGR_O 320-L2G ENGR_O 320 L2G Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Wed (Alternate weeks) 8:00 a.m. - 10:00 a.m.

ENGR_O 320-L2H ENGR_O 320 L2H Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Wed (Alternate weeks) 8:00 a.m. - 10:00 a.m.

ENGR_O 320-L2I ENGR_O 320 L2I Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

ENGR_O 320-L2J ENGR_O 320 L2J Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

ENGR_O 320-L2K ENGR_O 320 L2K Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Fri (Alternate weeks) 12:00 p.m. - 2:00 p.m.

ENGR_O 320-L2L ENGR_O 320 L2L Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Laboratory In Person Learning Fri (Alternate weeks) 12:00 p.m. - 2:00 p.m.

ENGR_O 320-T2A ENGR_O 320 T2A Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Mon 11:00 a.m. - 12:00 p.m.

ENGR_O 320-T2B ENGR_O 320 T2B Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Fri 4:00 p.m. - 5:00 p.m.

ENGR_O 320-T2C ENGR_O 320 T2C Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Fri 4:00 p.m. - 5:00 p.m.

ENGR_O 320-T2D ENGR_O 320 T2D Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Fri 8:00 a.m. - 9:00 a.m.

ENGR_O 320-T2E ENGR_O 320 T2E Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Wed 8:00 a.m. - 9:00 a.m.

ENGR_O 320-T2F ENGR_O 320 T2F Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Thu 11:00 a.m. - 12:00 p.m.

ENGR_O 320-T2G ENGR_O 320 T2G Electromechanical Devices W2 Three-Phase AC power systems, DC and AC magnetic circuits, transformers, DC machines, principles of electromagnetic devices, synchronous machines, induction motors, and brushless DC motors. [3-2*-1] Prerequisite: APSC 255.
Discussion In Person Learning Tue 11:00 a.m. - 12:00 p.m.

Lecture In Person Learning Tue Thu 6:30 p.m. - 8:00 p.m.

ENGR_O 331-001 ENGR_O 331 001 Infrastructure Management I W2 Introduction to asset management, municipal infrastructure systems, performance and prioritization measures, data management, life cycle costing, decision support tools, integrated approach. [3-0-0] Corequisites: ENGR 320, ENGR 330.
Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

ENGR_O 332-201 ENGR_O 332 201 Surveying and GIS Analysis W2 Theory and application methods for measuring and representing objects of interest on, below, and over the earth’s surface, and for analyzing data to meet engineering design and operational objectives driven by socio-economic or environmental concerns of natural and engineered systems. [3-2*-0] Prerequisite: All of APSC 189, APSC 254.
Lecture In Person Learning Mon Wed 6:30 p.m. - 8:00 p.m.

ENGR_O 333-32A ENGR_O 333 32A Surveying and GIS Analysis W2 Theory and application methods for measuring and representing objects of interest on, below, and over the earth’s surface, and for analyzing data to meet engineering design and operational objectives driven by socio-economic or environmental concerns of natural and engineered systems. [3-2*-0] Prerequisite: All of APSC 189, APSC 254.
Laboratory In Person Learning Wed (Alternate weeks) 10:00 a.m. - 12:00 p.m.
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<td>ENGR 362-102</td>
<td>Digital Signal Processing I</td>
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ENGR, O 362-T2B ENGR, O 362 T2B Digital Signal Processing I W2 Discrete-time signals and systems, difference equations, sampling and aliasing, decimation and interpolation, quantization errors, z-transform, discrete Fourier transform, fast Fourier transform, implementation of discrete-time systems, finite and infinite impulse response filter design. [3-0-1] Prerequisite: APSC 246.
Discussion In Person Learning Mon 11:00 a.m. - 12:00 p.m.

ENGR, O 362-T2C ENGR, O 362 T2C Digital Signal Processing I W2 Discrete-time signals and systems, difference equations, sampling and aliasing, decimation and interpolation, quantization errors, z-transform, discrete Fourier transform, fast Fourier transform, implementation of discrete-time systems, finite and infinite impulse response filter design. [3-0-1] Prerequisite: APSC 246.
Discussion In Person Learning Thu 2:00 p.m. - 3:00 p.m.

ENGR, O 362-T2D ENGR, O 362 T2D Digital Signal Processing I W2 Discrete-time signals and systems, difference equations, sampling and aliasing, decimation and interpolation, quantization errors, z-transform, discrete Fourier transform, fast Fourier transform, implementation of discrete-time systems, finite and infinite impulse response filter design. [3-0-1] Prerequisite: APSC 246.
Discussion In Person Learning Thu 11:00 a.m. - 12:00 p.m.

Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

Discussion In Person Learning Tue 12:00 p.m. - 1:00 p.m.

Discussion In Person Learning Mon 1:00 p.m. - 2:00 p.m.

Discussion In Person Learning Thu 5:00 p.m. - 6:00 p.m.

ENGR, O 375-T2D ENGR, O 375 T2D Energy System Design W2 Primary-energy sources and carriers. Energy conversion. Analysis of thermal systems. Reacting systems and combustion. Thermal systems design including steam power plants, gas turbines, internal combustion engines, and refrigeration systems. [3-0-1] Prerequisite: All of APSC 252, APSC 253.
Discussion In Person Learning Tue 11:00 a.m. - 12:00 p.m.

Discussion In Person Learning Tue 11:00 a.m. - 12:00 p.m.

Discussion In Person Learning Thu 2:00 p.m. - 3:00 p.m.

ENGR, O 378-001 ENGR, O 378 001 Electromagnetics for Engineers W2 Maxwell's equations, time harmonic fields, plane waves in media, polarization, Fresnel equations, transmission lines, scattering parameters, the Smith Chart, and waveguides. [3-0-1] Prerequisite: APSC 278.
Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

ENGR, O 378-T2A ENGR, O 378 T2A Electromagnetics for Engineers W2 Maxwell's equations, time harmonic fields, plane waves in media, polarization, Fresnel equations, transmission lines, scattering parameters, the Smith Chart, and waveguides. [3-0-1] Prerequisite: APSC 278.
Discussion In Person Learning Thu 8:00 a.m. - 9:00 a.m.

ENGR, O 378-T2B ENGR, O 378 T2B Electromagnetics for Engineers W2 Maxwell's equations, time harmonic fields, plane waves in media, polarization, Fresnel equations, transmission lines, scattering parameters, the Smith Chart, and waveguides. [3-0-1] Prerequisite: APSC 278.
Discussion In Person Learning Fri 8:00 a.m. - 9:00 a.m.

ENGR, O 378-T2C ENGR, O 378 T2C Electromagnetics for Engineers W2 Maxwell's equations, time harmonic fields, plane waves in media, polarization, Fresnel equations, transmission lines, scattering parameters, the Smith Chart, and waveguides. [3-0-1] Prerequisite: APSC 278.
Discussion In Person Learning Tue 2:00 p.m. - 3:00 p.m.

ENGR, O 380-201 ENGR, O 380 201 Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Lecture In Person Learning Thu 8:00 a.m. - 9:30 a.m.

ENGR, O 380-T2A ENGR, O 380 T2A Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Discussion Online Learning Mon 10:00 a.m. - 11:00 a.m.

ENGR, O 380-T2B ENGR, O 380 T2B Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Discussion Online Learning Thu 2:00 p.m. - 3:00 p.m.

ENGR, O 380-T2C ENGR, O 380 T2C Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Discussion Online Learning Tue 11:00 a.m. - 12:00 p.m.

ENGR, O 380-T2D ENGR, O 380 T2D Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Discussion Online Learning Fri 3:00 p.m. - 4:00 p.m.

ENGR, O 380-T2E ENGR, O 380 T2E Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Discussion Online Learning Wed 2:00 p.m. - 3:00 p.m.

ENGR, O 380-T2F ENGR, O 380 T2F Design of Machine Elements W2 Product design methodology, static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, brakes, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.
Discussion Online Learning Wed 12:00 p.m. - 1:00 p.m.

ENGR, O 385-102 ENGR, O 385 102 Heat Transfer Applications W2 Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchangers. [3-2-1] Prerequisite: All of APSC 246, APSC 252.
Lecture In Person Learning Thu Tue 6:30 p.m. - 8:00 p.m.
Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Wed (Alternate weeks) 3:30 p.m. - 5:30 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Wed (Alternate weeks) 3:30 p.m. - 5:30 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Wed (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Wed (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 10:00 a.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Laboratory In Person Learning Thu 1:00 p.m. - 2:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Discussion In Person Learning Wed 11:00 a.m. - 12:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Discussion In Person Learning Mon 1:00 p.m. - 2:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Discussion In Person Learning Mon 12:00 p.m. - 1:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Discussion In Person Learning Tue 12:00 p.m. - 1:00 p.m.

Steady and transient conduction heat transfer, radiation heat transfer, convection heat transfer, introduction to heat exchanger. [3-2*-1] Prerequisite: All of APSC 248, APSC 252. Discussion In Person Learning Fri 10:00 a.m. - 11:00 a.m.

Engineering and innovation, business models, customer development, intellectual property, product development, customer validation, hypothesis testing, company positioning. Credit will be granted for only one of ENGR 411 or ENGR 511. [3-0-0] Prerequisite: Fourth-year B.A.Sc., B.A. COSC or B.Sc. COSC standing. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.


Smart city concept, smart city standardization, smart grid and energy management, Internet of Things and cloud computing for smart city, smart city lighting, intelligent transportation, technology enhanced infrastructure, water solutions, smart buildings and technology, data analytics in smart cities. [3-0-0] Prerequisite: Fourth-year B.A.Sc. standing. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

Concrete damage and deterioration mechanisms, assessment and instrumentation; repair and strengthening materials and techniques; design of structural strengthening systems. Credit will be granted for only one of ENGR 429 or ENGR 529. [3-0-0] Prerequisite: All of ENGR 325, ENGR 327. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

Management of the firm: strategic planning, designing, construction, productivity management, and project closure. Project delivery systems: traditional, construction management, and turnkey. Estimating, bidding, and bonding. Project control tools and procedures. Safety and quality control. Project Management. Credit will be granted for only one of ENGR 433 or ENGR 533. [3-0-0] Prerequisite: ENGR 303. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.
ENGR O 441-101  
**Advanced Water Treatment Processes**  
W2  
Theory and design of advanced drinking water treatment processes used for challenging source water conditions including advanced oxidation, membrane filtration, ultraviolet disinfection, and adsorption processes. Discussion of removal of emerging contaminants (e.g., pharmaceuticals), regulated and unregulated disinfection by-products, and current issues in potable water treatment. [3-0-0] Prerequisite: ENGR 447.  
Lecture  
In Person | Learning | Wed Fri  
2:00 p.m. - 3:30 p.m.

ENGR O 445-201  
**Design of Water and Wastewater Conveyance Sys**  
W2  
Sensing, actuation, sampling, analog-to-digital and digital-to-analog conversion, voice over IP, video codecs, audio codecs, multimedia communication protocols for IoT, wireless communication protocols for IoT. [3-2*-0] Prerequisite: ENGR 251.  
Lecture  
In Person | Learning | Wed Fri  
11:00 a.m. - 12:30 p.m.

ENGR O 453-101  
**Internet of Things**  
W2  
Three-phase AC/DC PWM inverter, converter modulation techniques, abc/dq reference frame theory, brushed DC machine drives, induction motor drives, permanent magnet AC machines, brushless dc motors and drive circuits. [3-2*-0] Prerequisite: ENGR 320.  
Lecture  
In Person | Learning | Mon Wed  
12:30 p.m. - 2:00 p.m.

ENGR O 453-LA  
**Internet of Things**  
W2  
Three-phase AC/DC PWM inverter, converter modulation techniques, abc/dq reference frame theory, brushed DC machine drives, induction motor drives, permanent magnet AC machines, brushless dc motors and drive circuits. [3-2*-0] Prerequisite: ENGR 320.  
Laboratory  
In Person | Learning | Mon (Alternate weeks)  
10:00 a.m. - 12:00 p.m.

ENGR O 453-L1B  
**Internet of Things**  
W2  
Three-phase AC/DC PWM inverter, converter modulation techniques, abc/dq reference frame theory, brushed DC machine drives, induction motor drives, permanent magnet AC machines, brushless dc motors and drive circuits. [3-2*-0] Prerequisite: ENGR 320.  
Laboratory  
In Person | Learning | Mon (Alternate weeks)  
10:00 a.m. - 12:00 p.m.

ENGR O 454  
**Tools and Applications in Environmental and Eng**  
W2  
Introduction to polymer science and technology, molecular structure of polymers, polymer synthesis, structure-property relationship in polymers, physical properties of polymers, reinforced polymers, polymer composites and nanocomposites, polymer characterization, polymer processing, and forming. [3-0-0] Prerequisite: All of APSC 259, APSC 260.  
Lecture  
In Person | Learning | Wed Fri  
11:00 a.m. - 12:30 p.m.

ENGR O 460  
**Polymer Engineering**  
W2  
Review of electromagnetic principles, waveguides, transmission lines, impedance matching, Smith chart, network characterization, and microwave engineering applications. [3-2*-0] Prerequisite: ENGR 378.  
Lecture  
In Person | Learning | Tue Thu  
11:00 a.m. - 12:30 p.m.

ENGR O 470  
**Microwave Engineering**  
W2  
Review of electromagnetic principles, waveguides, transmission lines, impedance matching, Smith chart, network characterization, and microwave engineering applications. [3-2*-0] Prerequisite: ENGR 378.  
Laboratory  
In Person | Learning | Mon (Alternate weeks)  
4:00 p.m. - 6:00 p.m.

ENGR O 470-LA  
**Microwave Engineering**  
W2  
Design and analysis of analog integrated circuits with emphasis on CMOS technology, MOS device physics and models, processing technology and layout, differential amplifiers, current mirrors, noise, feedback, opamp design and compensation, two-stage CMOS opamp design, switched-capacitor filters. [3-0-0] Prerequisite: ENGR 351.  
Lecture  
In Person | Learning | Wed Fri  
9:30 a.m. - 11:00 a.m.

ENGR O 474  
**Analog Integrated Circuits**  
W2  
Lecture  
In Person | Learning | Wed Fri  
9:30 a.m. - 11:00 a.m.

ENGR O 475-201  
**Materials Selection and Design**  
W2  
Discussion  
In Person | Learning | Thu (Alternate weeks)  
8:00 a.m. - 9:00 a.m.

ENGR O 478  
**Alternative Energy Systems**  
W2  
Introduction to the microcirculation; gas exchange in organs, including diffusion, perfusion and ventilation; surface energy in biological systems; principles of hemodynamics including vascular resistance and flow regimes at different levels of organs, tissues and cells; principles of tissue mechanics; introduction to tissue engineering; introduction to medical devices design and development. [3-0-0] Prerequisite: Fourth-year standing.  
Lecture  
In Person | Learning | Wed Fri  
11:00 a.m. - 12:30 p.m.

ENGR O 482  
**Biomedical Engineering I**  
W2  
Digital control theory and a brief review of classical control and its relationship to discrete systems. Discrete time systems, sampling, z transforms, pulse transfer function, stability in z domain, pole-placement control design and state estimation, discrete linear quadratic optimal control, introduction to system identification and Kalman Filter. Credit will be granted for only one of ENGR 457 or ENGR 482. [3-0-0] Prerequisite: ENGR 315.  
Lecture  
In Person | Learning | Wed Fri  
11:00 a.m. - 12:30 p.m.
ENGR_O 498-Q_001  ENGR_O 498  Q  Q_001  Special Topics in Engineering  Lecture  In Person  Learning  Thu Thu  2:30 p.m. - 3:30 p.m.

ENGR_O 498-Q_001  ENGR_O 498  Q  Q_001  Special Topics in Engineering  Lecture  In Person  Learning  Wed Wed  2:30 p.m. - 3:30 p.m.

ENGR_O 498-B_001  ENGR_O 498  R  R_001  Special Topics in Engineering  Lecture  In Person  Learning  Thu Thu  2:30 p.m. - 3:30 p.m.
Continuation of FILM 261. Further work on organizational, technical, creative, and critical skills required in video production. Provides experience in all stages of the production process, including pre-production, production, and post-production. Considers a variety of approaches to video, such as artist videos, music videos, and television productions. Credit will be granted for only one of FILM 271 or VISA 271. 

Theory and practice from the point of view of producer/director. Course culminates in the creation of a short form documentary. Credit will be granted for only one of FILM 371 or CULT 317. [2-2-0] Prerequisite: One of VISA 106, VISA 261, FILM 261, and Third-year standing or permission of the instructor. Equivalency: CULT 317

Continuation of Elementary French I. Completes level A1 of the Common European Framework of Reference for Languages (CEFRL). Not available to students who have completed French 12 and/or students who have a CEFRL level A1. The next level course series available is FREN 103-104. Prerequisite: FREN 102 or prior introductory French course at CEFRL Level A1.

Continuation of Elementary French I. Completes level A2 of the Common European Framework of Reference for Languages (CEFRL). Not available to students who have completed French 12 and/or students who have a CEFRL level A2. The next level course series available is FREN 112-113. Prerequisite: FREN 103 or prior introductory French course at CEFRL Level A2.

Continuation of Upper Elementary French I. Completes level A2 of the Common European Framework of Reference for Languages (CEFRL). Not available to students who have completed French 12 and/or students who have a CEFRL level A2. The next level course series available is FREN 122-123. Prerequisite: FREN 113 or prior introductory French course at CEFRL Level A2.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of French 12 Immersion or FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

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Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123 or French Immersion.

Consists of conversational and listening comprehension activities, review of grammar, and vocabulary expansion exercises. Students will be expected to participate actively in group activities and to give frequent oral presentations. Not available to students who have completed French 12 or Francophone students who have a CEFRL level B2 or higher. The next level courses available are FREN 346 and FREN 345. [3-1-0]
**Earth Systems: Landscape Dynamics**

**Landscape Dynamics**

**W2**

Principles and processes that govern the functions of the Earth's lithosphere and terrestrial geomorphology. Interactions between the lithospheric system and human activity. [3-2-0]

**Laboratory**

In Person Learning

**Fri**

12:00 p.m. - 2:00 p.m.

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**Earth Systems: Landscape Dynamics**

**L04**

Principles and processes that govern the functions of the Earth's lithosphere and terrestrial geomorphology. Interactions between the lithospheric system and human activity. [3-2-0]

**Laboratory**

In Person Learning

**Thur**

10:00 a.m. - 12:00 p.m.

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**Earth Systems: Landscape Dynamics**

**L06**

Principles and processes that govern the functions of the Earth's lithosphere and terrestrial geomorphology. Interactions between the lithospheric system and human activity. [3-2-0]

**Laboratory**

In Person Learning

**Mon**

12:00 p.m. - 2:00 p.m.

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**Earth Systems: Landscape Dynamics**

**XMT**

Principles and processes that govern the functions of the Earth's lithosphere and terrestrial geomorphology. Interactions between the lithospheric system and human activity. [3-2-0]

**Laboratory**

In Person Learning

**Arranged**

**Arranged**

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**Human Geography: Space, Place, and Community**

**W2**

Introduction to concepts, methods, modes of explanation, and recent critical changes in the study of human geography. Interpretation and explanation of geographic variations arising within contexts of rapidly changing cultural, demographic, economic, political, and social phenomena and their relationship to the environment. Not for Science credit. [3-0-0]

**Lecture**

In Person Learning

**Wed**

5:00 p.m. - 6:30 p.m.

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**Human Geography: Resources, Development, and W2**

Introduction to concepts, methods, modes of explanation, and recent critical changes in the study of human geography. Interpretation and explanation of geographic variations arising within contexts of rapidly changing cultural, demographic, economic, political, and social phenomena and their relationship to the environment. Not for Science credit. [3-0-0]

**Lecture**

Online Learning

**Tue Thu**

12:30 p.m. - 2:00 p.m.

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**Atmospheric Environments**

**W2**

Physical principles underlying weather and climates. Thermal, moisture, and wind climates at scales from valleys to the globe. Daily weather, air pollution, global change. Credit will be granted for only one of GEOG 200 or EESC 212. [3-3-0]

**Prequisite:** Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC221

**Lecture**

In Person Learning

**Mon Wed**

11:00 a.m. - 12:30 p.m.

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**Atmospheric Environments**

**W2**

Physical principles underlying weather and climates. Thermal, moisture, and wind climates at scales from valleys to the globe. Daily weather, air pollution, global change. Credit will be granted for only one of GEOG 200 or EESC 212. [3-3-0]

**Prequisite:** Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC221

**Laboratory**

In Person Learning

**Wed**

6:30 p.m. - 9:30 p.m.

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**Atmospheric Environments**

**W2**

Physical principles underlying weather and climates. Thermal, moisture, and wind climates at scales from valleys to the globe. Daily weather, air pollution, global change. Credit will be granted for only one of GEOG 200 or EESC 212. [3-3-0]

**Prequisite:** Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC221

**Laboratory**

In Person Learning

**Fri**

2:00 p.m. - 5:00 p.m.

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**Atmospheric Environments**

**W2**

Introduction to hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasis on surface water hydrology of western North America. Credit will be granted for only one of GEOG 200 or EESC 212. [3-3-0]

**Prequisite:** Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC221

**Laboratory**

In Person Learning

**Mon Wed**

5:00 p.m. - 6:30 p.m.

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**Atmospheric Environments**

**W2**

Introduction to hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasis on surface water hydrology of western North America. Credit will be granted for only one of GEOG 200 or EESC 212. [3-3-0]

**Prequisite:** Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC221

**Laboratory**

In Person Learning

**Tue**

11:00 a.m. - 2:00 p.m.

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**Atmospheric Environments**

**W2**

The theory and practice of cartography and map making: thematic map design techniques; cartographic conventions; spatial data acquisition; cartographic communication; critical cartographies; historical and Indigenous mapping; participatory and cognitive mapping. [3-0-0]

**Prequisite:** One of GEOG 108, GEOG 109, GEOG 128, GEOG 129.

**Lecture**

In Person Learning

**Tue Thu**

9:30 a.m. - 11:00 a.m.

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**Atmospheric Environments**

**W2**

The theory and practice of cartography and map making: thematic map design techniques; cartographic conventions; spatial data acquisition; cartographic communication; critical cartographies; historical and Indigenous mapping; participatory and cognitive mapping. [3-0-0]

**Prequisite:** One of GEOG 108, GEOG 109, GEOG 128, GEOG 129.

**Laboratory**

In Person Learning

**Tue Thu**

2:00 p.m. - 3:30 p.m.

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**Atmospheric Environments**

**W2**

Mechanisms of anthropogenic climate change and its impact on the atmosphere, hydrosphere, cryosphere, and oceans since the Industrial Revolution. Use of computer models to forecast 21st century climate changes. Credit will be granted for only one of GEOG 304 or EESC 304. [3-0-0]

**Prequisite:** One of GEOG 108, GEOG 200, GEOG 201, GEOG 301, GEOG 302, GEOG 303, GEOG 304, GEOG 305, GEOG 306.

**Lecture**

In Person Learning

**Wed Fri**

11:00 a.m. - 12:30 p.m.

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**Atmospheric Environments**

**W2**

The biophysical processes that are shaping and have shaped B.C. Characteristic associations between landforms, climate, soil, and vegetation; biophysical constraints on ar. land, and water use. [3-0-0]

**Prequisite:** One of EESC 205, EESC 212, GEOG 200, GEOG 205, GEOG 222. Third-year standing.

**Lecture**

In Person Learning

**Mon Wed**

9:30 a.m. - 11:00 a.m.
Geographic perspectives in contemporary rural geography. Specific attention is given to social and environmental change, conflict, and sustainability in Canadian and global contexts. Themes include transformations in the use of rural resources in agricultural, food, migration, and tourism production and consumption. Students are required to participate in short field trips and must arrange own transportation to/from sites within the Okanagan. [3-0-0] Prerequisite: Two of GEOG 128, GEOG 129, SUST 104. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

Origins, classification, and interpretation of sediments and sedimentary rocks. Weathering, erosion, transportation, sedimentation, and lithification of clastic materials. Non-clastic sediments. Sedimentary environments, facies, and stratigraphic methods. Credit will be granted for only one of GEOG 356 or EESC 356. [3-0-0] Prerequisite: One of EESC 121, EESC 222, GEOG 222. Equivalency: EESC 256 Laboratory In Person Learning Mon Wed 3-30 p.m. - 3-30 p.m.

Introduction to the social geographies of cities. Drawn on critical social and cultural theories. Gentrification, racialization in the city, gendered spaces, class segregation, urban form, and cultural geographies of urban life. [3-0-0] Prerequisite: All of GEOG 128, GEOG 129; and third-year standing. Lecture In Person Learning Wed Fri 2-00 p.m. - 3-30 p.m.

An examination of attitudes that have influenced land use and environmental change in the past and present. [3-0-0] Prerequisite: Two of GEOG 128, GEOG 129, SUST 104. Lecture In Person Learning Wed Fri 12-30 p.m. - 2-00 p.m.

Key energy systems and resources management from both global and Canadian perspectives. Supplies, distribution, consumption, resilience, and sustainability of energy resources. Alternative energy sources, conventional and unconventional fossil fuels, energy production and delivery systems. Credit will be granted for only one of GEOG 367 or EESC 367. [3-0-0] Prerequisite: One of GEOG 108, GEOG 129, EESC 101, EESC 111. Third-year standing. Equivalency: EESC 367 Laboratory In Person Learning Mon Wed 3-30 p.m. - 6-30 p.m.

Expands from a singular focus of sexuality and gender to consider how space is also racialized, ableized, and normalized according to hierarchies of power and privilege. Builds a foundational understanding of how queer geographies has emerged, possibilities for ‘queering’ geographical themes, and queer futurities. Credit will be granted for only one of GEOG 406, GISC 406, GEOG 407, GISC 407 when the subject matter does not overlap. Equivalency: Either (a) Two of GEOG 128, GEOG 129, SUST 104, or (b) 6 credits of GWST Third-year standing. Equivalency: GWST 256 Lecture Hybrid Learning Fri 2-00 p.m. - 5-00 p.m.

An examination of attitudes that have influenced land use and environmental change in the past and present. [3-0-0] Prerequisite: Two of GEOG 128, GEOG 129, SUST 104. Lecture In Person Learning Wed Fri 9-30 a.m. - 11-00 a.m.

Application of GIS-principles and tools in a problem solving context. Case studies are used as the basis for student projects, emphasizing data sourcing, data analysis, decision support, and project management skills. Laboratory and term projects require ArcGIS. Credit will be granted for only one of GISC 381, GEOG 381, EESC 381. [3-0-0] Prerequisite: One of GISC 380, EESC 380, GEOG 380. Laboratory In Person Learning Thu Tue 3-30 p.m. - 5-00 p.m.

Application of GIS principles and tools in a problem solving context. Case studies are used as the basis for student projects, emphasizing data sourcing, data analysis, decision support, and project management skills. Laboratory and term projects require ArcGIS. Credit will be granted for only one of GISC 380, EESC 380, GEOG 380. Laboratory In Person Learning Thu Tue 8-00 a.m. - 11-00 a.m.

Application of GIS-principles and tools in a problem solving context. Case studies are used as the basis for student projects, emphasizing data sourcing, data analysis, decision support, and project management skills. Laboratory and term projects require ArcGIS. Credit will be granted for only one of GISC 380, EESC 380, GEOG 380. Laboratory In Person Learning Fri 8-00 a.m. - 11-00 a.m.

Cross-cultural and historical antecedents to gender studies and feminist thought. The social construction of knowledge and inequality through gender, race, sexuality, and class; the cultural and structural forces that create the dynamic for change and resistance in the personal and political realms of gendered lives. [3-0-0] Prerequisite: Two of GEOG 128, GEOG 129, SUST 104. Lecture In Person Learning Mon Wed 11:00 a.m. - 12-30 p.m.

Practice-based writing course designed to further develop communication skills in genres and media integral to Gender, Women and Sexuality Studies. Attentive to the dynamic relationship between knowledge and power the course will focus on analysis and communication in written, visual, oral, mixed media, and digital modes. [3-0-0] Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture In Person Learning Mon Wed 5-00 p.m. - 6-30 p.m.
GWST_0272-101  GWST_0  272  101  Feminism and Environment  W2  Feminist theories and practice to understand and address environmental change. Role of deconstructivist, antiracist, disability justice and queer feminist perspectives in environmental justice, policy, art, and activism. Credit will be granted for only one of GWST 272 or CLAT 272. [3-0-0] Prerequisite: 6 credits of GWST, CLAT, SUST 104.
  Equivalency: CLST 272  Lecture In Person Learning Tue 2:00 p.m. - 3:30 p.m.

GWST_0272-001  GWST_0  272  001  Feminism and Environment  W2  Feminist theories and practice to understand and address environmental change. Role of deconstructivist, antiracist, disability justice and queer feminist perspectives in environmental justice, policy, art, and activism. Credit will be granted for only one of GWST 272 or CLAT 272. [3-0-0] Prerequisite: 6 credits of GWST, CLAT, SUST 104.
  Equivalency: CLST 272  Discussion In Person Learning Thu 11:00 a.m. - 12:30 p.m.

GWST_0335-101  GWST_0  335  101  Feminist Theory in the Humanities  W2  Explores the intersections of gender, sexuality, race, and class in popular culture, through a range of genre and media including, but not limited to, film, music, television, genre fiction, advertising, and the internet. [3-0-0]
  Prerequisite: Third-year standing.
  Equivalency: GEOG426  Lecture Online Learning Tue Thu 12:30 p.m. - 2:00 p.m.

GWST_0426-101  GWST_0  426  101  Queer Geographies  W2  Expands from a singular focus of sexuality and gender to consider how space is also racialized, abjected, and normalized according to hierarchies of power and privilege. Builds a foundational understanding of how queer geographies has emerged, possibilities for 'queering' geographical themes, and queer futurities. Credit will be granted for any one of GWST 426, GEOG 426, GEOG 411 and GWST 450 when the subject matter is of the same nature.
  Prerequisite: Either (a) credits of GWST, or (b) Two of GEOG 128, GEOG 129, SUST 104. Third-year standing.
  Equivalency: GEOG426  Lecture Hybrid Learning Fri 2:00 p.m. - 5:00 p.m.

HEAL_0 100-001 HEAL_0  100  001  Introduction and Principles of Health and Wellness  W2  Social frameworks used to understand mental health and wellbeing of individuals, families and communities. [3-0-0]
  Lecture In Person Learning Thu 11:00 a.m. - 12:00 p.m.

HEAL_0 101-001 HEAL_0  101  001  Mental Health in Social Contexts  W2  Application of the elementary principles of physics and math to quantitative analysis of human movement. Analysis will also focus on the development of forces within muscles and their effect on initiating and controlling human movement (pertaining to exercise, physical activity, and rehabilitation).
  Formerly offered as HMKN 105. Credit will be granted for only one of LES 102 or HMKN 101. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program
  Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

HES_0 102-001 HES_0  102  002  Biomechanics  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

HES_0 105-002 HES_0  105  002  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Mon 8:00 a.m. - 10:00 a.m.

HES_0 105-101 HES_0  105  101  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

HES_0 105-102 HES_0  105  102  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Mon 12:00 a.m. - 2:00 p.m.

HES_0 105-103 HES_0  105  103  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Mon 2:00 p.m. - 4:00 p.m.

HES_0 105-104 HES_0  105  104  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Mon 4:00 p.m. - 6:00 p.m.

HES_0 105-105 HES_0  105  105  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Tue 1:00 p.m. - 3:00 p.m.

HES_0 105-106 HES_0  105  106  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Tue 5:00 p.m. - 7:00 p.m.

HES_0 105-107 HES_0  105  107  Exercise Physiology I  W2  Acute and chronic changes observed in physiological systems as a result of exercise and exercise training.
  Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HMKN 200. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100; and either (a) HES 101 or (b) HMKN 150.
  Laboratory In Person Learning Wed 11:00 a.m. - 1:00 p.m.
Acute and chronic changes observed in physiological systems as a result of exercise and exercise training. Aerobic and anaerobic metabolism during exercise and cardiovascular, respiratory and muscular responses to physical activity. Formerly offered as HAMN 201. Credit will be granted for only one of HES 105 or HMKN 200. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100, and either (a) HES 101 or (b) HMKN 100. Laboratory In Person Learning Wed 1:00 p.m. - 3:00 p.m.

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Mon 8:00 a.m. - 10:00 a.m.

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Mon 12:00 p.m. - 2:00 p.m.

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Mon 2:00 p.m. - 4:00 p.m.

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Mon 4:00 p.m. - 6:00 p.m.

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An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.

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An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Wed 1:00 p.m. - 3:00 p.m.

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An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendocrine system, renal function, immune function, the integumentary system, reproduction and special senses. Credit will only be granted for one of HES 111, HMKN 191 or BIOL 133. Laboratory In Person Learning Thu 12:30 p.m. - 2:30 p.m.
Exercise Training, Conditioning and Rehabilitation for Health, Fitness and Performance

L01

Exercise Training, Conditioning and Rehabilitation W2

The theory, practice and analysis of safe and effective exercise training, including the design, implementation and analysis of exercise sessions, training and rehabilitation programs and ongoing monitoring strategies.

L02

Exercise Training, Conditioning and Rehabilitation W2

The theory, practice and analysis of safe and effective exercise training, including the design, implementation and analysis of exercise sessions, training and rehabilitation programs and ongoing monitoring strategies.

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The theory, practice and analysis of safe and effective exercise training, including the design, implementation and analysis of exercise sessions, training and rehabilitation programs and ongoing monitoring strategies.

L09

Exercise Counseling and Behaviour Modification W2

Application of evidence-informed behavior change techniques to help individuals adopt and adhere to health behaviors. Credit will only be granted for one of HES 231 or HMKN 316. [3-0-0] Prerequisite: Either (a) HES 111 or (b) HMKN 201.

L10

Exercise Counseling and Behaviour Modification W2

Application of evidence-informed behavior change techniques to help individuals adopt and adhere to health behaviors. Credit will only be granted for one of HES 231 or HMKN 316. [3-0-0] Prerequisite: Either (a) HES 111 or (b) HMKN 201.

L11

Exercise Counseling and Behaviour Modification W2

Application of evidence-informed behavior change techniques to help individuals adopt and adhere to health behaviors. Credit will only be granted for one of HES 231 or HMKN 316. [3-0-0] Prerequisite: Either (a) HES 111 or (b) HMKN 201.

L12

Exercise Training, Conditioning and Rehabilitation W2

The theory, practice and analysis of safe and effective exercise training, including the design, implementation and analysis of exercise sessions, training and rehabilitation programs and ongoing monitoring strategies.

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<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Lecture/Laboratory</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
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<tr>
<td>HES 312-001</td>
<td>Lecture/Laboratory</td>
<td>Introduction to Athletic Injury Management</td>
<td>2-0</td>
<td>HES 120, HMKN 335</td>
<td>Both courses limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S. Program.</td>
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<tr>
<td>HES 312-01</td>
<td>Lecture/Laboratory</td>
<td>Exercise Testing for Clinical Populations</td>
<td>3-2-0</td>
<td>HES 311, HMKN 330</td>
<td>Both courses limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S. Program.</td>
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<tr>
<td>HES 312-05</td>
<td>Lecture/Laboratory</td>
<td>Laboratory Techniques in Exercise Science</td>
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<td>HES 312-10</td>
<td>Lecture/Laboratory</td>
<td>Motivational Interviewing</td>
<td>2-0</td>
<td>HES 312, HMKN 330</td>
<td>Both courses limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S. Program.</td>
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<tr>
<td>HES 312-15</td>
<td>Lecture/Laboratory</td>
<td>Advanced Theories of Health Behaviour Change</td>
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<tr>
<td>HES 313-00</td>
<td>Lecture/Laboratory</td>
<td>Health Program Evaluation</td>
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<tr>
<td>HES 315-00</td>
<td>Lecture/Laboratory</td>
<td>Exercise Testing for Clinical Populations</td>
<td>2-0</td>
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</tr>
</tbody>
</table>
Exercise Testing for Clinical Populations

Advanced exercise prescription considerations for individuals with chronic conditions and special populations (e.g., pediatric, aging). [3-2-0] Prerequisite: HES 352. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program.

Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

Clinical Exercise Prescription

Advanced exercise prescription considerations for individuals with chronic conditions and special populations (e.g., pediatric, aging). [3-2-0] Prerequisite: HES 352. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program.

Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

Clinical Exercise Physiology Applications in Chronic

Clinical considerations of cardiovascular conditions and treatment for safe and effective implementation of exercise programs for people with cardiovascular disease. Critically review evidence, standards and recommendations for use of exercise in the management and prevention of cardiovascular disease. [3-0-0] Prerequisite: HES 315. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program.

Laboratory In Person Learning Fri 10:00 a.m. - 12:00 p.m.

Body Composition

Body composition, with particular emphasis on the influence of physical (in)activity. Techniques for measuring the amounts of adipose tissue, muscle, and bone in the body. Formerly offered as HES 351. Credit will be granted for only one of HES 381 or HNKN 314. [3-0-0] Prerequisite: Either (a) HES 100 or (b) HES 120.

Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

Community Placement Experience

Practical work experience in a supervised health/human kinetics related work setting with a cooperating agency, private business, or industry. No more than 6 credits in total will be granted for any combination of HES 401, HNKN 402, HNKN 403. Formerly offered as HNKN 401. Credit will be granted for only one of HES 401 or HNKN 401. Pass/Fail. Prerequisite: One of HES 201, HES 240 and one of HNKN 206, HES 160 and fourth-year standing in Human Kinetics and permission of the Undergraduate Chair.

Lecture In Person Learning Arranged Arranged

Pediatric Exercise Physiology

An overview of the clinical considerations of metabolic and endocrine pathologies and treatment for the safe and effective design and implementation of exercise programs for people with metabolic and/or endocrine disease. Students will critically review evidence and current standards and recommendations for the use of exercise in the management and prevention of metabolic and endocrine diseases and disorders. [3-0-0] Prerequisite: HES 315. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program.

Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

Advanced Community Placement Experience

Investigation into the physiological responses of children and adolescents to exercise. Formerly offered as HNKN 404. Credit will be granted for only one of HES 480 or HNKN 404. [3-0-0] Prerequisite: Either (a) HES 240 or (b) HES 206, and either (a) HES 311 or (b) HNKN 311, and either (a) HES 340 or (b) HNKN 205.

Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

Environmental Physiology

Regulation and adaptation of the cardiovascular, circulatory, and respiratory systems during environmental extremes. Formerly offered as HNKN 411. Credit will be granted for only one of HES 483 or HNKN 411. [3-0-0] Prerequisite: One of HES 205, HNKN 201.

Lecture In Person Learning Wed Fri 12:30 p.m. - 2:30 p.m.

Project in Health and Exercise Sciences

Provides opportunities to perform research pertaining to a chosen area of Human Kinetics as agreed upon by a faculty member and student. No more than 6 credits in total will be granted for any combination of HES 480 or HNKN 405. Credit will be granted for only one of HES 480 or HNKN 405. [3-0-0] Prerequisite: Either (a) HES 240 or (b) HES 206; and either (a) HES 340 or (b) HNKN 205. Permission of the School of Health and Exercise Sciences. Formerly offered as HNKN 405. Credit will be granted for only one of HES 480 or HNKN 405. [3-0-0] Prerequisite: Either (a) HES 240 or (b) HES 206, and either (a) HES 340 or (b) HNKN 205. Permission of the School of Health and Exercise Sciences.

Independent Study In Person Learning Arranged Arranged

Principles in Health and Exercise Sciences

Principles of research methods including philosophy of science, research designs, ethical considerations, critical thinking, qualitative and quantitative approaches, proposal development.

Lecture In Person Learning Tue 6:30 p.m. - 9:30 p.m.

Special Topics in Health and Exercise Sciences

Principles of research methods including philosophy of science, research designs, ethical considerations, critical thinking, qualitative and quantitative approaches, proposal development.

Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.

Special Topics in Health and Exercise Sciences

Credit will be granted for only one of HNKN 455 or HES 455 when the subject matter is of the same nature.

Lecture In Person Learning Thu 2:00 p.m. - 5:00 p.m.

Ph.D. Dissertation

Credit will be granted for only one of HNKN 455 or HES 455 when the subject matter is of the same nature.

Thesis In Person Learning Arranged Arranged

Thesis In Person Learning Arranged Arranged

Emerging health issues and trends, evidence-informed approaches and ethical concerns within the context of the global health and global healthcare. Credit will be granted for only one of HNKN 320 or NRSG 320 or HEAL 307. [3-0-0] Prerequisite: Third-year standing

Lecture In Person Learning Thu 2:00 p.m. - 5:00 p.m.

Emerging health issues and trends, evidence-informed approaches and ethical concerns within the context of the global health and global healthcare. Credit will be granted for only one of HNKN 320 or NRSG 320 or HEAL 307. [3-0-0] Prerequisite: Third-year standing

Lecture In Person Learning Thu 2:00 p.m. - 5:00 p.m.

Examination of disability studies and its relationship to clinical practice. Various theoretical frameworks used to understand disability and their implications for practice are critically examined.

Lecture In Person Learning Thu 2:00 p.m. - 5:00 p.m.

Introduction to the changes in European society from the late Roman Empire to the Renaissance, with an emphasis on the Middle Ages as a dynamic era. The period saw the development of many of the institutions of modern civilization, including common law, parliament, and the university. Religion, family, and warfare in the Middle Ages are examined. [3-0-0]

Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

Europe from the French Revolution

Survey of the development of Europe through the political, social, and industrial revolutions that accompanied modern civilization, including common law, parliament, and the university. Religion, family, and warfare in the Middle Ages are examined. [3-0-0]

Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.
HIST 160-001  
**Introduction to Asian History**  
W2  
Study of themes of the major economic, political, and social developments in what would become the United States from the late fifteenth century through to the Cold War. [3-0-0]  
Lecture  
In Person Learning  
Wed  
9:30 a.m. - 11:00 a.m.

HIST 211-101  
**The United States to 1865**  
W2  
Study of themes of the major economic, political, and social developments in what would become the United States from the late fifteenth century through to the Cold War. [3-0-0]  
Lecture  
In Person Learning  
Mon, Wed  
12:30 p.m. - 2:00 p.m.

HIST 222-001  
**Canadian State and Economy**  
W2  
Economic and political development of the Canadian nation state from Indigenous-settler contact to the twenty-first century. Credit will be granted for only one of HIST 222 or 111. [3-0-0]  
Lecture  
In Person Learning  
Thu, Fri  
9:30 a.m. - 11:00 a.m.

HIST 240-101  
**Pre-Contact and Colonial Latin American History**  
W2  
The Indigenous peoples (status and non-status) of Canada from the passage of the Indian Act in 1871 to the present. Topics include government policies, environment, gender, religion, oral narratives, activism, urbanization, identity, and contemporary history. [3-0-0] Prerequisite: 6 credits of HIST and third-year standing; or 3 credits of HIST, INDG 100, and third-year standing.  
Lecture  
In Person Learning  
Wed  
11:00 a.m. - 1:30 p.m.

HIST 301-101  
**History of Indigenous Peoples of Canada Since 1821**  
W2  
The social, economic, political, and religious history of Native North America from the first contact to the present. Credit will be granted for only one of HIST 301 or HIST 328. [3-0-0] Prerequisite: 6 credits of HIST and third-year standing.  
Lecture  
In Person Learning  
Wed  
2:00 p.m. - 5:00 p.m.

HIST 304-001  
**The Rise and Fall of the Roman Republic**  
W2  
Rome, political, social, and economic history from the eighth century B.C.E. to the end of the Republic in 27 B.C.E. Credit will be granted for only one of HIST 304 or HIST 522. [3-0-0] Prerequisite: HIST 110.  
Lecture  
In Person Learning  
Wed  
5:00 p.m. - 6:30 p.m.

HIST 320-001  
**Iran: From the Safavid Empire to the Islamic Revival**  
W2  
Introduction to interdisciplinary and collaborative approaches to the field of Global Studies.  
Lecture  
In Person Learning  
Wed  
9:30 a.m. - 11:00 a.m.

HIST 328-101  
**The American Revolution and the Formation of W2**  
Study of the revolutionary origins of the United States of America and the establishment of the American republic. [3-0-0] Prerequisite: 6 credits of HIST and third-year standing.  
Lecture  
In Person Learning  
Wed  
5:00 p.m. - 6:30 p.m.

HIST 354-101  
**Social Movements in 20th-Century Latin America W2**  
Social movements of Latin America since 1930 that have challenged the status quo. Role of ideology, culture, and identity in the struggles of marginalized peoples. [0-0-3] Prerequisite: One of HIST 251, or HIST 240, or third-year standing.  
Lecture  
In Person Learning  
Wed  
9:30 a.m. - 11:00 a.m.

HIST 384-101  
**Commodities in Africa**  
W2  
Examine the history of commodity production (agricultural, mineral, oil, and other resources) on the African continent from the late nineteenth century to the present day with attention to how commodities have shaped and continue to influence the development of the continent and inform its political, social and economic encounters. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 110, HIST 145 and third-year standing.  
Lecture  
In Person Learning  
Mon  
11:00 a.m. - 1:30 p.m.

HIST 414-101  
**Medieval England**  
W2  
The social, economic, political, and religious history of England from the Saxon conquest to the fifteenth centuries. [1-0-1] Prerequisite: 6 credits of HIST; and HIST 110 and third-year standing.  
Lecture  
In Person Learning  
Wed  
5:00 p.m. - 6:30 p.m.

HIST 430-A_101  
**Topics in the History of Migration**  
W2  
Examines of selected topics and issues in history. With different topics, this course may be taken more than once for credit. [3-0-0] Prerequisite: 12 credits of HIST.  
Lecture  
In Person Learning  
Fri  
11:00 a.m. - 2:00 p.m.

HIST 495-A_101  
**Special Topics in History**  
W2  
Examination of selected topics and issues in history. With different topics, this course may be taken more than once for credit. [3-0-0] Prerequisite: 12 credits of HIST.  
Lecture  
In Person Learning  
Wed  
11:00 a.m. - 1:30 p.m.

HIST 495-B_101  
**Special Topics in History**  
W2  
Examination of selected topics and issues in history. With different topics, this course may be taken more than once for credit. [3-0-0] Prerequisite: 12 credits of HIST.  
Lecture  
In Person Learning  
Wed  
2:00 p.m. - 3:30 p.m.

IGS 501-001  
**Interdisciplinary Topics in Research Methods**  
W2  
Introduction to interdisciplinary and collaborative approaches to the field of Global Studies.  
Seminar  
In Person Learning  
Thu  
2:00 p.m. - 5:00 p.m.

IGS 510-001  
**Society and Conflict**  
W2  
Introduction to interdisciplinary and collaborative approaches to the field of Global Studies.  
Seminar  
In Person Learning  
Fri  
11:00 a.m. - 2:00 p.m.

IGS 539-101  
**Directed Studies in Creative and Critical Studies**  
W2  
Independent Study  
In Person Learning  
Mon, Wed  
5:00 p.m. - 6:30 p.m.

IGS 539-Q_001  
**Special Topics in Social Science Research**  
W2  
Seminar  
In Person Learning  
Fri  
9:00 a.m. - 11:00 a.m.

IGS 588-101  
**Global Studies Panorama**  
W2  
Introduction to interdisciplinary and collaborative approaches to the field of Global Studies.  
Seminar  
In Person Learning  
Tue  
2:00 p.m. - 5:00 p.m.

IGS 593-Q_001  
**Decolonizing the Global: Contemporary Ethnography**  
W2  
An examination and close reading of global issues drawing on ethnography and postcolonial theory. [0-0-3]  
Seminar  
In Person Learning  
Thu  
2:00 p.m. - 3:30 p.m.

IGS 599-001  
**Vitor, Justice & Change**  
W2  
Engage in current and shifting discussions, theories, and praxis related to justice-oriented research and community initiatives for social change. The power of voice, representation, and systemic transformation will be key aspects of this course, in addition to community-led and self-determined initiatives. Credit will be granted for only one of IGSS 599 or IGSS 5500. [0-0-3] Prerequisite: IGSS 150.  
Thesis  
In Person Learning  
Thu  
11:00 a.m. - 2:00 p.m.

IGS 599-A_002  
**Master’s Thesis**  
W2  
Pass/Fail  
Thesis  
In Person Learning  
Arranged  
Arranged

IGS 599-C_002  
**Master’s Thesis**  
W2  
Pass/Fail  
Thesis  
In Person Learning  
Arranged  
Arranged

IGS 689-002  
**Doctoral Thesis**  
W2  
Pass/Fail  
Thesis  
In Person Learning  
Arranged  
Arranged

IMTC 507-001  
**Immersive Technology Design Studio**  
W2  
Application of immersive technologies design skills; interactive immersive technology production; reflection on practice and critical thinking; art in contemporary VR production. Prerequisite: All of IMTC 506, IMTC 506.  
Lecture  
In Person Learning  
Wed  
11:00 a.m. - 2:00 p.m.

INDG 100-101  
**Introduction to Decolonization: Indigenous Studies**  
W2  
Introduces students to the concept of Indigenous knowledge through a holistic and relational approach to land and people. Provides a foundation to understand the links between Indigenous knowledge, social-ecological knowledge, and land-based practices.  
Discussion  
Online Learning  
Wed  
2:00 p.m. - 3:30 p.m.

INDG 102-101  
**Introduction to Indigenous Ways of Knowing**  
W2  
Indigenous historiography as demonstrated through Okanagan traditional oral techniques for documentation of knowledge; an Indigenous peoples’ approach to creativity and the maintenance of social, ecological, and land-based practices. Offered in relationship with the Gitxan Centre. [3-0-0] Prerequisite: One of INDG 100, INDG 102.  
Lecture  
In Person Learning  
Mon  
11:00 a.m. - 12:30 p.m.

INDG 201-101  
**Okanagan Indigenous Peoples’ Historical Perspectives**  
W2  
Indigenous historiography as demonstrated through Okanagan traditional oral techniques for documentation of knowledge; an Indigenous peoples’ approach to creativity and the maintenance of social, ecological, and land-based practices. Offered in relationship with the Gitxan Centre. [3-0-0] Prerequisite: One of INDG 100, INDG 102.  
Lecture  
In Person Learning  
Mon  
11:00 a.m. - 12:30 p.m.
INDG_O 202-101 101
Indigenous Studies Internship
In Person Learning
Tue Thu
W2
11:00 a.m. - 12:00 p.m.

Overview of the historical and contemporary socio-economic, political, cultural, and ecological perspectives of
Indigenous Peoples. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Minimum grade of 55%.

INDG_O 203-101 101
Indigenous Peoples' Historical Perspectives
W2
Understanding an Indigenous strategy of community discourse as a methodology for inquiry, a technique of
examining employing sequential stages of critical analysis in a whole-systems approach. Offered in
relationship with the En'owkin Centre. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year
standing.

INDG_O 301-002 101
Examining an Indigenous Methodology: En'owkin W2
Research strategies and research techniques used in Indigenous studies and related disciplines. These elements
will be applied to various topical issues including intellectual property rights, research ethics, oral histories,
ethnographic research, and the use of statistics (both descriptive and inferential). [3-0-0] Prerequisite: One of
INDG 100, INDG 102. Third-year standing.

INDG_O 304-101 101
Indigenous Studies Field Methods
W2
Indigenous Peoples’ cultural heritage in the Americas and other continents. Many manifestations of Indigenous
cultures will be discussed, as well as the many complex issues that have arisen regarding Indigenous heritage
in the colonial and post-colonial periods such as treaties, treaty implementation, land and resources,
reconciliation, and the formation of new social relationships. [3-0-0] Prerequisite: One of INDG 100, INDG 102.
Third-year standing.

INDG_O 306-101 101
Indigenous Land Rights
W2
Legal theories under British Law or its historical derivations that have been used to justify the colonization of
Indigenous peoples. Legal arguments and anthropological evidence raised by Indigenous groups to challenge
those theories. Particular reference is paid to Canada, Australia, New Zealand, and the United States. [3-0-0]
Prerequisite: One of INDG 100, INDG 102. Third-year standing.

INDG_O 308-101 101
Indigenous Culture, Heritage, and Intellectual Property
W2
Historical realities of the salience of states and nations in the lives of Indigenous women, Indigenous methods,
de-colonial historical analysis, and gender theory are used to analyze Indigenous women’s and peoples’
resistance to invasion, colonization, occupation, settler states, and dispossession. [3-0-0] Prerequisite: One of
INDG 100, INDG 102. 3 credits in INDG 200- or 300-level courses.

INDG_O 310-101 101
Indigenous Peoples' Perspectives: Gender.
W3
Focuses on Indigenous workspaces and perspectives to frame Indigenous Peoples' health opportunities, issues,
and challenges, with an emphasis on physical activity contexts. Restricted to students in the Bachelor of Health
and Exercise Science program. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing.

INDG_O 319-101 101
Indigenous Perspectives on Health and Physical Education
W2
The planning of research projects from the perspective of Indigenous cultures and values. Topics include
project development, community relations and ethics, and identification and acquisition of appropriate
resources. [3-0-0] Prerequisite: One of INDG 100, INDG 101, INDG 201.

INDG_O 401-101 101
Research Applications
W2
The story of the Indian Residential School (IRS) is placed within the context of colonization and the official
Canadian Government policy of assimilation. The IRS legacy will be placed in the context of issues confronted by
the Truth and Reconciliation Commission of Canada. [3-0-0] Prerequisite: One of INDG 100, INDG 101.
Third-year standing.

INDG_O 440-101 101
Residential Schools and Reconciliation
W2
Work experience in language revitalization efforts in the community or organizations. Periodic workshops to
support placement are required. Restricted to students in the Indigenous language fluency degrees or
Indigenous Studies major program. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing.

INDG_O 440-001 102
Indigenous Studies Internship
W2
Work experience in language revitalization efforts in the community or organizations. Periodic workshops to
support placement are required. Restricted to students in the Indigenous language fluency degrees or
Indigenous Studies major program. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing.

INDG_O 440-002 102
Indigenous Studies Internship
W2
Work experience in language revitalization efforts in the community or organizations. Periodic workshops to
support placement are required. Restricted to students in the Indigenous language fluency degrees or
Indigenous Studies major program. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing.

INDG_O 440-003 102
Indigenous Studies Internship
W2
Work experience in language revitalization efforts in the community or organizations. Periodic workshops to
support placement are required. Restricted to students in the Indigenous language fluency degrees or
Indigenous Studies major program. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing.

INDG_O 449-H_101 495 H H_101
Advanced Topics in Indigenous Studies
W2
With permission of the program advisor, students may take and receive credit for this course more than once.
[3-0-0] Prerequisite: One of INDG 100, INDG 101. 3 credits in INDG 200- or 300-level courses, and third-year
standing.

INLG_O 282-101 101
Structures of Endangered Languages: Conservations W2
Documentation, transcription and analysis of grammatical structures in endangered languages, focusing on the
diversity within B.C. Indigenous languages. Applied techniques in documentation, workflow and multi-media
digital annotation, guided by community-based ethical protocols and conservation/revitalization goals. [3-0-0]
Prerequisite: INLG 281.

INLG_O 380-101 101
Technologies for Endangered Language Document W2
Digital tools for endangered language documentation, conservation, and revitalization. Overview of best
practices, introduction to community engagement and capacity-building, protocols and ethics, project design,
cultural context, orthographies, use of audio, video and still photography, data management, archiving and web
publishing. [3-0-0] Prerequisite: INLG 282.

JPTJ_O 101-002 101
Beginning Japanese Language W2
Continuation of JPTJ 101 Students who have not completed JPTJ 101 should consult with the instructor before
enrolling in this course. Prerequisite: JPTJ 101. Minimum grade of 55%.

JPTJ_O 101-001 101
Introduction to Japanese Cinema W2
Historical and thematic survey of major directors, genres, and traditions in Japanese film from 1950 to the
present. In English. Prerequisite: Third-year standing.

KDRN_O 100-101 101
Basic Korean I W2
An introduction to the grammar, syntax, and function of modern spoken and written Korean. For absolute
beginners; not available to students who have obtained the student of CPRF level in the language.

L1ED_O 494-001 111
Introduction to Additional Language Teaching an W2
[3-0-0] Prerequisite: L1ED 300, L1ED 400.

L1ED_O 494-001 111
Introduction to Additional Language Teaching an W2
[3-0-0] Prerequisite: L1ED 300, L1ED 400.

L1ED_O 494-001 111
Introduction to Additional Language Teaching an W2
[3-0-0] Prerequisite: L1ED 300, L1ED 400.

L1ED_O 494-001 111
Introduction to Additional Language Teaching an W2
[3-0-0] Prerequisite: L1ED 300, L1ED 400.
MANF_O 270-201 MANF_O 270 201 Production Systems Management I W2 Introduction to production systems management and operations. Focus on the impact of operations in increasing productivity, reducing waste in manufacturing facilities. [3-0-0] Prerequisite: Second-year standing. Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.


MANF_O 277-LIA MANF_O 277 LIA Fundamentals of Design for Manufacturing W3 Engineering drawing for manufacturing, part and process drawings, quality control, metrology. Design for manufacturing and assembly. Integrated Manufacturing Systems: [1-2-0] Prerequisite: MANF 171, and second-year B.A.Sc. standing. Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.


MANF_O 420-001 MANF_O 420 001 Life Cycle Analysis and Sustainability W2 Practical and theoretical applications of life cycle thinking in engineering projects, products, and processes. Understand international standards and methods in life cycle assessment (LCA), life cycle costing (LCC), and interpret and provide critical feedback on LCA/LCC studies and analysis claims on sustainability. Credit will be granted for only one of MANF 450 or ENGR 546, [3-0-0] Prerequisite: Fourth-year standing. Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

MANF_O 465-001 MANF_O 465 001 Digital Enterprise W2 Systems integration and data analytics for engineering processes in a digital enterprise with industrial automation systems, production and operation, information fusion, performance monitoring and learning, and software and simulation platforms for manufacturing applications. [3-2-0] Prerequisite: MANF 386. Lecture In Person Learning Tue Thu 9:00 a.m. - 12:30 p.m.

MANF_O 465-LIA MANF_O 465 LIA Digital Enterprise W2 Systems integration and data analytics for engineering processes in a digital enterprise with industrial automation systems, production and operation, information fusion, performance monitoring and learning, and software and simulation platforms for manufacturing applications. [3-2-0] Prerequisite: MANF 386. Laboratory In Person Learning Tue 1:00 p.m. - 3:00 p.m.

MATH_O 100-101 MATH_O 100 101 Differential Calculus with Applications to Physical W2 Definite integral; integration techniques, applications, modeling, linear ODE’s. Credit will be granted for only one of MATH 100 or MATH 103. [3-0-0] Prerequisite: Either (a) a score of 67% or higher in one of MATH 12, PREC 12 or (b) a score of 60% or higher in one of MATH 125, MATH 126. Equivalency: MATH108. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

MATH_O 101-101 MATH_O 101 101 Integral Calculus with Applications to Physical Sci W2 Definite integral; integration techniques, applications, modeling, linear ODE’s. Credit will be granted for only one of MATH 101 or MATH 142. [3-0-0] Prerequisite: One of MATH 100, MATH 116. Lecture In Person Learning Tue Fri 11:00 a.m. - 12:30 p.m.

MATH_O 101-102 MATH_O 101 102 Integral Calculus with Applications to Physical Sci W2 Definite integral; integration techniques, applications, modeling, linear ODE’s. Credit will be granted for only one of MATH 101 or MATH 142. [3-0-0] Prerequisite: One of MATH 100, MATH 116. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

MATH_O 101-103 MATH_O 101 103 Integral Calculus with Applications to Physical Sci W2 Definite integral; integration techniques, applications, modeling, linear ODE’s. Credit will be granted for only one of MATH 101 or MATH 142. [3-0-0] Prerequisite: One of MATH 100, MATH 116. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

MATH_O 101-104 MATH_O 101 104 Integral Calculus with Applications to Physical Sci W2 Definite integral; integration techniques, applications, modeling, linear ODE’s. Credit will be granted for only one of MATH 101 or MATH 142. [3-0-0] Prerequisite: One of MATH 100, MATH 116. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

MATH_O 101-105 MATH_O 101 105 Integral Calculus with Applications to Life Science W2 Antiderivatives, the definite integral, integration techniques, numerical integration, infinite series, applications of integration to differential equations and probability, linear algebra. Credit will be granted for only one of MATH 101 or MATH 142. [1-0-0] Prerequisite: One of MATH 100, MATH 116. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

MATH_O 101-105-L MATH_O 101 L105 Integral Calculus with Applications to Life Science W2 Antiderivatives, the definite integral, integration techniques, numerical integration, infinite series, applications of integration to differential equations and probability, linear algebra. Credit will be granted for only one of MATH 101 or MATH 142. [1-0-0] Prerequisite: One of MATH 100, MATH 116. Laboratory In Person Learning Mon 12:00 p.m. - 1:00 p.m.

MATH_O 101-106 MATH_O 101 106 Integral Calculus with Applications to Life Science W2 Antiderivatives, the definite integral, integration techniques, numerical integration, infinite series, applications of integration to differential equations and probability, linear algebra. Credit will be granted for only one of MATH 101 or MATH 142. [1-0-0] Prerequisite: One of MATH 100, MATH 116. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:00 p.m.

MATH_O 101-107 MATH_O 101 107 Integral Calculus with Applications to Life Science W2 Antiderivatives, the definite integral, integration techniques, numerical integration, infinite series, applications of integration to differential equations and probability, linear algebra. Credit will be granted for only one of MATH 101 or MATH 142. [1-0-0] Prerequisite: One of MATH 100, MATH 116. Laboratory In Person Learning Thu 8:00 a.m. - 9:00 a.m.

MATH_O 101-108 MATH_O 101 108 Integral Calculus with Applications to Life Science W2 Antiderivatives, the definite integral, integration techniques, numerical integration, infinite series, applications of integration to differential equations and probability, linear algebra. Credit will be granted for only one of MATH 101 or MATH 142. [1-0-0] Prerequisite: One of MATH 100, MATH 116. Laboratory In Person Learning Thu 2:00 p.m. - 3:00 p.m.

MATH_O 130-101 MATH_O 130 101 Calculus I for Management and Economics W2 Pre-requisites for a calculus course. Functions and their graphs; inverse functions; algebraic, exponential, logarithmic, trigonometric functions; trigonometric identities. Cannot be counted for credit toward the B.S.E. or B.Sust. degree. Credit will be granted for only one of MATH 125 or MATH 126. Students with credit for MATH 100 or 115 may not take MATH 125 for further credit. [3-0-0] Prerequisite: One of Principles of Mathematics 11, Pre-Calculus 11, Foundations of Mathematics 12. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.
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<tr>
<th>Course Code</th>
<th>Section</th>
<th>Credits</th>
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<th>Days</th>
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<tbody>
<tr>
<td>MATH 125-101</td>
<td>101</td>
<td>3</td>
<td>Basic Mathematics: An Indigenous Perspective</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>L01</td>
<td>W2</td>
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<td>MATH 126-101</td>
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<td>Basic Mathematics: An Indigenous Perspective</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
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<td>MATH 211-101</td>
<td>101</td>
<td>3</td>
<td>Linear Algebra</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>L01</td>
<td>W2</td>
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<tr>
<td>MATH 221-101</td>
<td>101</td>
<td>3</td>
<td>Numerical Analysis</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>L01</td>
<td>W2</td>
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<tr>
<td>MATH 225-101</td>
<td>101</td>
<td>3</td>
<td>Introduction to Differential Equations</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>L01</td>
<td>W2</td>
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<td>MATH 225-102</td>
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<td>3</td>
<td>Introduction to Differential Equations</td>
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<td>101</td>
<td>3</td>
<td>Introduction to Differential Equations</td>
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<td>3:30 p.m. - 5:00 p.m.</td>
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<td>3</td>
<td>Numerical Analysis</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
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<td>3</td>
<td>Numerical Analysis</td>
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<td>3:30 p.m. - 5:00 p.m.</td>
<td>L01</td>
<td>W2</td>
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<td>MATH 317-101</td>
<td>101</td>
<td>3</td>
<td>Introduction to Number Theory</td>
<td>3-0</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>L01</td>
<td>W2</td>
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<td>101</td>
<td>3</td>
<td>Introduction to Linear Programming</td>
<td>3-0</td>
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<td>MATH 410-101</td>
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<td>MATH 446-101</td>
<td>Nonconvex Optimization</td>
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<td>MATH 559-101</td>
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<td>MATH 590</td>
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<td>MATH 600-101</td>
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Mathematical modeling to biological disciplines such as population dynamics, ecology, pattern formation, tumour growth, immune response, biomolecules, and epidemiology. Theory of such models formulated as difference equations, ordinary differential equations, and partial differential equations. [3-0-0] Prerequisite: MATH 225. MATH 331 is recommended. W2

Nonconvex analysis, semi-continuous functions, Lipschitz functions, tangent cone, normal cone, subdifferentials, optimality conditions, regularizations, algorithms for nonconvex optimization. Credit will be granted for only one of MATH 446 or MATH 554. [3-0-0] Prerequisite: MATH 327. W2

Presentation and discussion of recent results in the mathematical, statistical, or related literature. Credit may be obtained more than once. Pass/Fail. [0-0-3] The credit value for this course will be determined in consultation with the student prior to the registration. W2

Topics chosen from group theory, rings and modules, Galois theory, commutative rings, categorical algebra, representations of finite groups, and other topics. W2

Key concepts and techniques in the domain of artificial intelligence and machine learning for creative media systems, cognitive science, machine analysis, classification, prediction, generative systems. Concepts are analyzed through the research and development of student-led creative projects. Prerequisite: ENST 210. W2

Exploring immersive environments as a creative practice that blurs the line between and among both physical and virtual environments. Focus on interactive installation production, reflection on practice and critical discussion. Prerequisite: MGMT 111. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students accepted to the Management Co-operative Education Program. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students in the Management Co-operative Education Program. Prerequisite: MGCO 402. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students in the Management Co-operative Education Program. Prerequisite: MGDA 402. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students accepted to the Management Co-operative Education Program. Prerequisite: MGCO 401. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students accepted to the Management Co-operative Education Program. Prerequisite: MGDA 403. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students accepted to the Management Co-operative Education Program. Prerequisite: MGDA 404. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students accepted to the Management Co-operative Education Program. Prerequisite: MGDA 405. W2

Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full-time. Pre-employment training workshops and co-op assignments are required. Course is restricted to students who have completed all third-year requirements and have secured a work-term with an appropriate employer either independently or through the Co-op Office. Restricted to students accepted to the Management Co-operative Education Program. Prerequisite: MGDA 406. W2

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behavior, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] W2

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behavior, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] W2
MGMT_O 100-109  MGMT_O 100  L09 Introduction to Business W2

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Laboratory In Person Learning Mon 4:00 p.m. - 5:00 p.m.

MGMT_O 100-110  MGMT_O 100  L10 Introduction to Business W2

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Laboratory In Person Learning Fri 2:00 p.m. - 3:00 p.m.

MGMT_O 100-111  MGMT_O 100  L11 Introduction to Business W2

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Laboratory In Person Learning Wed 9:00 a.m. - 10:00 a.m.

MGMT_O 100-W1A  MGMT_O 100  W1A Introduction to Business W2

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Workshop In Person Learning Tue 1:00 p.m. - 2:00 p.m.

MGMT_O 110-102  MGMT_O 120  102 Introduction to Management Thought and Social W2

Major issues and methods of managerial accounting and how they are used by companies to enhance the quality of their management decisions. [3-0-0] Prerequisite: MGMT 201 and second-year standing. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

MGMT_O 220-101  MGMT_O 220  101 Introduction to Marketing W2

Corequisites: MGMT 110. Second-year standing and 3 credits of ENGL. Lecture Online Learning Wed Fri 5:10 p.m. - 6:30 p.m.

MGMT_O 240-001  MGMT_O 240  001 Introduction to Management Communications W3

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

MGMT_O 250-101  MGMT_O 250  101 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Lecture In Person Learning Mon Wed 11:00 a.m. - 1:30 p.m.

MGMT_O 250-102  MGMT_O 250  102 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Lecture In Person Learning Tue Thu 9:00 a.m. - 9:30 a.m.

MGMT_O 250-101  MGMT_O 250  101 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Wed 4:00 p.m. - 5:00 p.m.

MGMT_O 250-102  MGMT_O 250  102 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Tue 10:00 a.m. - 11:00 a.m.

MGMT_O 250-103  MGMT_O 250  103 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Thu 10:00 a.m. - 11:00 a.m.

MGMT_O 250-104  MGMT_O 250  104 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Thu 2:00 p.m. - 3:00 p.m.

MGMT_O 250-105  MGMT_O 250  105 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Mon 1:00 p.m. - 2:00 p.m.

MGMT_O 250-106  MGMT_O 250  106 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Tue 2:00 p.m. - 3:00 p.m.

MGMT_O 250-107  MGMT_O 250  107 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Wed 9:00 a.m. - 10:00 a.m.

MGMT_O 250-108  MGMT_O 250  108 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Thu 3:00 p.m. - 4:00 p.m.

MGMT_O 250-109  MGMT_O 250  109 Introduction to Information Technology Manager W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 110. Laboratory In Person Learning Thu 4:00 p.m. - 5:00 p.m.

MGMT_O 304-001  MGMT_O 304  001 Intermediate Financial Accounting II W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 300. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

MGMT_O 360-001  MGMT_O 360  001 Business Conditions Analysis W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 290 and one of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

MGMT_O 360-W01  MGMT_O 360  W01 Business Conditions Analysis W2

Opportunity for students to improve abilities to communicate effectively, regardless of the particular medium or situation. Enhances understanding of factors contributing to group effectiveness, and develops skills in working effectively as a member of a group or project team. [3-0-0] Prerequisite: MGMT 290 and one of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Workshop In Person Learning Mon 9:00 a.m. - 10:00 a.m.
Sustainability and Business (W02) W2

Lecture In Person Learning Fri 12:00 p.m. - 2:00 p.m.

Advanced Managerial Accounting (L02) W2

Workshop In Person Learning Thu 11:00 a.m. - 12:00 p.m.

Globalization, Offshoring and Outsourcing (L03) W2

Workshop In Person Learning Mon 4:00 p.m. - 5:00 p.m.

Sustainability and Business (W04) W2

Workshop In Person Learning Wed 1:00 p.m. - 2:00 p.m.

Leadership in Complex Environments (L01) W2

Lecture In Person Learning Fri 2:00 p.m. - 3:00 p.m.

Leadership in Complex Environments (L02) W2

Lecture In Person Learning Mon 2:00 p.m. - 3:00 p.m.

Project Management (L03) W2

Laboratory In Person Learning Thu 5:00 p.m. - 6:00 p.m.

Project Management (L04) W2

Laboratory In Person Learning Mon 10:00 a.m. - 11:00 a.m.

Project Management (L05) W2

Laboratory In Person Learning Tue 10:00 a.m. - 11:00 a.m.

Marketing Strategy (L06) W2

Lecture In Person Learning Thu 6:30 p.m. - 9:30 p.m.
MGMT 0441-W01  MGMT_O  441  W01  Marketing Strategy  W2  Integrative, dynamic view of marketing strategy at both the corporate and business unit level. Understanding, developing, and evaluating brand strategies over the life of a product market. Strategies for: pioneering brands, late entry, growth, mature and declining markets, and defensive marketing. [0-0-0] Prerequisite: MGMT 202. and third-year standing. Workshop Online Learning Arranged Arranged

MGMT 0442-001  MGMT_O  442  001  Consumer Behaviour  W2  Consumer behaviour is at the heart of any successful business. A clear understanding of consumers is critical in managing the marketing function. Basic concepts and issues in consumer behaviour from a marketing manager's perspective. [0-0-0] Prerequisite: MGMT 202. and third-year standing. Lecture In Person Learning Wed 6:30 p.m. - 9:30 p.m.

MGMT 0449_A 101_MGMT_O  449  A  A_101  Special Topics in Marketing  W2  Latest concepts and issues in marketing. Marketing research, consumer behaviour, e-marketing, international marketing, sales management, and other related topics within the field of marketing. Not intended for topics routinely covered in the curriculum. Credit will be granted for only one of MGMT 449 or MGMT 349 when the subject matter is of the same nature. Prerequisite: Fourth-year standing. Lecture In Person Learning Mon 3:30 p.m. - 5:00 p.m.

MGMT 0449_A W01_MGMT_O  449  A  A_W01  Special Topics in Marketing  W2  Latest concepts and issues in marketing. Marketing research, consumer behaviour, e-marketing, international marketing, sales management, and other related topics within the field of marketing. Not intended for topics routinely covered in the curriculum. Credit will be granted for only one of MGMT 449 or MGMT 349 when the subject matter is of the same nature. Prerequisite: Fourth-year standing. Workshop In Person Learning Thu 11:00 a.m. - 12:30 p.m.

MGMT 0449_A W01_MGMT_O  449  A  A_W02  Special Topics in Marketing  W2  Latest concepts and issues in marketing. Marketing research, consumer behaviour, e-marketing, international marketing, sales management, and other related topics within the field of marketing. Not intended for topics routinely covered in the curriculum. Credit will be granted for only one of MGMT 449 or MGMT 349 when the subject matter is of the same nature. Prerequisite: Fourth-year standing. Workshop In Person Learning Wed 2:00 p.m. - 3:30 p.m.

MGMT 0449_A W01_MGMT_O  449  A  A_W03  Special Topics in Marketing  W2  Latest concepts and issues in marketing. Marketing research, consumer behaviour, e-marketing, international marketing, sales management, and other related topics within the field of marketing. Not intended for topics routinely covered in the curriculum. Credit will be granted for only one of MGMT 449 or MGMT 349 when the subject matter is of the same nature. Prerequisite: Fourth-year standing. Workshop In Person Learning Mon 9:30 a.m. - 11:00 a.m.

MGMT 0450 101_MGMT_O  450  101  Entrepreneurship and the Smaller Firm  W2  Exposure to the issues and challenges associated with starting a new entrepreneurial business. Students gain an appreciation of the challenges associated with creating a new venture. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 210, MGMT 230, MGMT 240, MGMT 250, MGMT 290. and third-year standing. Lecture In Person Learning Fri 9:30 a.m. - 11:00 a.m.

MGMT 0450-W01_MGMT_O  450  W01  Entrepreneurship and the Smaller Firm  W2  Exposure to the issues and challenges associated with starting a new entrepreneurial business. Students gain an appreciation of the challenges associated with creating a new venture. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 210, MGMT 230, MGMT 240, MGMT 250, MGMT 290. and third-year standing. Lecture In Person Learning Mon 12:30 p.m. - 2:00 p.m.

MGMT 0470-101_MGMT_O  470  101  Global Food Systems: Society, Ecology, Sustainability  W2  Evaluating food system sustainability issues, including management and technology alternatives, through the lenses of (1) systems-analytic (i.e. life cycle) thinking and tools, and (2) sustainable scale (relative to ecological carrying capacity), distributive justice, and equity allocation. Credit will be granted for only one of BIO 424, MGMT 470. [3-0-0] Prerequisite: Third-year standing. Equivalency: BIO 424 Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

MGMT 0480-001  MGMT_O  480  001  Law and Business  W2  Includes legal and regulatory frameworks. Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students gain knowledge, skills, and abilities needed to practice foundational nursing assessments and safe ethical care. [0-3-1.5] Prerequisite: All of NRSG 111, NRSG 126, NRSG 136. Weekly concepts will align with NRSG 136 intentional learning activities. Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.

MGMT 0520-101_MGMT_O  520  101  Entrepreneurship and the Smaller Firm  W2  Provides the background needed to identify legal issues and make informed decisions in instructing legal counsel and acting on legal advice. May cover product liability, tort, and intellectual property. [3-0-0] Prerequisite: MGMT 100. Third-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.

MGMT 0620-101_MGMT_O  620  101  Captive Service Learning and Consulting  W2  Provides the background needed to identify legal issues and make informed decisions in instructing legal counsel and acting on legal advice. May cover product liability, tort, and intellectual property. [3-0-0] Prerequisite: MGMT 100. Third-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Expansional In Person Learning Thu 11:00 a.m. - 2:00 p.m.


NLEK 043-001  NLEK_O  433  Special Topics in Language Practice and Pedagogy  W2  Integrates a language immersion course to enhance and improve proficiency. Focuses on language pertaining to a specific topic or language domain. The language of instruction is Nle?kepmx Language. May be offered on the Bachelor of Nle?kepmx Language Fluency program. [1-0-4] Corequisite: NLEK 351. Lecture Online Learning Arranged Arranged

NRSG 0105-001  NRSG_O  101  Nursing Lab Practice I  W2  Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students gain knowledge, skills, and abilities needed to practice foundational nursing assessments and safe ethical care. Weekly concepts will align with MSIS 136 intentional learning activities. [0-3-1.5] Prerequisite: All of MSIS 111, NRSG 112, NRSG 113, BIOS 131. Corequisite: All of NRSG 126, NRSG 136. Seminar In Person Learning Tue 12:30 p.m. - 2:00 p.m.

NRSG 0105-002  NRSG_O  101  Nursing Lab Practice I  W2  Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students gain knowledge, skills, and abilities needed to practice foundational nursing assessments and safe ethical care. Weekly concepts will align with MSIS 136 intentional learning activities. [0-3-1.5] Prerequisite: All of MSIS 111, NRSG 112, NRSG 113, BIOS 131. Corequisite: All of NRSG 126, NRSG 136. Seminar In Person Learning Wed 12:30 p.m. - 2:00 p.m.
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<td>2:30 p.m. - 5:30 p.m.</td>
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<td>NRSG 101-011</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
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<td>In Person Learning W2</td>
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<td>NRSG 101-012</td>
<td>Nursing Lab Practice I</td>
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<td>In Person Learning W2</td>
<td>2:30 p.m. - 5:30 p.m.</td>
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Explores the historical development of nursing knowledge, theory, contemporary understandings of nursing as a discipline, the current body of knowledge defining it, and the relationship between practice and theory. Development of teaching and learning knowledge, skills, and abilities. (3-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126, NRSG 136. Lecture In Person Learning Wed 8:00 a.m. - 9:30 a.m.

Understanding relational care and relational ethics to build knowledge, skills, and abilities to engage in relational practice with diverse individuals, families, and groups. Explore concepts and evidence for caring, therapeutic communication, and relational identity. Pass/Fail. (1.5-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Tue 9:30 a.m. - 11:00 a.m.

Introduction to adult health assessment with a focus on the older adult with stable chronic health conditions. Concepts will align with NRSG 101 and NRSG 136: Intentional learning activities. Nursing theories and evidence-informed frameworks guide approaches to inclusive care, chronic reasoning, care planning, and documentation. (3-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Wed 9:30 a.m. - 11:00 a.m.

This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. (3-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Wed 11:00 a.m. - 2:00 p.m.

This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. (1.5-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Wed 7:00 a.m. - 1:00 p.m.

This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. (1.5-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Wed 7:00 a.m. - 1:00 p.m.

This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. (1.5-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Wed 7:00 a.m. - 1:00 p.m.

This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. (1.5-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Thu 7:00 a.m. - 1:00 p.m.

This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. (1.5-0-0) Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BSCI 131. Concomitant: All of NRSG 101, NRSG 120, NRSG 123, NRSG 126. Lecture In Person Learning Thu 7:00 a.m. - 1:00 p.m.
This first nursing practicum develops knowledge, skills, and abilities to provide safe ethical nursing care to adults with stable chronic health challenges. Intentional learning activities integrate knowledge from NRSG 101 and NRSG 126. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 110, NRSG 111, NRSG 112, NRSG 113, BIOL 131. Corequisite: All of NRSG 101, NRSG 120; NRSG 122, NRSG 123, NRSG 126.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 intentional learning activities. [0-3-1.5] Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 101, NRSG 120; NRSG 122, NRSG 123, NRSG 126.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 intentional learning activities. [0-3-1.5] Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 101, NRSG 120; NRSG 122, NRSG 123, NRSG 126.
This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Seminar In Person Learning Fri 8:00 a.m. - 9:30 a.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Tue 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Tue 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Wed 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Thu 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Thu 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Fri 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Fri 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Thu 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 201 and provides additional opportunities to develop evidence-informed approaches for safe ethical care. Concepts will align with NRSG 237 Intentional learning activities. (0-3-1.5)
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 220; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Laboratory In Person Learning Fri 10:00 a.m. - 1:00 p.m.

This course is a continuation of NRSG 210, further expanding on the principles of pharmacology. Further expanding on knowledge and systematic approaches to safely and ethically administer drug therapy. [1.5-0-0]
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Lecture In Person Learning Fri 2:00 p.m. - 3:30 p.m.

This course is a continuation of NRSG 210, further expanding on the principles of pharmacology. Further expanding on knowledge and systematic approaches to safely and ethically administer drug therapy. [1.5-0-0]
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202; NRSG 222, NRSG 227, NRSG 237, BICK 232.
Lecture In Person Learning Wed 2:00 p.m. - 3:30 p.m.

Evidence-informed strategies and approaches of relational inquiry to build relational skills and capacity. Sociocultural constructs in relation to health and healing. Pass/Fail. [1.5-0-0]
Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 331. Corequisite: All of NRSG 202, NRSG 222, NRSG 227, NRSG 237, BICK 232.
Lecture In Person Learning Thu 2:10 p.m. - 3:30 p.m.
This course is a continuation of NRSG 236, further expanding on evidence-informed assessment and management of health challenges in both episodic and chronic illnesses. Concepts will align with NRSG 237 intentional learning activities. (1.5-0-0) Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. And second-year BSN-O standing. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Lecture In Person Learning Mon 9:30 a.m. - 11:00 a.m.

This course is a continuation of NRSG 236, further expanding on evidence-informed assessment and management of health challenges in both episodic and chronic illnesses. Concepts will align with NRSG 237 intentional learning activities. (1.5-0-0) Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. And second-year BSN-O standing. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Lecture In Person Learning Mon 9:30 a.m. - 11:00 a.m.

Theories, ethics and evidence-informed approaches to community health nursing including primary health care, population health, health maintenance and promotion, disease and injury prevention. Exploration of concepts of community-based assessment, planning, intervention and evaluation with community-as-client. (1.5-0-0) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O standing Corequisite: NRSG 236. Lecture In Person Learning Mon 11:00 a.m. - 12:30 p.m.

Evidence-informed promotion of mental well-being, assessment and management of episodic and chronic mental health challenges across the life span. Concepts will align with NRSG 239 intentional learning activities. (1.5-0-0) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O standing Corequisite: NRSG 210. Lecture In Person Learning Mon 11:00 a.m. - 12:30 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 223, NRSG 227, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BIOL 232. Experiential In Person Learning Tue 9:00 a.m. - 3:00 p.m.
Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

This second acute care practicum is a continuation of NRSG 236. Develops advancing knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.

Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 202 and NRSG 227. Pass/Fail. [0-6-0]

Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, NRSG 236, HINT 231. Corequisite: All of NRSG 202, NRSG 220, NRSG 223, NRSG 227, BOX 232. Experimental In Person Learning Thu 9:00 a.m. - 3:00 p.m.
Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care within varied community settings with diverse populations. Students will draw on principles of social justice and the social determinants of health to engage in evidenced-informed community assessments, health promotion/illness prevention activities, and health teaching. Pass/Fail. [0-6-0]. Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning W2 Fri 8:00 a.m. - 12:00 p.m.

Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care within varied community settings with diverse populations. Students will draw on principles of social justice and the social determinants of health to engage in evidenced-informed community assessments, health promotion/illness prevention activities, and health teaching. Pass/Fail. [0-6-0]. Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Tue 8:00 a.m. - 12:00 p.m.

Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care within varied community settings with diverse populations. Students will draw on principles of social justice and the social determinants of health to engage in evidenced-informed community assessments, health promotion/illness prevention activities, and health teaching. Pass/Fail. [0-6-0]. Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Wed 8:00 a.m. - 12:00 p.m.

Practicum in mental health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care within varied community settings with diverse populations. Students will draw on principles of social justice and the social determinants of health to engage in evidenced-informed community assessments, health promotion/illness prevention activities, and health teaching. Pass/Fail. [0-6-0]. Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Thu 8:00 a.m. - 12:00 p.m.

Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5]. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 232. Corequisite: All of NRSG 327, NRSG 337. Seminar In Person Learning Mon 11:00 a.m. - 12:30 p.m.

Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5]. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 232. Corequisite: All of NRSG 327, NRSG 337. Seminar In Person Learning Mon 11:00 a.m. - 12:30 p.m.
NRSG O 302-L05  NRSG O 302  L05  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L06  NRSG O 302  L06  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L07  NRSG O 302  L07  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L08  NRSG O 302  L08  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L09  NRSG O 302  L09  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L10  NRSG O 302  L10  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L11  NRSG O 302  L11  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 302-L12  NRSG O 302  L12  Nursing Lab Practice V  W2
Develops evidence-informed nursing practice through seminar, laboratory learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings. [0-2-1.5] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 211, BIOT 232. Corequisite: All of NRSG 327, NRSG II. Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.

NRSG O 313-003  NRSG O 313  003  Relational Practice V  W2
Understanding and respecting the complexities of difference and diversity with clients in nursing practice. A critical exploration of cultural identities and racism from an Indigenous perspective, facilitates development of evidence-informed practice for culturally safe care for all peoples in a variety of contexts (health care, research, institutions, and society). Pass/Fail: [1-0-0] Prerequisite: Third-year BSN-O Standing. Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.

NRSG O 313-004  NRSG O 313  004  Relational Practice V  W2
Understanding and respecting the complexities of difference and diversity with clients in nursing practice. A critical exploration of cultural identities and racism from an Indigenous perspective, facilitates development of evidence-informed practice for culturally safe care for all peoples in a variety of contexts (health care, research, institutions, and society). Pass/Fail: [1-0-0] Prerequisite: Third-year BSN-O Standing. Lecture In Person Learning Thu 11:00 a.m. - 2:00 p.m.

NRSG O 313-005  NRSG O 313  005  Relational Practice V  W2
Understanding and respecting the complexities of difference and diversity with clients in nursing practice. A critical exploration of cultural identities and racism from an Indigenous perspective, facilitates development of evidence-informed practice for culturally safe care for all peoples in a variety of contexts (health care, research, institutions, and society). Pass/Fail: [1-0-0] Prerequisite: Third-year BSN-O Standing. Lecture In Person Learning Wed 11:00 a.m. - 2:00 p.m.

NRSG O 313-006  NRSG O 313  006  Relational Practice V  W2
Understanding and respecting the complexities of difference and diversity with clients in nursing practice. A critical exploration of cultural identities and racism from an Indigenous perspective, facilitates development of evidence-informed practice for culturally safe care for all peoples in a variety of contexts (health care, research, institutions, and society). Pass/Fail: [1-0-0] Prerequisite: Third-year BSN-O Standing. Lecture In Person Learning Fri 11:00 a.m. - 2:00 p.m.

NRSG O 327-002  NRSG O 327  002  Health & Healing V  W2
Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [0-0-2.0] [over 6 weeks]. Lecture In Person Learning Mon 8:00 a.m. - 11:00 a.m.

NRSG O 327-003  NRSG O 327  003  Health & Healing V  W2
Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [0-0-2.0] [over 6 weeks]. Lecture In Person Learning Mon 8:00 a.m. - 11:00 a.m.

NRSG O 328-001  NRSG O 328  001  Health of the Childbearing Family  W2
Nursing within a health promotion framework in both community and acute care settings. Evidence-informed guidelines for care of the childbearing family during pregnancy, labor, birth, and postpartum will be drawn on to inform assessment and management of holistic, ethical care. Concepts will align with NRSG 338 Intentional learning activities. Restricted to students in the Bachelor of Science in Nursing. [3-0-0] [over 6 weeks]. Lecture In Person Learning Mon 8:00 a.m. - 11:00 a.m.

NRSG O 328-004  NRSG O 328  004  Health of the Childbearing Family  W2
Nursing within a health promotion framework in both community and acute care settings. Evidence-informed guidelines for care of the childbearing family during pregnancy, labor, birth, and postpartum will be drawn on to inform assessment and management of holistic, ethical care. Concepts will align with NRSG 338 Intentional learning activities. Restricted to students in the Bachelor of Science in Nursing. [3-0-0] [over 6 weeks]. Lecture In Person Learning Mon 8:00 a.m. - 11:00 a.m.
Child health nursing within a health promotion framework in both community and acute care settings. Family-centered care and interprofessional collaboration will be examined with a focus on understanding the diversity and unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339 intentional learning activities. Restricted to students in the Bachelor of Science in Nursing [3-0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 339. Lecture In Person Learning Mon 8:10 a.m. - 11:00 a.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.

This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail [3-16-0] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327. Experimental In Person Learning Tue Wed 7:00 a.m. - 3:00 p.m.
NRSG 337 P27
NRSG O 337
P27 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P28
NRSG O 337
P28 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P29
NRSG O 337
P29 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P30
NRSG O 337
P30 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P31
NRSG O 337
P31 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P32
NRSG O 337
P32 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P33
NRSG O 337
P33 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P34
NRSG O 337
P34 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P35
NRSG O 337
P35 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 337 P36
NRSG O 337
P36 Nursing Practice in Surgical Settings W2
In Person Learning Thu Fri
Nursing Practice in Surgical Settings
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P31
NRSG O 338
P31 Nursing Practice with Childbearing Families W2
In Person Learning Tue
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P32
NRSG O 338
P32 Nursing Practice with Childbearing Families W2
In Person Learning Wed
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P33
NRSG O 338
P33 Nursing Practice with Childbearing Families W2
In Person Learning Thu
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P34
NRSG O 338
P34 Nursing Practice with Childbearing Families W2
In Person Learning Fri
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P35
NRSG O 338
P35 Nursing Practice with Childbearing Families W2
In Person Learning Tue
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P36
NRSG O 338
P36 Nursing Practice with Childbearing Families W2
In Person Learning Wed
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P37
NRSG O 338
P37 Nursing Practice with Childbearing Families W2
In Person Learning Thu
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P38
NRSG O 338
P38 Nursing Practice with Childbearing Families W2
In Person Learning Fri
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P39
NRSG O 338
P39 Nursing Practice with Childbearing Families W2
In Person Learning Tue
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P40
NRSG O 338
P40 Nursing Practice with Childbearing Families W2
In Person Learning Wed
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P41
NRSG O 338
P41 Nursing Practice with Childbearing Families W2
In Person Learning Thu
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P42
NRSG O 338
P42 Nursing Practice with Childbearing Families W2
In Person Learning Fri
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P43
NRSG O 338
P43 Nursing Practice with Childbearing Families W2
In Person Learning Thu
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P44
NRSG O 338
P44 Nursing Practice with Childbearing Families W2
In Person Learning Fri
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
W2

NRSG 338 P45
NRSG O 338
P45 Nursing Practice with Childbearing Families W2
In Person Learning Tue
Nursing Practice with Childbearing Families
7:00 a.m. - 3:00 p.m.
This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in newborn family health contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 338. 

Experiential In Person Learning Wed 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in newborn family health contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 338. 

Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in newborn family health contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 338. 

Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in a variety child health care contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 339. 

Experiential In Person Learning Wed 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in a variety child health care contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 339. 

Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in a variety child health care contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 339. 

Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in a variety child health care contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 339. 

Experiential In Person Learning Sat 7:00 a.m. - 3:00 p.m.

This specialty practicum develops beginning knowledge, skills, and abilities to provide evidence-informed nursing care in a variety child health care contexts. Intentional learning activities integrate knowledge from NRSG 329. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. 

Corequisite: NRSG 329.

Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Cronet: NRSG 339. 

Experiential In Person Learning Sun 7:00 a.m. - 3:00 p.m.
NRSG 422-002 NRSG 423 002 Leadership W2 Nursing leadership at various levels of the healthcare system with an emphasis on leadership, decision-making, and change theories. Consider the impact of trends, issues, and ethics on leadership in nursing. [3-0-0] Prerequisite: Fourth-Year BSN-O Standing Co-requisite: All of NRSG 421, NRSG 422. Lecture In Person Learning Wed Fri 11:00 a.m. - 2:00 p.m.

NRSG 422-002 NRSG 423 002 Advanced Clinical Reasoning for Care of the Com W2 Theory and research for evidence-informed practice for the assessment and care of the complex, unstable, acutely ill patient. Understanding challenging etiologies, pathophysiologies, interventions, diagnostics and intervention to inform advanced clinical reasoning. [3-0-0] Prerequisite: NRSG 423. Fourth-Year BSN-O Standing Lecture In Person Learning Thu Tu 11:00 a.m. - 2:00 p.m.

NRSG 424-001 NRSG 424 001 Primary Care Nursing I W2 Theory and research for ethical, evidence-informed practice for mental health nursing. Develops advanced knowledge of the pathophysiology, etiology, manifestations, diagnostics and intervention to inform care of patients experiencing acute mental health challenges. [3-0-0] Prerequisite: All of NRSG 129, NRSG 130. Fourth-Year BSN-O Standing Lecture In Person Learning Thu Tu 2:00 p.m. - 5:00 p.m.

NRSG 427-001 NRSG 427 001 Advanced Mental Health W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 431-P07 NRSG 431 007 Capstone Acute Care Preceptorship W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 431-P08 NRSG 431 008 Capstone Acute Care Preceptorship W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 431-P09 NRSG 431 009 Capstone Acute Care Preceptorship W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 431-P10 NRSG 431 010 Capstone Acute Care Preceptorship W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 431-P11 NRSG 431 011 Capstone Acute Care Preceptorship W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 431-P12 NRSG 431 012 Capstone Acute Care Preceptorship W2 Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail: [240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, and the recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 432-P03 NRSG 432 003 Capstone Community Project W2 Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Pass/Fail: [Dependent on availability. 4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee. Experiential In Person Learning Mon 11:00 a.m. - 2:00 p.m.

NRSG 432-P04 NRSG 432 004 Capstone Community Project W2 Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Pass/Fail: [Dependent on availability. 4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee. Experiential In Person Learning Mon 11:00 a.m. - 2:00 p.m.

NRSG 432-P05 NRSG 432 005 Capstone Community Project W2 Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Pass/Fail: [Dependent on availability. 4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee. Experiential In Person Learning Mon 11:00 a.m. - 2:00 p.m.

NRSG 434-B_F08 NRSG 434 008 Practice Electives W2 Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Pass/Fail: [Dependent on availability. 4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 434-B_F09 NRSG 434 009 Practice Electives W2 Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Pass/Fail: [Dependent on availability. 4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged

NRSG 434-B_F10 NRSG 434 010 Practice Electives W2 Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Pass/Fail: [Dependent on availability. 4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee. Experiential In Person Learning Arranged Arranged
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Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts*. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail. *Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432, a risk of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee.

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<th>Hours</th>
<th>Mode of Delivery</th>
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<td>NRSG 438-B_P12</td>
<td>Community Health Nursing Preceptorship</td>
<td>Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with individuals, families and populations in the community context. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail. *Dependent on availability: 4 credits</td>
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<td>438</td>
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<td>NRSG 439-P03</td>
<td>Global Health Practicum</td>
<td>Advanced practicum provides opportunities to engage in an immersive global health experience in a variety of settings. Students will practice in collaboration with global health partners. The focus is on application of global health and cultural safety competencies. Pass/Fail. *Dependent on availability and cost of travel in addition to course tuition. Prerequisite: All of NRSG 421, NRSG 422, NRSG 423 and one of NRSG 429, HINT 429. and approval of application.</td>
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<td>P03</td>
<td>Global Health Practicum</td>
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<td>NRSG 439-P04</td>
<td>Global Health Practicum</td>
<td>Advanced practicum provides opportunities to engage in an immersive global health experience in a variety of settings. Students will practice in collaboration with global health partners. The focus is on application of global health and cultural safety competencies. Pass/Fail. *Dependent on availability and cost of travel in addition to course tuition. Prerequisite: All of NRSG 421, NRSG 422, NRSG 423 and one of NRSG 429, HINT 429. and approval of application.</td>
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<td>NRSG 439-P14</td>
<td>Global Health Practicum</td>
<td>Advanced practicum provides opportunities to engage in an immersive global health experience in a variety of settings. Students will practice in collaboration with global health partners. The focus is on application of global health and cultural safety competencies. Pass/Fail. *Dependent on availability and cost of travel in addition to course tuition. Prerequisite: All of NRSG 421, NRSG 422, NRSG 423 and one of NRSG 429, HINT 429. and approval of application.</td>
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<td>NRSG 440-B_P02</td>
<td>Research Preceptorship</td>
<td>Preceptored advanced practice course provides the opportunity to engage in research with a faculty supervisor. Application of knowledge, skills, and abilities in nursing and health-related research. Pass/Fail. (4 credits)</td>
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<td>NRSG 507-001</td>
<td>Quantitative Research</td>
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<td>NRSG 523-001</td>
<td>Teaching and Learning in Nursing Practice</td>
<td>Exploring concepts and frameworks foundational to the role of the primary care nurse in serving diverse populations, reducing health disparities, and promoting equity. Examine competencies including assessment approaches, care planning, and evaluation of care, and build evidence-informed knowledge of disease prevention, health promotion, and management of health conditions across the life span.</td>
<td>Lecture Online Learning</td>
<td>523</td>
<td>001</td>
<td>Teaching and Learning in Nursing Practice</td>
<td>W2</td>
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<td>NRSG 524-001</td>
<td>Primary Care Nursing I</td>
<td>Explores the integration of evidence-based practice into the delivery of quality healthcare to improve health outcomes. This course includes a 75-hour practicum component. [3-0-0]</td>
<td>Lecture Online Learning</td>
<td>524</td>
<td>001</td>
<td>Primary Care Nursing I</td>
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<tr>
<td>NRSG 543-001</td>
<td>Nursing Leadership and Management in Practice</td>
<td>Develops essential competencies for management in healthcare leadership positions and integrates evidence-based management concepts into the delivery of quality healthcare to improve health outcomes. This course includes a 75-hour practicum component. [3-0-0]</td>
<td>Lecture Online Learning</td>
<td>543</td>
<td>001</td>
<td>Nursing Leadership and Management in Practice</td>
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<tr>
<td>NRSG 554-001</td>
<td>Advanced Research Methods</td>
<td>Research design issues relevant to nursing and health research, including the conduct of interdisciplinary research, issues in quantitative and qualitative research, design and conceptual complexities of mixed and multiple methods designs, community-based research. This course is restricted to students in the PhD in Nursing program (PHD-D, NR5) unless permission is given by the program coordinator. Prerequisite: All of NRSG 506, NRSG 507. Or equivalent graduate level quantitative and qualitative methods courses.</td>
<td>Lecture Online Learning</td>
<td>554</td>
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<td>Advanced Research Methods</td>
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<tr>
<td>NRSG 598-003</td>
<td>Scholarly Project</td>
<td>Integrative practicum in a student's chosen area of practice. Students will critically analyze, synthesize, and apply advanced knowledge to promote change and contribute to knowledge development. [6-0-0]</td>
<td>Independent Study Online Learning</td>
<td>598</td>
<td>003</td>
<td>Scholarly Project</td>
<td>W2</td>
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<td>NRSG 598-201</td>
<td>Research Thesis</td>
<td>All of NRSG 500, NRSG 504.</td>
<td>Lecture Online Learning</td>
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<td>Research Thesis</td>
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<td>NYSI 331-001</td>
<td>Language Practice and Pedagogy: Praxis in Differ-W2</td>
<td>Language acquisition pedagogies in and through practice. The language of instruction is Nylakin. Restricted to students in the Bachelor of Nylakin Language Fluency program. [1-0-4]</td>
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<td>NYSI 331-F01</td>
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<td>F01</td>
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<td>NYSI 351-A01</td>
<td>Language Applications: Numeracy and Math W2</td>
<td>Numeracy and math frameworks from a Spine perspective towards increased proficiency in functional numeracy. The language of instruction is Nylakin. Restricted to students in the Bachelor of Nylakin Language Fluency program [2-0-4]</td>
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<td>NYSI 351-E01</td>
<td>Language Applications: Numeracy and Math W2</td>
<td>Numeracy and math frameworks from a Spine perspective towards increased proficiency in functional numeracy. The language of instruction is Nylakin. Restricted to students in the Bachelor of Nylakin Language Fluency program [2-0-4]</td>
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<tr>
<td>NYSI 333-001</td>
<td>Special Topics in Language Practice and Pedagogy W2</td>
<td>Intensive language immersion course to enhance and improve proficiency. Focused on language pertaining to a specific topic or language domain. The language of instruction is Nylakin. May be offered on the land. Restricted to students in the Bachelor of Nylakin Language Fluency program. [0-1-3]</td>
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*Restrictions, prerequisites, and approvals vary based on specific courses.*
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<td>PHYS_0</td>
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<td>W2</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
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<tr>
<td>121-104</td>
<td>PHYS_0</td>
<td>L04</td>
<td>W2</td>
<td>2:30 p.m. - 5:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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<td>121-103</td>
<td>PHYS_0</td>
<td>L03</td>
<td>W2</td>
<td>6:30 p.m. - 9:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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<tr>
<td>121-107</td>
<td>PHYS_0</td>
<td>L07</td>
<td>W2</td>
<td>1:00 p.m. - 4:00 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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<td>121-106</td>
<td>PHYS_0</td>
<td>L08</td>
<td>W2</td>
<td>6:30 p.m. - 9:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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<tr>
<td>121-109</td>
<td>PHYS_0</td>
<td>L09</td>
<td>W2</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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<tr>
<td>121-110</td>
<td>PHYS_0</td>
<td>L10</td>
<td>W2</td>
<td>2:30 p.m. - 5:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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<td>121-111</td>
<td>PHYS_0</td>
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<td>W2</td>
<td>6:30 p.m. - 9:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
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<td>121-112</td>
<td>PHYS_0</td>
<td>L12</td>
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<td>9:30 a.m. - 12:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
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<td>121-113</td>
<td>PHYS_0</td>
<td>T2A</td>
<td>W2</td>
<td>3:00 p.m. - 4:00 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
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<td>121-114</td>
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<td>T2B</td>
<td>W2</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>Discussion</td>
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<td>121-115</td>
<td>PHYS_0</td>
<td>T2C</td>
<td>W2</td>
<td>1:00 p.m. - 2:00 p.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>Discussion</td>
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<td>121-116</td>
<td>PHYS_0</td>
<td>T2D</td>
<td>W2</td>
<td>8:00 a.m. - 9:00 a.m.</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>In Person Learning</td>
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</table>
Physics primarily for students majoring in the physical sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with applications to the physical sciences. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Discussion: In Person Learning Mon 2:30 p.m. - 3:00 p.m.

Physics primarily for students majoring in the physical sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with applications to the physical sciences. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Discussion: In Person Learning Mon 1:00 p.m. - 2:00 p.m.

Physics primarily for students majoring in the physical sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with applications to the physical sciences. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Arranged Arranged

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Discussion: In Person Learning Arranged Arranged

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Lecture: In Person Learning Wed Fri 5:00 p.m. - 6:30 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Mon 2:30 p.m. - 5:30 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Mon 6:30 p.m. - 9:30 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Tue 9:30 a.m. - 12:30 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Tue 2:30 p.m. - 5:30 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Tue 6:30 p.m. - 9:30 p.m.

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3-1) Prerequisite: One of MATH 100, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 103.

Laboratory: In Person Learning Wed 9:30 a.m. - 12:30 p.m.
PHYS 122-L07 PHYS 0 122 L07 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Wed 2:30 p.m. - 5:30 p.m.

PHYS 122-L08 PHYS 0 122 L08 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Wed 6:30 p.m. - 9:30 p.m.

PHYS 122-L09 PHYS 0 122 L09 Introductory Physics for the Life Sciences II W3

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

PHYS 122-L10 PHYS 0 122 L10 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Thu 2:30 p.m. - 5:30 p.m.

PHYS 122-L11 PHYS 0 122 L11 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Thu 6:30 p.m. - 9:30 p.m.

PHYS 122-L13 PHYS 0 122 L13 Introductory Physics for the Life Sciences II W3

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Mon 2:30 p.m. - 5:30 p.m.

PHYS 122-L14 PHYS 0 122 L14 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Mon 6:30 p.m. - 9:30 p.m.

PHYS 122-L15 PHYS 0 122 L15 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

PHYS 122-L16 PHYS 0 122 L16 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Tue 2:30 p.m. - 5:30 p.m.

PHYS 122-L17 PHYS 0 122 L17 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Tue 6:30 p.m. - 9:30 p.m.

PHYS 122-L18 PHYS 0 122 L18 Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

PHYS 122-T0A PHYS 0 122 T0A Introductory Physics for the Life Sciences II W2

Physics primarily for students majoring in the life sciences. Simple harmonic motion, sound, physical and wave optics, electricity, electric circuits, and magnetism with biological applications. Experimental laboratory investigations in electricity, magnetism, waves and optics. Credit will be granted for only one of PHYS 121 and PHYS 122. Students with PHYS 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. [3-3-1] Prerequisite: One of MATH 101, MATH 116 and one of PHYS 111, PHYS 112. Corequisite: One of MATH 101, MATH 105.

Discussion In Person Learning Thu 1:00 p.m. - 2:00 p.m.
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<th>Course Code</th>
<th>Course Title</th>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Days</th>
<th>Time</th>
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<td>PHYS 122-TRB</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>122</td>
<td>Lecture</td>
<td>W2</td>
<td>Tue Thu</td>
<td>9:00 a.m. - 10:00 a.m.</td>
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<td>PHYS 122-TOC</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>122</td>
<td>Lecture</td>
<td>W2</td>
<td>Tue Thu</td>
<td>1:00 p.m. - 2:00 p.m.</td>
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<tr>
<td>PHYS 122-TOG</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>122</td>
<td>Lecture</td>
<td>W3</td>
<td>Tue Thu</td>
<td>11:00 a.m. - 12:00 p.m.</td>
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<td>PHYS 122-TBH</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>122</td>
<td>Laboratory</td>
<td>W2</td>
<td>Wed Fri</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>PHYS 122-XM1</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>122</td>
<td>Lecture</td>
<td>W2</td>
<td>Mon</td>
<td>12:00 p.m. - 1:00 p.m.</td>
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<tr>
<td>PHYS 122-XM2</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>122</td>
<td>Lecture</td>
<td>W2</td>
<td>Mon</td>
<td>12:00 p.m. - 1:00 p.m.</td>
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**PHYS 122-TRB**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 9:00 a.m. - 10:00 a.m.

**PHYS 122-TOC**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 1:00 p.m. - 2:00 p.m.

**PHYS 122-TOG**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W3
- **Days:** Tue Thu
- **Time:** 11:00 a.m. - 12:00 p.m.

**PHYS 122-TBH**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Laboratory
- **Section:** W2
- **Days:** Wed Fri
- **Time:** 4:00 p.m. - 5:00 p.m.

**PHYS 122-XM1**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-XM2**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-TRB**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 9:00 a.m. - 10:00 a.m.

**PHYS 122-TOC**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 1:00 p.m. - 2:00 p.m.

**PHYS 122-TOG**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W3
- **Days:** Tue Thu
- **Time:** 11:00 a.m. - 12:00 p.m.

**PHYS 122-TBH**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Laboratory
- **Section:** W2
- **Days:** Wed Fri
- **Time:** 4:00 p.m. - 5:00 p.m.

**PHYS 122-XM1**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-XM2**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-TRB**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 9:00 a.m. - 10:00 a.m.

**PHYS 122-TOC**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 1:00 p.m. - 2:00 p.m.

**PHYS 122-TOG**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W3
- **Days:** Tue Thu
- **Time:** 11:00 a.m. - 12:00 p.m.

**PHYS 122-TBH**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Laboratory
- **Section:** W2
- **Days:** Wed Fri
- **Time:** 4:00 p.m. - 5:00 p.m.

**PHYS 122-XM1**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-XM2**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-TRB**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 9:00 a.m. - 10:00 a.m.

**PHYS 122-TOC**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 1:00 p.m. - 2:00 p.m.

**PHYS 122-TOG**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W3
- **Days:** Tue Thu
- **Time:** 11:00 a.m. - 12:00 p.m.

**PHYS 122-TBH**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Laboratory
- **Section:** W2
- **Days:** Wed Fri
- **Time:** 4:00 p.m. - 5:00 p.m.

**PHYS 122-XM1**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-XM2**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Mon
- **Time:** 12:00 p.m. - 1:00 p.m.

**PHYS 122-TRB**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 9:00 a.m. - 10:00 a.m.

**PHYS 122-TOC**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W2
- **Days:** Tue Thu
- **Time:** 1:00 p.m. - 2:00 p.m.

**PHYS 122-TOG**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Lecture
- **Section:** W3
- **Days:** Tue Thu
- **Time:** 11:00 a.m. - 12:00 p.m.

**PHYS 122-TBH**
- **Course Title:** Introductory Physics for the Life Sciences II
- **CRN:** 122
- **Type:** Laboratory
- **Section:** W2
- **Days:** Wed Fri
- **Time:** 4:00 p.m. - 5:00 p.m.
<table>
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<tr>
<th>Course Code</th>
<th>Description</th>
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<tr>
<td>PHYS_O 232-L01</td>
<td>Modern Physics Laboratory</td>
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<td>PHYS_O 232-L02</td>
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<td>PHYS_O 305-101</td>
<td>Introduction to Biophysics</td>
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<td>PHYS_O 329-101</td>
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<td>PHYS_O 400-C01</td>
<td>Introduction to Elementary Particles</td>
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<td>PHYS_O 441-101</td>
<td>Experimental Physics II</td>
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<td>PHYS_O 441-L01</td>
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<td>PHYS_O 448-A_101</td>
<td>Directed Studies in Physics</td>
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<td>PHYS_O 544-L01</td>
<td>Radiation Biophysics</td>
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<td>PHYS_O 649-B_01</td>
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<td>PDU_O 100-101</td>
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<tr>
<td>POLI 230-101</td>
<td>Introduction to Canadian Politics</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tu-Th</td>
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<td>POLI 270-101</td>
<td>Comparative Law and Politics</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>PSY1 210-101</td>
<td>Analysis of politics in South America</td>
<td>W2</td>
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<td>POLI 319-101</td>
<td>Politics of South America</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>PSY1 327-101</td>
<td>Introduction to Data Analysis</td>
<td>W2</td>
<td>Seminar</td>
<td>In Person Learning</td>
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<td>PSY1 331-101</td>
<td>Gender and International Relations</td>
<td>W2</td>
<td>Seminar</td>
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<td>POLI 365-101</td>
<td>Gender and International Relations</td>
<td>W2</td>
<td>Lecture</td>
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<td>Mon-Thu</td>
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<tr>
<td>PSY1 366-101</td>
<td>Introduction to Social Psychology</td>
<td>W2</td>
<td>Seminar</td>
<td>In Person Learning</td>
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<tr>
<td>PSY1 400-101</td>
<td>Introduction to Social Psychology</td>
<td>W2</td>
<td>Seminar</td>
<td>In Person Learning</td>
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<tr>
<td>PSY1 430-101</td>
<td>Advanced International Relations Theory</td>
<td>W2</td>
<td>Seminar</td>
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<td>Mon-Thu</td>
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<td>PSY1 470-101</td>
<td>Advanced International Relations Theory</td>
<td>W2</td>
<td>Seminar</td>
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<td>Mon-Thu</td>
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<td>PSY1 111-101</td>
<td>Introduction to Psychology</td>
<td>W2</td>
<td>Seminar</td>
<td>In Person Learning</td>
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<tr>
<td>PSY1 121-101</td>
<td>Introduction to Psychology</td>
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<td>Seminar</td>
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<td>PSY1 220-102</td>
<td>Life-span Development</td>
<td>W2</td>
<td>Seminar</td>
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<tr>
<td>PSY1 230-001</td>
<td>Biopsychology of Behaviour</td>
<td>W2</td>
<td>Seminar</td>
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<td>PSY1 245-101</td>
<td>Personality</td>
<td>W2</td>
<td>Seminar</td>
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<td>PSY1 252-101</td>
<td>Introduction to Social Psychology</td>
<td>W2</td>
<td>Seminar</td>
<td>In Person Learning</td>
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<tr>
<td>PSY1 273-101</td>
<td>Introduction to Data Analysis</td>
<td>W2</td>
<td>Seminar</td>
<td>In Person Learning</td>
<td>Tue-Thu</td>
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Notes:
- [3-0-0]: 3 credits, 0 lab hours, 0 seminar hours.
- [3-2-0]: 3 credits, 2 lab hours, 0 seminar hours.
- [4-0-0]: 4 credits, 0 lab hours, 0 seminar hours.
- [5-0-0]: 5 credits, 0 lab hours, 0 seminar hours.
- [6-3-0]: 6 credits, 3 lab hours, 0 seminar hours.
- [7-0-0]: 7 credits, 0 lab hours, 0 seminar hours.
An examination of memory systems and how they work. Topics will focus on how we input, store, and retrieve memories; the systems that process these memories; and the disruptions of memory in amnesia, false memory, and eyewitness testimony. [3-0-0] Prerequisite: Two of PSYO 210, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 286, PSYO 289, or 6 credits of 200-level Psychology.

Critical survey of research and theory on relationship between psychological factors (behavior, emotion, cognition, personality, and interpersonal relationships) and health. Topics include: stress and health, coping with stress, social support, health behaviors (e.g., physical activity), and psychosocial aspects of chronic illness. [3-0-0] Prerequisite: Two of PSYO 210, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 286, PSYO 289, or 6 credits of 200-level Psychology.

Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

Forced classification of ADHD, learning disorders, and specific learning disabilities. Students will gain additional experience in the use of standard statistical computer programs. [3-0-0] Prerequisite: A score of 76% or higher in PSYO 372. and permission of the department head.

Lecture Online Learning Mon Wed 12:30 p.m. - 2:00 p.m.

Cognitive, social, and biological perspectives on humour and comedy. Applications of humour research in educational, business, and clinical settings, as well as in everyday life. Prerequisite: All of PSYO 111, PSYO 121, and third-year standing.

Lecture Online Learning Tue Thu 9:30 a.m. - 11:00 a.m.

An intensive examination of selected topics and issues in developmental psychology. This course will not be offered each term; check list of current offerings. May be repeated on different topics for a maximum of 6 credits during complete program of study.

Lecture In Person Learning Tue Thu 11:00 a.m. - 1:00 p.m.

An intensive examination of selected advanced topics and issues in psychology. Topics may be repeated on a different topic for a maximum of 3 credits during complete program of study.

Lecture In Person Learning Mon Wed 10:00 a.m. - 11:00 a.m.

Lecture In Person Learning Mon Wed 10:00 a.m. - 11:00 a.m.

An intensive examination of selected advanced topics and issues in psychology. May be repeated on a different topic for a maximum of 6 credits during complete program of study.

Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.
<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>PSYO_O 511-101</td>
<td>Advanced Clinical Diagnostics</td>
<td>W2</td>
<td>Lecture</td>
<td>Wed</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<td>PSYO_O 515-101</td>
<td>Psychological Assessment II</td>
<td>W2</td>
<td>Lecture</td>
<td>Wed</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<td>PSYO_O 517-101</td>
<td>Psychological Intervention II: Advanced Topics in W3</td>
<td>W2</td>
<td>Lecture</td>
<td>Wed</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<tr>
<td>PSYO_O 599-101</td>
<td>Master's Thesis</td>
<td>W2</td>
<td>Thesis</td>
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<td>SOCI_O 111-101</td>
<td>Introduction to Sociology</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<td>SOCI_O 111-102</td>
<td>Introduction to Sociology</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon Fri</td>
<td>2:00 p.m. - 3:00 p.m.</td>
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<td>SOCI_O 200-101</td>
<td>Foundations of Sociological Thought</td>
<td>W2</td>
<td>Lecture</td>
<td>Tue Thu</td>
<td>11:00 a.m. - 12:30 p.m.</td>
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<tr>
<td>SOCI_O 216-101</td>
<td>Media and Society</td>
<td>W2</td>
<td>Lecture</td>
<td>Tue Thu</td>
<td>12:30 p.m. - 2:00 p.m.</td>
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<tr>
<td>SOCI_O 246-101</td>
<td>Sociology of Sports</td>
<td>W2</td>
<td>Lecture</td>
<td>Wed Fri</td>
<td>11:00 a.m. - 12:30 p.m.</td>
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<td>SOCI_O 249-101</td>
<td>Crime and Society</td>
<td>W2</td>
<td>Lecture</td>
<td>Wed Fri</td>
<td>11:00 a.m. - 12:30 p.m.</td>
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<tr>
<td>SOCI_O 263-101</td>
<td>Political Sociology</td>
<td>W2</td>
<td>Lecture</td>
<td>Tue Thu</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>SOCI_O 305-101</td>
<td>Sociology of Families</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon</td>
<td>12:30 p.m. - 2:00 p.m.</td>
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<tr>
<td>SOCI_O 362_B_101</td>
<td>Social Inequality</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<td>SOCI_O 371_B_101</td>
<td>Deviance and Social Control</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon</td>
<td>3:30 p.m. - 5:00 p.m.</td>
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<td>SOCI_O 377-101</td>
<td>Contemporary Sociological Theory</td>
<td>W2</td>
<td>Lecture</td>
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<td>8:00 a.m. - 11:00 a.m.</td>
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<td>SOCI_O 411-C_101</td>
<td>Special Studies in Canadian Society</td>
<td>W2</td>
<td>Seminar</td>
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<td>SOCI_O 415-101</td>
<td>Feminist Theory</td>
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<td>Seminar</td>
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<td>SOCI_O 465-101</td>
<td>Nations and nationalism</td>
<td>W2</td>
<td>Seminar</td>
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<td>SOCI_O 496_B_101</td>
<td>Advanced Studies in Sociology</td>
<td>W3</td>
<td>Seminar</td>
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<td>SOCW_O 513-001</td>
<td>Assessment Skills for Clinical Social Work</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<td>SOCW_O 513-002</td>
<td>Assessment Skills for Clinical Social Work</td>
<td>W2</td>
<td>Lecture</td>
<td>Mon</td>
<td>5:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>SOCW_O 515-001</td>
<td>Social Welfare Policy in Canada</td>
<td>W2</td>
<td>Lecture</td>
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<td>11:00 a.m. - 2:00 p.m.</td>
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<td>SOCW_O 518-001</td>
<td>Integrative Seminar for Field Education</td>
<td>W2</td>
<td>Lecture</td>
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<td>Integrative Seminar for Field Education</td>
<td>W2</td>
<td>Lecture</td>
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<td>11:00 a.m. - 2:15 p.m.</td>
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STAT_O 531-001
SOCW_O 531 002
Anti-Racist and Anti-Oppressive Clinical Practice
W2
Provides an opportunity to expand theoretical and analytical foundation in the awareness, knowledge, understanding, and skills needed to effectively carry out anti-oppressive social work practice. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.

STAT_O 551-001
SOCW_O 551 001
Research Knowledge and Evidence in Clinical Set W2
Knowledge and skills for utilizing empirical evidence to guide clinical social work practice. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Mon 5:00 p.m. - 8:00 p.m.

STAT_O 555-001
SOCW_O 555 001
Organizations and Leadership W2
Knowledge of human service organizations and tools for effective leadership. Restricted to students in the M.S.W. program. Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

STAT_O 555-002
SOCW_O 555 002
Organizations and Leadership W2
Knowledge of human service organizations and tools for effective leadership. Restricted to students in the M.S.W. program. Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

STAT_O 558-001
SOCW_O 558 001
Advanced Integrative Seminar for Field Educator W2
Integrates theoretical knowledge and practice experience in direct/clinical settings. This course is graded on a pass/fail basis. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Fri (Alternate weeks) 11:00 a.m. - 2:00 p.m.

STAT_O 558-002
SOCW_O 558 002
Advanced Integrative Seminar for Field Educator W2
Integrates theoretical knowledge and practice experience in direct/clinical settings. This course is graded on a pass/fail basis. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Fri (Alternate weeks) 11:00 a.m. - 2:00 p.m.

STAT_O 598-001
SOCW_O 598 002
Graduating Paper W2
A scholarly paper in an area of interest that conforms to the demands of a peer-reviewed social work journal. Pass/Fail. Independent Study In Person Learning Arranged Arranged

SOCW_O 589-000
SOCW_O 589 002
Thesis W2
An independent research or scholarly work which aims to develop knowledge and practice implications for clinical social work practice. Pass/Fail. Thesis In Person Learning Arranged Arranged

SPAN_O 302-001
SPAN_O 302 001
Beginners' Spanish II W2
Development of listening, speaking, reading, and writing in Spanish. Completes level A1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: Either a) a score of 70% or higher in Spanish 11 or b) SPAN 101. Lecture In Person Learning Mon Wed Fri 9:00 a.m. - 10:00 a.m.

SPAN_O 302-002
SPAN_O 302 002
Beginners' Spanish II W2
Development of listening, speaking, reading, and writing in Spanish. Completes level A1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: Either a) a score of 70% or higher in Spanish 11 or b) SPAN 101. Lecture In Person Learning Mon Wed Fri 10:00 a.m. - 11:00 a.m.

SPAN_O 302-003
SPAN_O 302 003
Beginners' Spanish II W2
Development of listening, speaking, reading, and writing in Spanish. Completes level A1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: Either a) a score of 70% or higher in Spanish 11 or b) SPAN 101. Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.

SPAN_O 302-004
SPAN_O 302 004
Beginners' Spanish II W2
Development of listening, speaking, reading, and writing in Spanish. Completes level A1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: Either a) a score of 70% or higher in Spanish 11 or b) SPAN 101. Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

SPAN_O 202-001
SPAN_O 202 001
Advanced Beginners' Spanish II W2
A continuation of SPAN 201. Grammar, composition, oral practice, and reading. Completes level A2 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: SPAN 201. Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

SPAN_O 202-002
SPAN_O 202 002
Advanced Beginners' Spanish II W2
A continuation of SPAN 201. Grammar, composition, oral practice, and reading. Completes level A2 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: SPAN 201. Lecture In Person Learning Mon Wed Fri 12:00 p.m. - 1:00 p.m.

SPAN_O 302-001
SPAN_O 302 001
Intermediate Spanish II W2
A continuation of SPAN 301. Intermediate grammar, composition, oral practice, and reading. Completes level B1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: SPAN 301. Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

SPAN_O 402-001
SPAN_O 402 001
Advanced Spanish II W2
Advanced grammar, composition, oral practice, and reading. Corresponds to level B2 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: SPAN 401. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

STAT_O 121-010
STAT_O 121 101
Elementary Statistics W2
Descriptive and inferential statistics, elementary probability, probability distributions, estimation of parameters, hypothesis testing, correlation, linear regression. Credit will be granted for only one of STAT 121 or STAT 124. [3-0-0] Prerequisite: Either a) a score of 60% or higher in one of MATH 12, MATH 124 or b) a score of 67% or higher in one of MATH 12, PREC 12. Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

STAT_O 124-010
STAT_O 124 101
Business Statistics W2
Introduction to surveys and simple sampling strategies; descriptive methods for one and two variables; frequency distributions; correlation and regression; descriptive methods for time series and index numbers; and probability and relationship to statistical inference. Good for CA, CMA credit. Credit will be granted for only one of STAT 121, STAT 124. [3-0-0] Prerequisite: One of Principles of Mathematics 11, Pre-Calculus 11, Development of listening, speaking, reading, and writing in Spanish. Completes level A1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: SPAN 301. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

STAT_O 205-010
STAT_O 205 101
Introduction to Mathematical Statistics W2
Sampling distribution theory. Likelihood. Parameter estimation. Confidence intervals and hypothesis testing; simple regression, analysis of variance and contingency table analysis. Credit will be granted for only one of STAT 205 or STAT 230. [3-0-0] Prerequisite: STAT 201. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

STAT_O 230-010
STAT_O 230 101
Introductory Statistics W2
Applied statistics for students with a first-year calculus background. Estimation and testing of hypothesis, problem formulation, models and basic methods in analysis of variance, linear regression, and non-parametric methods. Descriptive statistics and probability are presented as a basis for such procedures. [3-0-0] Prerequisite: One of MATH 110, MATH 111, MATH 142 and one of DATA 101, CSCE 221. Lecture In Person Learning Mon Wed 2:10 p.m. - 3:30 p.m.

STAT_O 401-010
STAT_O 401 101
Probability and Statistical Inference W2
Random walks, Markov chains, Poisson processes, continuous time Markov chains, birth and death processes, exponential models, and applications of Markov chains. [3-0-0] Prerequisite: STAT 303. Lecture In Person Learning Thu 12:30 p.m. - 2:00 p.m.

STAT_O 403-001
STAT_O 403 001
Stochastic Processes W2
Collection of data using either designed experiments or survey samples. Planning and practice of data collection. Observational and experimental data and research design. Credit will be granted for only one of DATA 407, or STAT 507. Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

STAT_O 507-101
STAT_O 507 101
Sampling and Design W2
Least-squares, generalized least-squares and likelihood estimation. Theory and application of parametric and non-parametric regression models such as splines, penalized splines, and generalized additive models. Assessment and treatment of data issues including missingness and measurement error. Credit will be granted for only one of DATA 410, or STAT 538. [3-2-0] Lecture In Person Learning Thu 3:30 p.m. - 5:00 p.m.
STAT_O 547 J 1_101 Topics in Statistics W2
Topics chosen from different areas within the field of statistics, such as time series, longitudinal and multi-level modeling, multivariate analysis, machine learning, resampling and permutation methods, smoothing and filtering, survival analysis, sports analytics and spatial statistics. Content will be determined so as to complement course offerings and meet the needs of the students. With the permission of the department head, this course may be taken more than once on a different topic. [3-0-0] Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

STAT_O 580 001 Probability and Stochastic Processes W2
Theory of probability, including random variables, expectation, conditional expectation, generating functions, modes of convergence of random variables and their distributions. Applications to random models such as Markov, Poisson, birth-death, Gaussian and diffusion processes. [3-0-0] Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

SUST_O 300-101 SUST_O 100 101 Sustainability: People, Place, and Process W2
The concept of sustainability and its relationship to people and communities, the management and conservation of natural resources, land and food systems, and the built environment. Guest speakers and in-class discussions covering topics which address local and global contexts. May include community service learning project. [3-0-0] Lecture In Person Learning Thu Tue 8:00 a.m. - 9:30 a.m.

SUST_O 204-001 SUST_O 204 001 Creative Communication and Engagement W2
Using experiential and collaborative learning, students of sustainability improve their communication skills as speakers, listeners, collaborators, leaders and problem solvers. Credit will be granted for only one of SUST 204 or THTR 204. [3-0-0] Prerequisite: SUST 104 recommended. Equivalency: THTR 204 Lecture In Person Learning Wed 5:00 p.m. - 8:00 p.m.

SUST_O 205-001 SUST_O 205 001 Sustainability Economics W2
Explores and contrasts approaches and tools from mainstream economics and heterodox economics that may contribute to sustainability decision making. Identification and evaluation of trade-offs associated with choices made in the name of sustainability. Restricted to students in the Bachelor of Sustainability program. [3-0-0] Prerequisite: SUST 200 recommended. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

SUST_O 300-101 SUST_O 300 101 Achieving Sustainability at the Regional Scale W2
Advanced analysis of regional-scale challenges and solutions to sustainability in developed and developing nations. Ecosystem services and relationship to human well-being. Social and ecological resilience of landscapes. [3-0-0] Prerequisite: SUST 200. Lecture In Person Learning Tue Fri 2:00 p.m. - 3:30 p.m.

THTR_O 103-101 THTR_O 103 101 Acting for Stage and Screen W2
An introduction to acting techniques pertaining to the style of psychological realism for stage and screen. Credit will be granted for only one of THTR 101 or FILM 101. [3 hours/week studio] Equivalency: FILM 101 Lecture In Person Learning Mon 2:00 p.m. - 5:00 p.m.

THTR_O 104-101 THTR_O 104 101 The Art of Public Speaking W2
Verbal and nonverbal communication skills as well as knowledge of basic communications techniques. Well-suited to students who wish to build skill and confidence in public presentation. Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

THTR_O 204-001 THTR_O 204 001 Creative Communication and Engagement W2
Using experiential and collaborative learning, students of sustainability improve their communication skills as speakers, listeners, collaborators, leaders and problem solvers. Credit will be granted for only one of THTR 204 or SUST 204. [3-0-0] Prerequisite: SUST 104 recommended. Equivalency: SUST 204 Lecture In Person Learning Tue 5:00 p.m. - 8:00 p.m.

THTR_O 212-101 THTR_O 212 101 Creativity as Source & Resource W2
Process-oriented exploration of creativity as a source of personal growth and expressive freedom, and a resource for the cultivation of self-confidence, resilience, and well-being. Prerequisite: Second year standing. Lecture In Person Learning Wed 2:00 p.m. - 5:00 p.m.

THTR_O 304-001 THTR_O 304 001 World Theatre and Cultural Performance W2
Explorations of world theatre and cultural performance traditions and practices from South, Southeast and East Asia; Oceanic Sub-Saharan Africa; the Middle East; and the Americas; includes Indigenous theatre. Credit will be granted for only one of THTR 304 or WRLD 304. Prerequisite: Third-year standing. Equivalency: WRLD 304. Lecture In Person Learning Fri 11:00 a.m. - 2:00 p.m.

THTR_O 384-101 THTR_O 384 101 Spoken Word W2
Advanced workshop in writing and performing Spoken Word texts. Credit will be granted for only one of THTR 384 or CRWR 384, CULT 384 or CULT 308. [3-0-0] Prerequisite: 6 credits of Creative Writing and/or Theatre. Lecture In Person Learning Thu Fri 11:00 a.m. - 2:00 p.m.

VGRS_O 509-002 VGRS_O 509 002 Independent Study W2
Develops student competence in using the tools in the workshop and metalshop through demonstrations and the completion of a small project. This non-credit course is required in order to work in these facilities. Pass/Fail Lecture In Person Learning Arranged Arranged
Lecture
In Person Learning
Tue Thu
001
In Person Learning
W1
Tue Thu
Advanced Practice in Painting
Mon Wed
Independent Study
2:00 p.m. - 3:00 p.m.
10:00 a.m. - 11:00 a.m.

X
In Person Learning
9:30 a.m. - 1:30 p.m.
304
2:00 p.m. - 6:00 p.m.

C
Arranged
001
Cross-cultural Travel Narratives
Mon Wed Fri
Advanced Practice in Printmaking
[2-2-0] Prerequisite: VISA 261.
Introduction to Cultural Anthropology
Lecture
[3-0-0] Prerequisite: VISA 100. Equivalency: ANTH 100.

Roots, developments and transformations of anti-Semitism in literature, and culture. Prerequisite: Third-year standing.

An overview of social and cultural anthropology, its origins, distinctive methods and concepts, and its place in the contemporary world. A critical examination of human diversity and how social and cultural differences are produced and shaped by local and global patterns. [3-0-0] Prerequisite: 3 credits of first year English

Current intercultural communication theories and their critiques. Key concepts are applied to popular culture texts from around the world, providing a context for practice with a variety of intercultural communication skills, development tools, and self-reflection writing techniques.

Opportunity for students to continue their exploration of selected media in printmaking (etching, relief, lithography, and screenprinting) within the context of contemporary art practice. Interdisciplinary crossover, evolving processes, and new materials will be encouraged.

A thematically organized introduction to world literatures, interconnecting a range of cultures and historical periods. Texts will be studied in English translations. [3-0-0] Prerequisite: 3 credits of first year English

One of VISA 206, VISA 266, VISA 269, VISA 268, VISA 261. or the permission of the instructor. Equivalency: CULT 262

Opportunity for students to continue their exploration of select media in printmaking (etching, relief, lithography, and screenprinting) within the context of contemporary art practice. Interdisciplinary crossover, evolving processes, and new materials will be encouraged.

To extend students' abilities in mark-making, image production, and expression of meaning through drawing. Emphasis on developing personal visual language. [2-2] Prerequisite: VISA 225.

Continuation of VISA 261. Further work on organizational, technical, creative, and critical skills required in video production. Provides experience in all stages of the production process, including pre-production, production, and post-production. Considers a variety of approaches to video, such as avant-garde films, music videos, and television productions. Credit will be granted for only one of VISA 271 or FILM 271.

A critical examination of human diversity and how social and cultural differences are produced and shaped by local and global patterns. [3-0-0] Prerequisite: VISA 100. Equivalency: ANTH 100.

An overview of social and cultural anthropology, its origins, distinctive methods and concepts, and its place in the contemporary world. A critical examination of human diversity and how social and cultural differences are produced and shaped by local and global patterns. [3-0-0] Prerequisite: 3 credits of first year English

An examination of interrelated arts, visual cultures and texts in South Asia (15th to 19th C) within their historical and cultural contexts. Topics include the rise of the multicultural Mogul Empire, the roles of Hinduism, Islam, and Sikhism, and encounters with Renaissance and Colonial Europe. Digital art historical approaches will be used.

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Peoples and cultures of prehistory. Examines archaeologists and their work in archaeological sites around the world, from the earliest evidence of human kind and hunting and gathering culture, to the emergence of civilization and state-level societies. [3-0-0]

Lecture

ANTH 313-001
ANTH 314
314
001
Anthropology of Gender
W1

What are ethnographic methods and how is anthropological research conducted? Topics include research design, relationships with study participants, field techniques, ethical debates, data analysis and presentation. The emphasis is on interactive, workshop-style group learning. Credit will be granted for only one of ANTH 307 or ANTH 407. [3-0-0] Prerequisite: One of ANTH 200, ANTH 310, ANTH 325. Third-year standing.

Lecture

ANTH 313-001
ANTH 314
314
001
Anthropology of Gender
W1

Anthropological approaches to tourism, the politics of cultural encounters, and how the desire for difference shapes peoples' everyday lives and pleasure travel. [3-0-0] Prerequisite: Second-year standing.

Lecture

ANTH 317-001
ANTH 318
318
001
Tourism, Desire and Difference
W1

Anthropological approaches to tourism, the politics of cultural encounters, and how the desire for difference shapes peoples' everyday lives and pleasure travel. [3-0-0] Prerequisite: Second-year standing.

Lecture

ANTH 327-001
ANTH 328
328
001
Introduction to Medical Anthropology
W1

Overview of how social, cultural, historical, biological, and political-economic forces interact to affect human health and disease. Biomedicine will be treated as only one among many effective systems of medical knowledge and how it is embedded in local and global forms of social inequalities will be explored in depth. [3-0-0] Prerequisite: Second-year standing.

Lecture

ANTH 327-001
ANTH 328
328
001
Introduction to Medical Anthropology
W1

Introduction to anthropological archaeology with an emphasis on the relationship of cultural systems to contemporary environmental issues. Includes material from the Okanagan region and diverse societies around the world. May include one or more field trips. [3-0-0] Prerequisite: One of ANTH 100; SUST 104.

Lecture

ANTH 329-001
ANTH 330
330
001
Phonology
W1

What are ethnographic methods and how is anthropological research conducted? Topics include research design, relationships with study participants, field techniques, ethical debates, data analysis and presentation. The emphasis is on interactive, workshop-style group learning. Credit will be granted for only one of ANTH 307 or ANTH 407. [3-0-0] Prerequisite: One of ANTH 200, ANTH 310, ANTH 325. Third-year standing.

Lecture

ANTH 330-001
ANTH 331
331
001
Ethnographic Methods: Acquiring Research Skills/W1
W1

Foundations, theories, and methods of language socialization. The cultural basis of language learning across the human lifespan with emphasis on the role of family, schooling, heritage, and endangerment. Prerequisite: One of ANTH 100, ANTH 310. Third-year standing. ANTH 310 is preferred.

Lecture

ANTH 331-001
ANTH 332
332
001
Anthropology of Gender
W1

Review of anthropological theory and practice beginning with the origins of the discipline in the late nineteenth century and ending with the contemporary period. [3-0-0] Prerequisite: ANTH 100. and third-year standing.

Lecture

ANTH 332-001
ANTH 333
333
001
History of Anthropology
W1

Lecture, seminar. The human impact on the environment is now so far-reaching that the term Anthropocene is being used to refer to the current geological epoch. An examination of the defining characteristics of this time period and its implications for future engagements of humans with more-than-human worlds. Credit will be granted for only one of ANTH 345 or ANTH 492H. [3-0-0] Prerequisite: One of ANTH 100; SUST 104. Third-year standing.

Lecture

ANTH 334-001
ANTH 335
335
001
Living in the Anthropocene
W1

Advanced study of the theory and practice of applied, action, and consultative anthropology; application of anthropological practice to questions of Aboriginal rights and title, education, medicine, development, women and development, tourism, and other social issues. [3-0-0] Prerequisite: ANTH 100. and third-year standing.

Lecture

ANTH 335-001
ANTH 336
336
001
Topics in Applied Anthropology
W1

Global health and international development from the perspective of critical medical anthropology. Consideration of ethnographic critiques of contemporary global health and development as humanitarian, security, and political-economic projects, as well as how applied medical anthropologists work to translate public health knowledge and policy into effective action in specific social and cultural contexts. ANTH 227 is strongly recommended. [3-0-0] Prerequisite: ANTH 100. and third-year standing.

Lecture

ANTH 338-001
ANTH 339
339
001
Global Health and International Development
W1

Lecture, seminar. Study of the ways in which political processes shape the relationships of human societies to other species and the physical environment. Resource conflict, environmental degradation, inequality, marginalization, environmental movements, environmental discourse and other topics are analyzed using a combination of ethnographic case studies and theoretical materials. Credit will be granted for only one of ANTH 415 or GEOG 445. [3-0-0] Prerequisite: One of ANTH 100; GEOG 128; GEOG 129; SUST 104. Third-year standing.

Lecture

ANTH 345-001
ANTH 346
346
001
Political Ecology
W1

Lecture, seminar. Study of language shift, including local and global influences of historical, social, cultural, political, and economic factors impacting on language loss, endangerment, retention, and revival. Practical strategies for sustaining and reviving languages, including language documentation and revitalization. Credit will only be granted for one of ANTH 473 and INLG 480. [3-0-0] Prerequisite: Either (a) ANTH 100 or (b) ANTH 170. And 6 credits of ANTH at the 300 or 400 level required. ANTH 170 is preferred.

Lecture

ANTH 347-001
ANTH 348
348
001
Endangered Language Documentation and Revitalization
W1

Lecture, seminar. An introduction to Applied Science Co-op including: completion of preemployment workshops, career skills training, networking opportunities, internship training, individual coaching sessions, and job search skills. Restricted to students meeting the requirements of the Faculty of Applied Science Co-operative Education Program. Prerequisite: APSC 107.

Workshop

APSC 107-001
APSC O
107
001
Introduction to Applied Science Co-op
W1-2

Supervised, integrated learning experience in a public or private organization for a minimum of three months. formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 107.

Experiential

APSC O 110-71C
APSC O
110
71C
Co-operative Education Work Term I
W1

APSC 107-001
APSC O
107
001
Introduction to Applied Science Co-op
W1-2

Supervised, integrated learning experience in a public or private organization for a minimum of three months. formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 107.

Experiential

APSC O 110-71C
APSC O
110
71C
Co-operative Education Work Term I
W1
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Type</th>
<th>Time</th>
<th>Location</th>
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<tr>
<td>APSC 110-T1E</td>
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<td>W1</td>
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<td>APSC 110-T1F</td>
<td>APSC 110</td>
<td>Co-operative Education Work Term I</td>
<td>W1</td>
<td>Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 107. Experiential In Person Learning Arranged Arranged</td>
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<td>APSC 110</td>
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<td>W1</td>
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<td>APSC 110-201</td>
<td>APSC 110</td>
<td>Fundamentals of Sustainable Engineering Design</td>
<td>W1</td>
<td>Theory and practice of sustainable engineering. Awareness and risk analysis of potential impacts on society and the environment over the lifecycle of engineering projects. Engineering design process, project lifecycle, and professional responsibility. Team-based design project. [3-2-0] Lecture</td>
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<td>APSC 169-L2A</td>
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<td>APSC 169</td>
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<td>APSC 169-L2C</td>
<td>APSC 169</td>
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<td>APSC 169</td>
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<td>W1</td>
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<tr>
<td>APSC 169-L2G</td>
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<td>APSC 169</td>
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<td>W1</td>
<td>Theory and practice of sustainable engineering. Awareness and risk analysis of potential impacts on society and the environment over the lifecycle of engineering projects. Engineering design process, project lifecycle, and professional responsibility. Team-based design project. [3-2-0] Laboratory</td>
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<tr>
<td>APSC 169-L2M</td>
<td>APSC 169</td>
<td>Fundamentals of Sustainable Engineering Design</td>
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<td>APSC 169</td>
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<td>APSC 172-101</td>
<td>APSC 172</td>
<td>Engineering Analysis I</td>
<td>W1</td>
<td>Functions, limits, differentiation, applications of derivatives, integration, applications of definite integrals. [3-0-1]</td>
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<td>APSC 172</td>
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<td>Functions, limits, differentiation, applications of derivatives, integration, applications of definite integrals. [3-0-1]</td>
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<td>APSC 172</td>
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Written and oral presentations, formal and informal. Purpose, audience, content, format, and tone are studied, as are team-based report writings and presentations. [3-0-0]

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Thermometry, states of matter and phase change, ideal and real gases, 1st law of thermodynamics, 2nd law of thermodynamics, liquids, solutions, solid crystals, atomic structures and bonding. [2-2*-2*]

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<td>APSC 246-110</td>
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**Course Description:**

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Tue Thu

Online Learning: 5:00 p.m. - 6:30 p.m.

*APSC 246-102*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Tue Thu

Online Learning: 6:30 p.m. - 8:00 p.m.

*APSC 246-103*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Wed

Online Learning: 1:00 p.m. - 2:00 p.m.

*APSC 246-104*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Fri

Online Learning: 10:00 a.m. - 11:00 a.m.

*APSC 246-105*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Fri

Online Learning: 11:00 a.m. - 12:00 p.m.

*APSC 246-106*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Thu

Online Learning: 10:00 a.m. - 11:00 a.m.

*APSC 246-107*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Wed

Online Learning: 5:00 p.m. - 6:00 p.m.

*APSC 246-108*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Fri

Online Learning: 9:00 a.m. - 10:00 a.m.

*APSC 246-109*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Tue

Online Learning: 10:00 a.m. - 11:00 a.m.

*APSC 246-110*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Wed

Online Learning: 10:00 a.m. - 12:00 p.m.

*APSC 246-111*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Mon

Online Learning: 11:00 a.m. - 12:00 a.m.

*APSC 246-112*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Thu

Online Learning: 2:00 p.m. - 3:30 p.m.

*APSC 246-113*

Introduction to the Fourier series. Linear time invariant system, impulse response function, operator, convolution, system characterization, complex numbers, solution of linear ordinary differential equations, Laplace transform and its applications, transfer function, frequency response, solution to system of linear differential equations. Fourier series and transform. (3-0-1) Prerequisite: All of APSC 173, APSC 179, APSC 181.

Lecture: In Person Learning

Discussion: Mon

Online Learning: 2:00 p.m. - 3:30 p.m.
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Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: APSC 173.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles. Introduction to heat transfer modes. [3-0-1] Prerequisite: APSC 173, APSC 182.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl; gradient; divergence and Stokes' theorems; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles. Introduction to heat transfer modes. [3-0-1] Prerequisite: APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles. Introduction to heat transfer modes. [3-0-1] Prerequisite: APSC 173, APSC 182.

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Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

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Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

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Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.

Data acquisition, sensors, instrumentation, measurement techniques and their limitations, experimental design, and data analysis; statistics, basic probability; application of statistics to data analysis. [3-2*-1] Prerequisite: All of APSC 173, APSC 178.
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### Materials Science I

- **Course Description**: Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. Prerequisite: APSC 173, APSC 177.

- **Credits**: 3-2*-0

- **In Person Learning**: Wed: 3:00 p.m. - 4:00 p.m.; Fri: 3:00 p.m. - 4:00 p.m.; Thu: 3:00 p.m. - 4:00 p.m.

- **Course Content**:


- **Prerequisites**: APSC 179.
In Person Learning

Arranged

Materials Science I

W3

Atomic bonding, crystallographic characteristics of materials, stress-strain curve, strengthening mechanisms, failure of materials, Eutectic and Eutectoid phase transformations, Fe-C phase diagram, composite materials, corrosion, electrical properties of materials. [3-2*-0] Prerequisite: All of APSC 182, APSC 183. Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

M2

Materials Science I

W3

Atomic bonding, crystallographic characteristics of materials, stress-strain curve, strengthening mechanisms, failure of materials, Eutectic and Eutectoid phase transformations, Fe-C phase diagram, composite materials, corrosion, electrical properties of materials. [3-2*-0] Prerequisite: All of APSC 182, APSC 183. Laboratory In Person Learning Fri (Alternate weeks) 2:00 p.m. - 4:00 p.m.

M2

Materials Science I

W3

Atomic bonding, crystallographic characteristics of materials, stress-strain curve, strengthening mechanisms, failure of materials, Eutectic and Eutectoid phase transformations, Fe-C phase diagram, composite materials, corrosion, electrical properties of materials. [3-2*-0] Prerequisite: All of APSC 182, APSC 183. Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

M2

Materials Science I

W3

Atomic bonding, crystallographic characteristics of materials, stress-strain curve, strengthening mechanisms, failure of materials, Eutectic and Eutectoid phase transformations, Fe-C phase diagram, composite materials, corrosion, electrical properties of materials. [3-2*-0] Prerequisite: All of APSC 182, APSC 183. Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

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M2

Materials Science I

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M2

Materials Science I

W3

Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 210. Experiential In Person Learning Arranged Arranged

M2

Materials Science I

W3

Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 210. Experiential In Person Learning Arranged Arranged

M2

Materials Science I

W3

Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 210. Experiential In Person Learning Arranged Arranged

M2

Materials Science I

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Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 210. Experiential In Person Learning Arranged Arranged

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Materials Science I

W3

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Materials Science I

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M2

Materials Science I

W3

Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 210. Experiential In Person Learning Arranged Arranged

M2

Materials Science I

W3

Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 210. Experiential In Person Learning Arranged Arranged
APSC_O 411-71C APSC_O 411 71C Co-operative Education Work Term V W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410. Experiential In Person Learning Arranged Arranged

APSC_O 411-71E APSC_O 411 71E Co-operative Education Work Term V W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410. Experiential In Person Learning Arranged Arranged

APSC_O 411-71F APSC_O 411 71F Co-operative Education Work Term V W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410. Experiential In Person Learning Arranged Arranged

APSC_O 411-71M APSC_O 411 71M Co-operative Education Work Term V W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 410. Experiential In Person Learning Arranged Arranged

APSC_O 412-71C APSC_O 412 71C Co-operative Education Work Term VI W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 411. Experiential In Person Learning Arranged Arranged

APSC_O 412-71E APSC_O 412 71E Co-operative Education Work Term VI W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 411. Experiential In Person Learning Arranged Arranged

APSC_O 412-71F APSC_O 412 71F Co-operative Education Work Term VI W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 411. Experiential In Person Learning Arranged Arranged

APSC_O 412-71M APSC_O 412 71M Co-operative Education Work Term VI W1
Supervised, integrated learning experience in a public or private organization for a minimum of three months. Formal co-op assignments required. Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 411. Experiential In Person Learning Arranged Arranged

APSC_O 501-001 APSC_O 501 001 Professional Communication for Engineering Lee W1
Supervised, technical paid work experience with a public or private organization for a minimum of 12 weeks full-time. Internship assignment required. Restricted to graduate students meeting requirements of the Faculty of Applied Science and the Co-operative Education program. Prerequisite: APSC 107 and 3 credits M.Eng. coursework. Pass/Fail. Experiential In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

APSC_O 501-002 APSC_O 501 002 Professional Communication for Engineering Lee W1
Supervised, technical paid work experience with a public or private organization for a minimum of 12 weeks full-time. Internship assignment required. Restricted to graduate students meeting requirements of the Faculty of Applied Science and the Co-operative Education program. Prerequisite: APSC 107 and 3 credits M.Eng. coursework. Pass/Fail. Experiential In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

APSC_O 501-003 APSC_O 501 003 Professional Communication for Engineering Lee W1
Supervised, technical paid work experience with a public or private organization for a minimum of 12 weeks full-time. Internship assignment required. Restricted to graduate students meeting requirements of the Faculty of Applied Science and the Co-operative Education program. Prerequisite: APSC 107 and 3 credits M.Eng. coursework. Pass/Fail. Experiential In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

APSC_O 500-001 APSC_O 500 001 Construction Digitalization and Informatics W1
Supervised, technical paid work experience with a public or private organization for a minimum of 12 weeks full-time. Internship assignment required. Restricted to graduate students meeting requirements of the Faculty of Applied Science and the Co-operative Education program. Prerequisite: APSC 107 and 3 credits M.Eng. coursework. Pass/Fail. Experiential In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

ARTH_O 301-001 ARTH_O 301 001 Art and Visual Cultures of the World I W1
Critical thinking about art and visual cultures of the world, past and present, and how visual works can be viewed closely, creatively analyzed, and interpreted. [3-0-0] Prerequisite: 3 credits of 100-level English. Lecture In Person Learning Mon Thu 8:00 a.m. - 9:30 a.m.

ARTH_O 202-001 ARTH_O 202 001 The Critical Viewer W1
Key ideas influencing art theory, art practice, and visual culture studies and topics relating to the emergence and globalization of Euro-American art ideologies and practices. [3-0-0] Prerequisite: Third-year standing. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

ARTH_O 303-001 ARTH_O 303 001 Critical Viewing - Advanced Studies W1
History, theory, and practice of performance art as a visual medium, a global language, and a political force. Explores a wider range of experimental and interdisciplinary performance art practices, including key contributions by Indigenous artists. Credit will be granted for only one of ARTH 305, CULT 305, THTR 305, or WRLD 309. Prerequisite: Third-year standing. Equivalency: CULT 305, THTR 305, WRLD 309 Lecture In Person Learning Wed Fri 6:00 p.m. - 8:00 p.m.

ARTH_O 304-001 ARTH_O 304 001 Performance Art: Global Perspectives W1
Selected from the arts of the book across the Islamic world (8th to 19th c) showing how literature-inspired patterns and calligraphers to weave together word and image. Digital art historical approaches will normally be used, though no computing experience is required. Credit will be granted for only one of ARTH 470, DHU 370, or WRLD 470. Prerequisite: Third-year standing. Equivalency: DHU 370, WRLD 470. Lecture In Person Learning Mon Thu 11:00 a.m. - 12:30 p.m.

ARTH_O 380-001 ARTH_O 380 001 African Art and Visual Culture W1
Historic and contemporary sub-Saharan African art and visual culture with emphasis on socio-historical contexts. [3-0-0] Prerequisite: Third-year standing. Lecture In Person Learning Wed Fri 6:00 p.m. - 8:00 p.m.

ARTH_O 390-001 ARTH_O 390 001 Indigenous Art and Visual Culture W1
Historic and contemporary North American Indigenous art and visual culture with emphasis on socio-historical contexts and cultural identity. [3-0-0] Prerequisite: Third-year standing. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

ARTH_O 395-001 ARTH_O 395 001 Renaissance Europe in a Global Context W1
A re-evaluation of conventional Renaissance art history facilitated by intercultural perspectives, gender studies, cognitive science, and cultural theory. [3-0-0] Prerequisite: Third-year standing. Lecture Online Learning Wed Fri 8:00 a.m. - 9:30 a.m.
Approaches to researching Contemporary Art in a global context, and the practice of curating exhibitions. Prerequisite: Third-year standing.

Physical principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies in our solar system. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*-0) Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 12, Principles of Mathematics 11; and Physics 11.

Physical principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies in our solar system. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*-1) Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 12, Principles of Mathematics 11; and Physics 11. Laboratory

Physical principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies in our solar system. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*-0) Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 12, Principles of Mathematics 11; and Physics 11.

General principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies; some observational work. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*0) Prerequisite: Foundations of Mathematics 11 is strongly recommended.

General principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies; some observational work. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*-0) Prerequisite: Foundations of Mathematics 11 is strongly recommended.

General principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies; some observational work. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*-0) Prerequisite: Foundations of Mathematics 11 is strongly recommended.

General principles of the celestial sphere, laws of motion, light, and optics; observational techniques using earth-based telescopes, artificial satellites, and inter-planetary probes; planets, moons, and smaller bodies; some observational work. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 110, 111, 112 (3-3*-0) Prerequisite: Foundations of Mathematics 11 is strongly recommended.

Introduction to observational conventions. Applications of physics to astronomical systems, including orbital mechanics, radiative processes, Introduction to stellar properties and atmospheres, accretion, and general relativity including black holes and modern cosmology. [3-0-0] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122.

Thermodynamics, atomic and molecular spectra, ionisation and excitation, radiative transport, line and continuum opacities. Basic particle and fluid dynamics of stellar and gaseous systems in astrophysics. Gravitational dynamics. Credit will be granted for only one of ASTR 401 or ASTR 501. [3-0-0] Prerequisite: PHYS 301, and ASTR 111 or PHYS 121. PHYS 324 is recommended.

Thermodynamics, atomic and molecular spectra, ionisation and excitation, radiative transport, line and continuum opacities. Basic particle and fluid dynamics of stellar and gaseous systems in astrophysics. Gravitational dynamics. Credit will be granted for only one of ASTR 401 or ASTR 501. [3-0-0] Prerequisite: PHYS 301, and ASTR 111 or PHYS 121. PHYS 324 is recommended.

Thermodynamics, atomic and molecular spectra, ionisation and excitation, radiative transport, line and continuum opacities. Basic particle and fluid dynamics of stellar and gaseous systems in astrophysics. Gravitational dynamics. Credit will be granted for only one of ASTR 401 or ASTR 501. [3-0-0] Prerequisite: PHYS 301, and ASTR 111 or PHYS 121. PHYS 324 is recommended.

Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, analytical electrochemistry, biosensors, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. [3-1-0] Prerequisite: One of CHEM 119, CHEM 123 and one of PHYS 121, PHYS 122.
 Directed Studies in Biochemistry

In Person Learning

W1

448

A_006

Directed Studies in Biochemistry

3:00 p.m. - 6:30 p.m.

Biocatalysis

Library (3 credits) or laboratory project with written report (3 or 6 credits) allowing a student to undertake an investigation on a specific topic as agreed upon by the faculty and student. Prerequisite: Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 72%, and permission of the supervisor's department.

The credit value for this course will be determined in consultation with the student prior to the registration.

Independent Study

In Person Learning

Directed Studies in Biochemistry

The credit value for this course will be determined in consultation with the student prior to the registration.

Directed Studies in Biochemistry

The credit value for this course will be determined in consultation with the student prior to the registration.

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Directed Studies in Biochemistry

The credit value for this course will be determined in consultation with the student prior to the registration.
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The credit value for this course will be determined in consultation with the student prior to the registration. Prerequisite: Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 72%, and permission of the supervisor’s department.

Library (3 credits) or laboratory project with written report (3 or 6 credits) allowing a student to undertake an investigation on a specific topic as agreed upon by the faculty and student. Prerequisite: Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 72%, and permission of the supervisor’s department.
Library (3 credits) or laboratory project with written report (3 or 6 credits) allowing a student to undertake an investigation on a specific topic as agreed upon by the faculty and student. Prerequisite: Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 72%, and permission of the supervisor’s department.

The credit value for this course will be determined in consultation with the student prior to the registration. Independent Study In Person Learning Arranged Arranged

Directed Studies in Biochemistry 448

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Directed Studies in Biochemistry 448

Directed Studies in Biochemistry 448
Biochemistry and Molecular Biology program with a minimum overall grade average of 76%, a research project, and permission of the supervisor's department. Original research work under the direction of a faculty member. A written thesis with a public presentation of the thesis in the form of a poster or a seminar is required. Prerequisite: Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 76%, a research project, and permission of the supervisor's department.
Current techniques in DNA manipulation and analysis will be presented, relevant to such areas as molecular biology, microbiology, and biochemistry. Topics include site-directed mutagenesis, variations in cloning techniques, sequence analysis, Southern blotting, plus maintenance of a research lab notebook. [0-4-0] Prerequisite: One of BIOC 393, BIOL 393. BIOL 366 is strongly recommended. Laboratory in Person Learning Wed 3:30 p.m. - 7:30 p.m.

Course-designed to enhance oral and written communication of scientific concepts. Each student will present two seminars and write an NSERC-style grant related to their research. Credit will be granted for only one of BIOC 530 or BIOC 630. Prerequisite: Admission to the Biochemistry and Molecular Biology graduate program. Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.

Biochemistry and Molecular Biology program with a minimum overall grade average of 76%, a research project, and permission of the supervisor's department. Original research work under the direction of a faculty member. A written thesis with a public presentation of the thesis in the form of a poster or a seminar is required. Prerequisite: Fourth-year standing in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 76%, a research project, and permission of the supervisor's department. Thesis In Person Learning Arranged Arranged

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: One of BIOL 116/125 or BIOL 117/122. Corequisite: One of CHEM 111, CHEM 112 is recommended. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: One of BIOL 116/125 or BIOL 117/122. Corequisite: One of CHEM 111, CHEM 112 is recommended. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: One of BIOL 116/125 or BIOL 117/122. Corequisite: One of CHEM 111, CHEM 112 is recommended. Lecture In Person Learning Mon 12:30 p.m. - 3:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: One of BIOL 116/125 or BIOL 117/122. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: One of BIOL 116/125 or BIOL 117/122. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Tue 12:30 p.m. - 3:30 p.m.

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First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0] Prerequisite: One of BIOL 116/125 or BIOL 117/122. Corequisite: One of CHEM 111, CHEM 112 is recommended. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

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First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0]

Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Tue 3:30 p.m. - 6:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0]

Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Tue 6:30 p.m. - 9:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0]

Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0]

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Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0]

Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Thu 12:30 p.m. - 3:30 p.m.

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Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Fri 3:30 p.m. - 6:30 p.m.

First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-3-0]

Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Mon 12:30 p.m. - 3:30 p.m.

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Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIS 11, BIS 12. Corequisite: One of CHEM 111, CHEM 112 is recommended. Laboratory In Person Learning Mon 6:30 p.m. - 9:30 p.m.
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First of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetics basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of CHEM 111, CHEM 121 is recommended.
ECCO/131-KMT  ECCO/  136  XMT  Biology for Science Majors I  W1  first of a pair of courses that introduce students to the biological concepts necessary to continue into second-year biology. Covers evolutionary theory and its underlying genetic basis, basic cell biology, plant and animal nutrition, and energy acquisition. Credit will be granted for only BIOL 116/125 or BIOL 117/122. [3-0-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12, or (b) CHEM 11 and one of BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory  In Person Learning  Arranged  Arranged

BIOC 117-01  BIOC  117  01  Evolution and Ecology  W1  Evolutionary theory and its underlying genetic basis; population, community, ecosystem, and behavioural ecology. Specific case studies and current environmental concerns. Recommended for Arts or Education students, in conjunction with BIOC 122. BIOC 117/122 cannot be used in place of BIOC 116/125 for those degree programs that require BIOC 116/125. Credit will be granted for only one of BIOC 117/122 or BIOC 116/125. [3-0-0] Lecture  In Person Learning  Wed Fri  2:00 p.m. - 3:30 p.m.

BIOC 131-001  BIOC  131  001  Human Anatomy and Physiology I  W1  Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOC 133 in their second term. Credit will be granted for only one of BIOC 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOC 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11. Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

BIOC 131-005  BIOC  131  005  Human Anatomy and Physiology I  W1  Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOC 133 in their second term. Credit will be granted for only one of BIOC 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOC 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11. Lecture  In Person Learning  Tue Fri  8:00 a.m. - 11:00 a.m.

BIOC 131-009  BIOC  131  009  Human Anatomy and Physiology I  W1  Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOC 133 in their second term. Credit will be granted for only one of BIOC 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOC 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11. Lecture  In Person Learning  Wed  8:00 a.m. - 11:00 a.m.
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<td>131</td>
<td>Human Anatomy and Physiology I</td>
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<tr>
<td>BIOL 131-L11</td>
<td>131</td>
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</tr>
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<td>BIOL 131-L12</td>
<td>131</td>
<td>Human Anatomy and Physiology I</td>
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<td>BIOL 131-XMT</td>
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<td>BIOL 200-001</td>
<td>200</td>
<td>Cell Biology</td>
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<td>BIOL 202-001</td>
<td>202</td>
<td>Introduction to Biostatistics</td>
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<td>BIOL 202-007</td>
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Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Thu 11:00 a.m. - 2:00 p.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Thu 5:00 p.m. - 8:00 p.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Fri 8:00 a.m. - 11:00 a.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Fri 12:00 p.m. - 3:00 p.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Arranged Arranged

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Mon Wed Fri 4:00 p.m. - 5:00 p.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Mon 5:00 p.m. - 6:30 p.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Thu 11:00 a.m. - 12:30 p.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Tue 8:00 a.m. - 9:30 a.m.

Introduction to human structures and functions, emphasizing basic physiological principles, plus cell and tissue structure. Laboratory work will include gross and microscopic anatomy, and will demonstrate underlying physiological processes. This course is for students planning to enrol in BIOL 131 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMKN 190. [3-0-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 11 or (c) all of Biology 11 or 12, Chemistry 11.

Laboratory In Person Learning Thu 8:00 a.m. - 9:30 a.m.
Data analysis methods for biologists including sampling and experimental design, visualizing and describing data, probability, hypothesis testing, comparisons of proportions and means, correlation and regression analysis, analysis of variance, non-parametric, permutation-based tests, and the central roles that statistical analyses and reproducibility play in scientific research. R and RMarkdown are used to visualize and analyze data, and to communicate findings using literate programming. \[3-2-0\] Prerequisite: MATH 100.

Laboratory In Person Learning Thu 9:30 a.m. - 11:00 a.m.

Data analysis methods for biologists including sampling and experimental design, visualizing and describing data, probability, hypothesis testing, comparisons of proportions and means, correlation and regression analysis, analysis of variance, non-parametric, permutation-based tests, and the central roles that statistical analyses and reproducibility play in scientific research. R and RMarkdown are used to visualize and analyze data, and to communicate findings using literate programming. \[3-2-0\] Prerequisite: MATH 100.

Laboratory In Person Learning Tue 8:00 a.m. - 9:30 a.m.
<table>
<thead>
<tr>
<th>Code</th>
<th>Section</th>
<th>Course Name</th>
<th>Schedule</th>
<th>Location</th>
<th>Notes</th>
</tr>
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<tr>
<td>BIOC_204-L02</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning Mon 12:30 p.m. - 3:30 p.m.</td>
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<tr>
<td>BIOC_204-L03</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>5:00 p.m. - 8:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning Mon 5:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>BIOC_204-L04</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>8:00 a.m. - 11:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning Tue 8:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>BIOC_204-L05</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>5:00 p.m. - 8:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning Tue 5:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>BIOC_204-L06</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>11:00 a.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning Thu 11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>BIOC_204-L07</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>12:30 p.m. - 3:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning Wed 12:30 p.m. - 3:30 p.m.</td>
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<tr>
<td>BIOC_204-L08</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>5:00 p.m. - 8:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning Wed 5:00 p.m. - 8:00 p.m.</td>
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<td>BIOC_204-L09</td>
<td>204</td>
<td>Introductory Microbiology</td>
<td>8:00 a.m. - 11:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning Thu 8:00 a.m. - 11:00 a.m.</td>
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<td>BIOC_204-XMT</td>
<td>204</td>
<td>Introductory Microbiology</td>
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<td>Laboratory</td>
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<tr>
<td>BIOC_205-001</td>
<td>205</td>
<td>Comparative Invertebrate Zoology</td>
<td>Lecture</td>
<td>In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>BIOC_205-L01</td>
<td>205</td>
<td>Comparative Invertebrate Zoology</td>
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<td>BIOC_205-L02</td>
<td>205</td>
<td>Comparative Invertebrate Zoology</td>
<td>6:30 p.m. - 9:30 p.m.</td>
<td>Laboratory</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<td>BIOC_205-L03</td>
<td>205</td>
<td>Comparative Invertebrate Zoology</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Laboratory</td>
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<td>BIOC_205-L04</td>
<td>205</td>
<td>Comparative Invertebrate Zoology</td>
<td>8:00 a.m. - 11:00 a.m.</td>
<td>Laboratory</td>
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<td>BIOC_205-L05</td>
<td>205</td>
<td>Comparative Invertebrate Zoology</td>
<td>6:30 p.m. - 9:30 p.m.</td>
<td>Laboratory</td>
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<td>Arranged</td>
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<tr>
<td>BIOC_218-001</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>12:30 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>12:30 p.m. - 2:00 p.m.</td>
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<td>BIOC_218-L01</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>Mon Wed</td>
<td>Laboratory</td>
<td>Mon Wed 5:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>BIOC_218-L02</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>12:30 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>12:30 p.m. - 2:00 p.m.</td>
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<td>BIOC_218-L03</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Laboratory</td>
<td>9:30 a.m. - 12:30 p.m.</td>
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<td>BIOC_218-L04</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>3:30 p.m. - 6:30 p.m.</td>
<td>Laboratory</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<td>218</td>
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<td>3:30 p.m. - 6:30 p.m.</td>
<td>Laboratory</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<tr>
<td>BIOC_218-L06</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Laboratory</td>
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<td>BIOC_218-L07</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>5:00 p.m. - 8:00 p.m.</td>
<td>Laboratory</td>
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<td>BIOC_218-L08</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>3:30 p.m. - 6:30 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>BIOC_218-L09</td>
<td>218</td>
<td>Introductory Microbiology</td>
<td>3:30 p.m. - 6:30 p.m.</td>
<td>Laboratory</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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</table>
An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virology, and immunology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 201, CHEM 211. Laboratory In Person Learning Mon Wed 9:00 a.m. - 12:30 p.m.

An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virology, and immunology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 201, CHEM 211. Laboratory In Person Learning Tue 9:30 a.m. - 12:30 p.m.

An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virology, and immunology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 201, CHEM 211. Laboratory In Person Learning Tue 1:30 p.m. - 6:30 p.m.

W1 Introductory Microbiology

Laboratory In Person Learning

Mon Wed

4:00 p.m. - 5:00 p.m.

In Person Learning

3:00 p.m.

In Person Learning

2:00 p.m.

In Person Learning

1:00 p.m.

In Person Learning

4:00 p.m.

In Person Learning

3:00 p.m.

In Person Learning

2:00 p.m.

In Person Learning

1:00 p.m.

In Person Learning

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3:00 p.m.

In Person Learning

2:00 p.m.

In Person Learning

1:00 p.m.

In Person Learning

3:00 p.m.
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<th>Schedule</th>
<th>Notes</th>
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<td>BIOL 354-KMT</td>
<td>Cell Physiology</td>
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<td>Laboratory</td>
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<tr>
<td>BIOL 357-001</td>
<td>Introduction to Entomology</td>
<td>3-0-0</td>
<td>Lecture</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230 or one of PHYS 110, PHYS 120.</td>
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<td>BIOL 357-005</td>
<td>Honours Thesis</td>
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<td>In Person Learning</td>
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<td>BIOL 357-006</td>
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<td>Honours Thesis</td>
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</table>

General survey of the evolution, classification, and biology of insects, with a special emphasis on their functional ecology. Experiments using insect systems as well as master techniques for collecting and curating insect specimens will be conducted in the lab. A properly-curated collection is a requirement for this course. [3-0] Prerequisite: BIOL 201 and one of BIOL 202, STAT 230, BOX 205 is recommended. Laboratory: In Person Learning, Arranged: Arranged

General survey of the evolution, classification, and biology of insects, with a special emphasis on their functional ecology. Experiments using insect systems as well as master techniques for collecting and curating insect specimens will be conducted in the lab. A properly-curated collection is a requirement for this course. [3-0] Prerequisite: BIOL 201 and one of BIOL 202, STAT 230, BOX 205 is recommended. Laboratory: In Person Learning, Wed Fri 12:30 p.m. - 1:00 p.m.

General survey of the evolution, classification, and biology of insects, with a special emphasis on their functional ecology. Experiments using insect systems as well as master techniques for collecting and curating insect specimens will be conducted in the lab. A properly-curated collection is a requirement for this course. [3-0] Prerequisite: BIOL 201 and one of BIOL 202, STAT 230, BOX 205 is recommended. Laboratory: In Person Learning, Tue 2:30 p.m. - 3:50 p.m.

General survey of the evolution, classification, and biology of insects, with a special emphasis on their functional ecology. Experiments using insect systems as well as master techniques for collecting and curating insect specimens will be conducted in the lab. A properly-curated collection is a requirement for this course. [3-0] Prerequisite: BIOL 201 and one of BIOL 202, STAT 230, BOX 205 is recommended. Laboratory: In Person Learning, Wed 2:30 p.m. - 3:50 p.m.

General survey of the evolution, classification, and biology of insects, with a special emphasis on their functional ecology. Experiments using insect systems as well as master techniques for collecting and curating insect specimens will be conducted in the lab. A properly-curated collection is a requirement for this course. [3-0] Prerequisite: BIOL 201 and one of BIOL 202, STAT 230, BOX 205 is recommended. Laboratory: In Person Learning, Arranged: Arranged

Stresses the principles of molecular biology techniques and their relevance to the study of all areas of biology. [3-0-0] Prerequisite: One of BIOL 265, BIOL 266. Lecture: In Person Learning, Wed Fri 3:30 p.m. - 5:00 p.m.

Spatial patterns in ecology, exploring ways to describe variation and mechanisms that give rise to patterns. Dispersion, metapopulation and source-sink dynamics, connectivity and fragmentation, heterogeneity, disturbance, edges, and dynamics of geographical ranges. Credit will be granted for only one of BIOL 401 or BIOL 512. [3-0-0] Prerequisite: One of BIOL 202, STAT 230. Lecture: In Person Learning, Mon Wed 8:00 a.m. - 9:30 a.m.

A detailed examination of the microbes that play a role in the manufacturing of beverages (e.g., beer and wine), solid foods (e.g., cheese), and industrial processes (e.g., waste water treatment). [3-0-0] Prerequisite: BIOL 228. Lecture: In Person Learning, Tue Fri 2:10 p.m. - 3:30 p.m.

Spatial patterns in ecology, exploring ways to describe variation and mechanisms that give rise to patterns. Dispersion, metapopulation and source-sink dynamics, connectivity and fragmentation, heterogeneity, disturbance, edges, and dynamics of geographical ranges. Credit will be granted for only one of BIOL 401 or BIOL 512. [3-0-0] Prerequisite: One of BIOL 202, STAT 230. Lecture: In Person Learning, Tue Fri 2:30 p.m. - 3:50 p.m.

Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

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Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

Students undertake a research project on a specific topic as agreed upon by the faculty member and the student. A written thesis is required, with a public presentation of the thesis in the form of a poster or a seminar. Prerequisite: Permission of the department head and course supervisor. Thesis: In Person Learning, Arranged: Arranged

Analysis of cellular function common to diverse organisms with an emphasis on ion transport in excitable and non-excitable cells, signaling via second messengers, cellular pH regulation, and epithelial transport. [3-0-1] Prerequisite: BIOL 201 and one of BIOL 202, STAT 230 and one of PHYS 110, PHYS 120. Lecture: In Person Learning, Wed Fri 12:30 p.m. - 1:00 p.m.
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Credit will be granted for only one of CHEM 121 or CHEM 111. [3-0-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.
CHEM 121-L08 CHEM, O 121 L08 Atomic and Molecular Chemistry W1

Chemistry is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Tue 1:30 p.m. - 4:30 p.m.

CHEM 121-L10 CHEM, O 121 L10 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

CHEM 121-L11 CHEM, O 121 L11 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

CHEM 121-L12 CHEM, O 121 L12 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Tue 5:30 p.m. - 8:30 p.m.

CHEM 121-L13 CHEM, O 121 L13 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM 121-L14 CHEM, O 121 L14 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM 121-L15 CHEM, O 121 L15 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

CHEM 121-L16 CHEM, O 121 L16 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 2:00 p.m. - 5:00 p.m.

CHEM 121-L17 CHEM, O 121 L17 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 2:00 p.m. - 5:00 p.m.

CHEM 121-L18 CHEM, O 121 L18 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 2:00 p.m. - 5:00 p.m.

CHEM 121-L19 CHEM, O 121 L19 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 2:00 p.m. - 5:00 p.m.

CHEM 121-L20 CHEM, O 121 L20 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.

CHEM 121-L21 CHEM, O 121 L21 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.

CHEM 121-L22 CHEM, O 121 L22 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.

CHEM 121-L23 CHEM, O 121 L23 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Wed 5:30 p.m. - 8:30 p.m.

CHEM 121-L24 CHEM, O 121 L24 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

CHEM 121-L25 CHEM, O 121 L25 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

CHEM 121-L26 CHEM, O 121 L26 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

CHEM 121-L27 CHEM, O 121 L27 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

CHEM 121-L28 CHEM, O 121 L28 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Thu 1:30 p.m. - 4:30 p.m.

CHEM 121-L29 CHEM, O 121 L29 Atomic and Molecular Chemistry W1

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces. Credit will be granted for only one of CHEM 121 or CHEM 111. [3-3-0] Prerequisite: CHEM 11. Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Laboratory In Person Learning Thu 1:30 p.m. - 4:30 p.m.
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<th>Section</th>
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<td>CHEM_O 203-101</td>
<td>CHEM_O</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Lecture</td>
<td>Mon</td>
<td>1:30 p.m. - 4:30 p.m.</td>
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<td>CHEM_O 203-102</td>
<td>CHEM_O</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Lecture</td>
<td>Tue</td>
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<td>CHEM_O 203-103</td>
<td>CHEM_O</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Lecture</td>
<td>Wed</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 213.

Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces.

Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.

Laboratory in Person Learning Thu 9:30 a.m. - 12:30 p.m.

Structure, bonding, and physical properties of aliphatic and aromatic compounds: conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of alkylic halides; ethers, epoxides, aldehydes, ketones. Credit will be granted for only one of CHEM 203 or CHEM 213. [3-3-0]

Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.

Laboratory in Person Learning Fri 9:30 a.m. - 12:30 p.m.

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces.

Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.

Laboratory in Person Learning Fri 9:30 a.m. - 12:30 p.m.

Structure, bonding, and physical properties of aliphatic and aromatic compounds: conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of alkylic halides; ethers, epoxides, aldehydes, ketones. Credit will be granted for only one of CHEM 203 or CHEM 213. [3-3-0]

Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.

Laboratory in Person Learning Mon 11:00 a.m. - 12:00 p.m.

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces.

Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.

Laboratory in Person Learning Mon 1:30 p.m. - 4:30 p.m.

Structure, bonding, and physical properties of aliphatic and aromatic compounds: conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of alkylic halides; ethers, epoxides, aldehydes, ketones. Credit will be granted for only one of CHEM 203 or CHEM 213. [3-3-0]

Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.

Laboratory in Person Learning Tue 9:30 a.m. - 12:30 p.m.

Gases, atomic structure and quantum theory of atoms, molecular structure and bonding, intermolecular forces.

Chemistry 12 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.

Laboratory in Person Learning Tue 1:30 p.m. - 4:30 p.m.

Structure, bonding, and physical properties of aliphatic and aromatic compounds: conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of alkylic halides; ethers, epoxides, aldehydes, ketones. Credit will be granted for only one of CHEM 203 or CHEM 213. [3-3-0]

Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.

Laboratory in Person Learning Tue 5:30 p.m. - 8:30 p.m.
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<td><strong>Course Code</strong></td>
<td><strong>Semester</strong></td>
<td><strong>Description</strong></td>
<td><strong>Prerequisites</strong></td>
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</tbody>
</table>
| Introduction to Organic Chemistry | W1 | Mon Wed Fri | Structure, bonding, and properties of aliphatic and aromatic compounds; conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of aldehydes, ethers, epoxides, and carbohydrates. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.
| | L07 | | Laboratory | In Person Learning |
| | | | | Wed 5:30 p.m. - 8:30 p.m. |
| Introduction to Organic Chemistry | W1 | Thu | Structure, bonding, and properties of aliphatic and aromatic compounds; conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of aldehydes, ethers, epoxides, and carbohydrates. Credit will be granted for only one of CHEM 203 or CHEM 211. | Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.
| | L08 | | Laboratory | In Person Learning |
| | | | | Thu 9:30 a.m. - 12:30 p.m. |
| Introduction to Organic Chemistry | W1 | Mon Wed Fri | Structure, bonding, and properties of aliphatic and aromatic compounds; conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of aldehydes, ethers, epoxides, and carbohydrates. Credit will be granted for only one of CHEM 203 or CHEM 211. | Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.
| | L09 | | Laboratory | In Person Learning |
| | | | | Wed 5:30 p.m. - 8:30 p.m. |
| Introduction to Organic Chemistry | W1 | Tue | Structure, bonding, and properties of aliphatic and aromatic compounds; conformational analysis, stereochemistry, and NMR spectroscopy; substitution and elimination reactions of aldehydes, ethers, epoxides, and carbohydrates. Credit will be granted for only one of CHEM 203 or CHEM 211. | Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.
| | XMT | | Laboratory | In Person Learning | Arranged | Arranged |
| Analytical Chemistry | W1 | Mon Wed Fri | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | G02 | | Lecture | In Person Learning | Wed Fri | 8:10 a.m. - 9:30 a.m. |
| Analytical Chemistry | W1 | Mon Wed Fri | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | L01 | | Laboratory | In Person Learning | Mon | 12:00 p.m. - 1:00 p.m. |
| Analytical Chemistry | W1 | Tue | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | L02 | | Laboratory | In Person Learning | Tue | 9:30 a.m. - 12:30 p.m. |
| Analytical Chemistry | W1 | Tue | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | L03 | | Laboratory | In Person Learning | Tue | 1:30 p.m. - 4:30 p.m. |
| Analytical Chemistry | W1 | Tue | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | L04 | | Laboratory | In Person Learning | Tue | 5:30 p.m. - 8:30 p.m. |
| Analytical Chemistry | W1 | Tue | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | L05 | | Laboratory | In Person Learning | Wed | 9:30 a.m. - 12:30 p.m. |
| Analytical Chemistry | W1 | Tue | Methods of measurement, statistical analysis and errors of measurement, method development and validation, the meaning of test results, accuracy, precision, biosensors, analytical electrochemistry, chemical separation, introduction to gas and liquid chromatography. Credit will be granted for only one of CHEM 211 or BIOC 211. | Prerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. |
| | XMT | | Laboratory | In Person Learning | Arranged | Arranged |
| Organic Chemistry for Biological Sciences I | W1 | Wed | Structure, bonding, and physical properties of carbohydrates and organic compounds; conformational analysis, stereochemistry, and chirality; reactions of alkenes, alkyl halides, and alcohols. Emphasis will be placed on biological applications. Credit will be granted for only one of CHEM 213 or CHEM 233. | Prerequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. |
| | G02 | | Lecture | In Person Learning | Mon Wed Fri | 2:00 p.m. - 3:30 p.m. |
| Organic Chemistry for Biological Sciences I | W1 | Wed | Structure, bonding, and physical properties of organic compounds; conformational analysis, stereochemistry, and chirality; reactions of alkenes, alkyl halides, and alcohols. Emphasis will be placed on biological applications. Credit will be granted for only one of CHEM 203 or CHEM 213. | Prerequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. |
| | L04 | | Laboratory | In Person Learning | Wed | 9:30 a.m. - 12:30 p.m. |
Structure, bonding, and physical properties of organic compounds; conformational analysis, stereoisomerism, and chirality; reactions of alkenes, alkyl halides, and alcohols. Emphasis will be placed on biological applications. Credit will be granted for only one of CHEM 203 or CHEM 213. [3-3*-0] Prerequisite: One of CHEM 111, CHEM 121. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 203.

CHEM O 213-L02 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Tue (Alternate weeks) 2:00 p.m. - 5:00 p.m.

CHEM O 213-L03 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Tue (Alternate weeks) 5:30 p.m. - 8:30 p.m.

CHEM O 213-L04 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Tue (Alternate weeks) 5:30 p.m. - 8:30 p.m.

CHEM O 213-L05 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Wed (Alternate weeks) 9:30 a.m. - 12:30 p.m.

CHEM O 213-L06 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Wed (Alternate weeks) 9:30 a.m. - 12:30 p.m.

CHEM O 213-L07 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Wed (Alternate weeks) 5:30 p.m. - 8:30 p.m.

CHEM O 213-L08 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Wed (Alternate weeks) 5:30 p.m. - 8:30 p.m.

CHEM O 213-L09 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Thu (Alternate weeks) 9:30 a.m. - 12:30 p.m.

CHEM O 213-L10 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Thu (Alternate weeks) 9:30 a.m. - 12:30 p.m.

CHEM O 213-L11 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Thu (Alternate weeks) 1:30 p.m. - 4:30 p.m.

CHEM O 213-L12 Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Thu (Alternate weeks) 1:30 p.m. - 4:30 p.m.

CHEM O 213-XMT Organic Chemistry for Biological Sciences I W1 Laboratory In Person Learning Arranged Arranged

Introduction to structure, composition, and chemical processes occurring in Earth's atmosphere including interactions with solar radiation, stratospheric ozone layer, photochemical smog, and acid rain. [3-0]* Prerequisite: One of MATH 101, MATH 103 and one of CHEM 113, CHEM 121 and one of PHYS 111, PHYS 122.

CHEM O 220-001 Organic Chemistry for Biological Sciences I W1 Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

CHEM O 302-001 Atmospheric Environmental Chemistry W1 Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Division</th>
<th>Credits</th>
<th>Term</th>
<th>Schedule</th>
<th>Instructor</th>
<th>Notes</th>
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<tr>
<td>CHEM 304-001</td>
<td>Advanced Physical Chemistry</td>
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<td>W1</td>
<td>Lecture</td>
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<td>CHEM 304-101</td>
<td>Advanced Physical Chemistry</td>
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<td>0.04</td>
<td>W1</td>
<td>Lecture</td>
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<td>CHEM 304-102</td>
<td>Advanced Physical Chemistry</td>
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<td>0.02</td>
<td>W1</td>
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<td>CHEM 304-XMT</td>
<td>Advanced Physical Chemistry</td>
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<td>CHEM 305-101</td>
<td>Biophysical Chemistry</td>
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<td>W1</td>
<td>Lecture</td>
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<tr>
<td>CHEM 305-102</td>
<td>Biophysical Chemistry</td>
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<td>0.01</td>
<td>W1</td>
<td>Lecture</td>
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<td>CHEM 305-XMT</td>
<td>Biophysical Chemistry</td>
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<td>0.01</td>
<td>W1</td>
<td>Lecture</td>
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<td>CHEM 330-001</td>
<td>Spectroscopic Techniques in Organic Chemistry</td>
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<td>0.01</td>
<td>W1</td>
<td>Lecture</td>
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<td>Organometallic Chemistry</td>
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<td>0.01</td>
<td>W1</td>
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<td>CHEM 338-101</td>
<td>Organometallic Chemistry</td>
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<td>0.01</td>
<td>W1</td>
<td>Lecture</td>
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<tr>
<td>CHEM 338-102</td>
<td>Organometallic Chemistry</td>
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<td>W1</td>
<td>Lecture</td>
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<td>CHEM 338-XMT</td>
<td>Organometallic Chemistry</td>
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<td>W1</td>
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<td>CHEM 422-001</td>
<td>Methods in Metabolomics</td>
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<td>0.02</td>
<td>W1</td>
<td>Lecture</td>
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<td>CHEM 430-001</td>
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<td>CHEM 434-001</td>
<td>Chromatography and Mass Spectrometry</td>
<td></td>
<td>0.02</td>
<td>W1</td>
<td>Lecture</td>
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<tr>
<td>CHEM 448-A,001</td>
<td>Special Topics in Chemistry, Lecture Format</td>
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<td>0.01</td>
<td>W1</td>
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<td>CHEM 448-A,002</td>
<td>Special Topics in Chemistry, Lecture Format</td>
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<td>W1</td>
<td>Lecture</td>
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<td>CHEM 448-A,001</td>
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<td>CHEM 448-A,002</td>
<td>Special Topics in Chemistry, Lecture Format</td>
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<td>0.01</td>
<td>W1</td>
<td>Lecture</td>
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</tbody>
</table>
Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448-B_001
448
B
B_001
Special Topics in Chemistry, Lecture Format
W1-2
Independent Study
In Person Learning
Arranged
Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448-B_002
448
B
B_002
Special Topics in Chemistry, Lecture Format
W1-2
Independent Study
In Person Learning
Arranged
Arranged

Original research under the direction of a faculty member for either one (3 credits) or two (6 credits) semesters. Includes a written thesis and poster presentation. It is recommended that CHEM 448 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 72%, and approval of both the Chemistry Curriculum Committee and a faculty supervisor.

CHEM 448-C_001
448
C
C_001
Special Topics in Chemistry, Lecture Format
W1
Independent Study
In Person Learning
Arranged
Arranged

Integrated laboratory course designed to illustrate principles of modern physical and biophysical chemistry. Prerequisite: CHEM 311.

CHEM 449-001
449
001
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-002
449
002
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-003
449
003
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-004
449
004
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-005
449
005
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-006
449
006
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-007
449
007
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Original research work under the direction of a faculty member. A written thesis, public poster presentation, and public thesis defence is required. It is recommended that CHEM 449 not be taken until a student’s final year of study. Prerequisite: Fourth-year standing in the Chemistry or Environmental Chemistry Major with a minimum overall grade average of 70% (in all courses taken applicable to the Chemistry Major) and approval of the Chemistry Curriculum Committee.

CHEM 449-008
449
008
Honours Thesis
W1-2
Thesis
In Person Learning
Arranged
Arranged

Advanced Analytical Chemistry Laboratory
461
001
Laboratory
W1
In Person Learning
Tue
8:00 a.m. - 2:00 p.m.

CHEM 461-001
461
001
Advanced Analytical Chemistry Laboratory
W1
Laboratory
In Person Learning
Mon
9:00 a.m. - 3:00 p.m.

CHEM 464-001
464
001
Advanced Physical and Biophysical Chemistry Lab
W1
Laboratory
In Person Learning
Thu
8:30 a.m. - 2:30 p.m.
CHEM_O 485-001 CHEM_O 485 001 Natural Product Biosynthesis and Synthetic Biology W1

CHEM_O 533-001 CHEM_O 533 001 Metabolomics W1

CHEM_O 534-001 CHEM_O 534 001 Chromatography and Mass Spectrometry W1

CHEM_O 549-001 CHEM_O 549 001 General Seminar in Chemistry W1

CHEM_O 549-002 CHEM_O 549 002 M.Sc. Thesis W1

CHEM_O 558-001 CHEM_O 558 001 Natural Product Biosynthesis and Synthetic Biology W1

CHEM_O 649-001 CHEM_O 649 001 Ph.D. Thesis W1

CHEM_O 649-002 CHEM_O 649 002 Ph.D. Thesis W1

CHEM_O 649-001 CHEM_O 649 001 M.Sc. Thesis W1

CHEM_O 649-002 CHEM_O 649 002 M.Sc. Thesis W1

CHEM_O 649-001 CHEM_O 649 001 Ph.D. Thesis W1

CHIN_O 106-001 CHIN_O 106 001 Basic Chinese I W1

CMPE_O 201-001 CMPE_O 201 001 Computing for Science, Engineering, and Technology W1

CDDP_O 403-101 CDDP_O 403 101 Co-op Education Work Experience I W1

CDDP_O 403-101 CDDP_O 403 101 Co-op Education Work Experience II W1

CDDP_O 403-101 CDDP_O 403 101 Co-op Education Work Experience III W1

CDDP_O 403-101 CDDP_O 403 101 Co-op Education Work Experience IV W1

CDDP_O 403-101 CDDP_O 403 101 Co-op Education Work Experience V W1

CDDP_O 406-101 CDDP_O 406 101 Co-op Education Work Experience VI W1

CDRH_O 203-001 CDRH_O 203 001 Communication in the Sciences W1

CDRH_O 203-001 CDRH_O 203 001 Communication in the Sciences W1

CDRH_O 204-001 CDRH_O 204 001 Communications in the Humanities W1

CDRH_O 204-001 CDRH_O 204 001 Communications in the Humanities W1

CDRH_O 205-001 CDRH_O 205 001 Communication in the Social Sciences W1

CDRH_O 205-001 CDRH_O 205 001 Communication in the Social Sciences W1

CDRH_O 206-001 CDRH_O 206 001 Communication in the Social Sciences W1

CDRH_O 206-002 CDRH_O 206 002 Communication in the Social Sciences W1

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Schedule</th>
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<tr>
<td>CHEM_O 533-001</td>
<td>Metabolomics</td>
<td>1</td>
<td>Tue Thu</td>
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<tr>
<td>CHEM_O 534-001</td>
<td>Chromatography and Mass Spectrometry</td>
<td>1</td>
<td>Tue Thu</td>
</tr>
<tr>
<td>CHEM_O 549-001</td>
<td>General Seminar in Chemistry</td>
<td>1</td>
<td>Tue Thu</td>
</tr>
<tr>
<td>CHEM_O 558-001</td>
<td>Natural Product Biosynthesis and Synthetic Biology</td>
<td>1</td>
<td>Tue Thu</td>
</tr>
<tr>
<td>CHIN_O 106-001</td>
<td>Basic Chinese I</td>
<td>1</td>
<td>Tue Thu</td>
</tr>
<tr>
<td>CMPE_O 201-001</td>
<td>Computing for Science, Engineering, and Technology</td>
<td>1</td>
<td>Tue Thu</td>
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<tr>
<td>CDDP_O 403-101</td>
<td>Co-op Education Work Experience I</td>
<td>1</td>
<td>Tue Thu</td>
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<td>CDDP_O 403-101</td>
<td>Co-op Education Work Experience II</td>
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<tr>
<td>CDDP_O 403-101</td>
<td>Co-op Education Work Experience III</td>
<td>1</td>
<td>Tue Thu</td>
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<td>CDDP_O 403-101</td>
<td>Co-op Education Work Experience V</td>
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<td>CDDP_O 406-101</td>
<td>Co-op Education Work Experience VI</td>
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<td>CDRH_O 203-001</td>
<td>Communication in the Sciences</td>
<td>1</td>
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<tr>
<td>CDRH_O 204-001</td>
<td>Communications in the Humanities</td>
<td>1</td>
<td>Tue Thu</td>
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<td>CDRH_O 205-001</td>
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<td>1</td>
<td>Tue Thu</td>
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<tr>
<td>CDRH_O 206-001</td>
<td>Communication in the Social Sciences</td>
<td>1</td>
<td>Tue Thu</td>
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Chromatography and Mass Spectrometry: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Chemistry and Metabolism Analysis: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Origin and Metabolism of Chemicals in the Human Body: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Social Science Literature and Communicating to Experts: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Humanities Literature and Communicating to Experts: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Scientific Literature and Communicating to Experts: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Biotechnology and Synthetic Biology: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Mathematics and Engineering: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Economics and Finance: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of History and Politics: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of International Relations: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Technology and Innovation: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged

Analysis of Environment and Sustainability: Students present a one-hour lecture on a topic agreed upon jointly with the instructor, but unrelated to their previous or current research projects. Students will be assessed on their seminar and a related written paper. Lecture In Person Learning Arranged Arranged
Multidisciplinary concepts of and approaches to identity and agency in personal and professional interpersonal communication settings, face-to-face and online. Fosters application of communication skills and enactments of agency in dyadic and collaborative contexts. Prerequisite: Third-year standing or permission of the instructor.

Lecture In Person Learning Fri 11:00 a.m. - 2:00 p.m.

Practice-based approach to social media through writing studios’ scholarship, with a focus on rhetorical analysis of social writing in digital platforms that informs self-representation and communication in groups/communities. Prerequisite: Third-year standing or permission of the instructor.

Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

Study of a selected theme, topic or movement in communication studies. Consult current course listings for description. With different topics, this course may be taken more than once for credit. Prerequisite: Third-year standing.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Lecture In Person Learning Tue 2:00 p.m. - 4:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Mon 12:00 p.m. - 2:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Fri 8:00 a.m. - 10:00 a.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Mon 8:00 a.m. - 10:00 a.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Thu 4:00 p.m. - 6:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Tue 2:00 p.m. - 4:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Thu 4:00 p.m. - 6:00 p.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Wed 8:00 a.m. - 10:00 a.m.

Introduction to the design, implementation, and understanding of computer programs. Topics include problem solving, algorithm design, and data and procedural abstraction, with emphasis on the development of working programs. This course should be followed by COSC 121. [3-2-0] Prerequisite: A score of 70% or higher in one of PREC 12, MATH 12, MATH 125, MATH 126.

Laboratory In Person Learning Tue 12:00 p.m. - 2:00 p.m.
In Person Learning
8:00 a.m. - 10:00 a.m.

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Thu 8:00 a.m. - 10:00 a.m.

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Laboratory 11:00 a.m. - 12:30 p.m. 001 Introduction to Operating Systems

In Person Learning In Person Learning

W1 12:00 p.m. - 2:00 p.m. L02 Laboratory Human Computer Interaction

In Person Learning In Person Learning

W1 12:00 p.m. - 2:00 p.m. L04 Laboratory Image Processing and Applications

In Person Learning In Person Learning

W1 9:30 a.m. - 11:00 a.m. 103

MATH 221, APSC 179. 

435, or COSC 445. [3-0-0] Prerequisite: One of COSC 210, COSC 222 and one of MATH 200, APSC 248 and one of MATH 221, APSC 179.

Fundamental theoretical and practical concepts for processing and analyzing real-world digital images and videos, image enhancement and filtering, frequency domain and other transform analysis, morphological image operations, image segmentation, and object recognition. Credit will be granted for only one of COSC 344, COSC 435, or COSC 495. [3-0-0] Prerequisite: One of COSC 210, COSC 222 and one of MATH 200, APSC 248 and one of MATH 221, APSC 179.

Techniques to construct large systems using fundamental activities of specification, design, implementation, testing, and maintenance. Various life cycle models, exposure to software development tools, modelling techniques, good development practices, and project management. [3-2-0] Prerequisite: One of COSC 111, COSC 123, COSC 210, COSC 222, COSC 223 and third-year standing.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304.

Techniques to construct large systems using fundamental activities of specification, design, implementation, testing, and maintenance. Various life cycle models, exposure to software development tools, modelling techniques, good development practices, and project management. [3-2-0] Prerequisite: One of COSC 210, COSC 222, COSC 223 and third-year standing.

Techniques to construct large systems using fundamental activities of specification, design, implementation, testing, and maintenance. Various life cycle models, exposure to software development tools, modelling techniques, good development practices, and project management. [3-2-0] Prerequisite: One of COSC 210, COSC 222, COSC 223 and third-year standing.

Introduction to introduction to batch, multiprogramming, and time-sharing systems. Process synchronization and communication. Main memory allocation techniques including virtual memory; process scheduling; deadlock avoidance and prevention; file organization and device management. [3-2-0] Prerequisite: All of COSC 221, COSC 222, COSC 223 and third-year standing.

Introduction to introduction to batch, multiprogramming, and time-sharing systems. Process synchronization and communication. Main memory allocation techniques including virtual memory; process scheduling; deadlock avoidance and prevention; file organization and device management. [3-2-0] Prerequisite: All of COSC 221, COSC 222, COSC 223 and third-year standing.

Introduction to introduction to batch, multiprogramming, and time-sharing systems. Process synchronization and communication. Main memory allocation techniques including virtual memory; process scheduling; deadlock avoidance and prevention; file organization and device management. [3-2-0] Prerequisite: All of COSC 221, COSC 222, COSC 223 and third-year standing.

Introduction to introduction to batch, multiprogramming, and time-sharing systems. Process synchronization and communication. Main memory allocation techniques including virtual memory; process scheduling; deadlock avoidance and prevention; file organization and device management. [3-2-0] Prerequisite: All of COSC 221, COSC 222, COSC 223 and third-year standing.

Introduction to introduction to batch, multiprogramming, and time-sharing systems. Process synchronization and communication. Main memory allocation techniques including virtual memory; process scheduling; deadlock avoidance and prevention; file organization and device management. [3-2-0] Prerequisite: All of COSC 221, COSC 222, COSC 223 and third-year standing.

Introduction to introduction to batch, multiprogramming, and time-sharing systems. Process synchronization and communication. Main memory allocation techniques including virtual memory; process scheduling; deadlock avoidance and prevention; file organization and device management. [3-2-0] Prerequisite: All of COSC 221, COSC 222, COSC 223 and third-year standing.

Techniques to construct large systems using fundamental activities of specification, design, implementation, testing, and maintenance. Various life cycle models, exposure to software development tools, modelling techniques, good development practices, and project management. [3-2-0] Prerequisite: One of COSC 210, COSC 222, COSC 223 and third-year standing.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. Laboratory In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. Laboratory In Person Learning Wed 8:00 a.m. - 10:00 a.m.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. Laboratory In Person Learning Thu 12:00 p.m. - 2:00 p.m.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. Laboratory In Person Learning Mon 12:00 p.m. - 2:00 p.m.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. Laboratory In Person Learning Fri 12:00 p.m. - 2:00 p.m.

Software development and techniques for computation, analysis, and visualization of data. Manipulation of small and large data sets. Automation using scripting. Credit will be granted for only one of COSC 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Corequisite: COSC 304. Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.

Laboratory In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Laboratory In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

Laboratory In Person Learning Tue 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Mon 4:00 p.m. - 6:00 p.m.

Laboratory In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.

Laboratory In Person Learning Mon 12:00 p.m. - 2:00 p.m.

Laboratory In Person Learning Thu 2:00 p.m. - 4:00 p.m.

Laboratory In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

Laboratory In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

Laboratory In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.
COSC 448-A_001 COSC_D 448 A A_001 Directed Studies in Computer Science W1 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 448-A_005 COSC_D 448 A A_005 Directed Studies in Computer Science W1 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 448-B_001 COSC_D 448 B B_001 Directed Studies in Computer Science W1-2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 448-B_002 COSC_D 448 B B_002 Directed Studies in Computer Science W1-2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 448-B_003 COSC_D 448 B B_003 Directed Studies in Computer Science W1-2 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 448-C_001 COSC_D 448 C C_001 Directed Studies in Computer Science W1 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 448-C_002 COSC_D 448 C C_002 Directed Studies in Computer Science W1 Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Third-year standing and permission of the department head. Independent Study In Person Learning Arranged Arranged

COSC 449-001 COSC_D 440 001 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-003 COSC_D 440 003 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-004 COSC_D 440 004 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-005 COSC_D 440 005 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-006 COSC_D 440 006 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-007 COSC_D 440 007 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-008 COSC_D 440 008 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-009 COSC_D 440 009 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-010 COSC_D 440 010 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-011 COSC_D 440 011 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-012 COSC_D 440 012 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-013 COSC_D 440 013 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-014 COSC_D 440 014 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-015 COSC_D 440 015 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged

COSC 449-016 COSC_D 440 016 Honours Thesis W1-2 Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head. Thesis In Person Learning Arranged Arranged
Students will undertake a research project as agreed upon by the student, supervising faculty member, and department head. A written thesis and a public presentation (poster or seminar) are required. Prerequisite: Fourth-year standing; admission to the B.A. or B.Sc. Computer Science Honours Program; and permission of the department head.

Prerequisite: Either (a) two of CRWR 205, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260 or (b) two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors and non-minors portfolio submission is also required.

Advanced workshop in the writing of poetry. Restricted to students with at least third-year standing. Restricted to Creative Writing Majors and Minors except with permission of the department. [3-0-0] Prerequisite: CRWR 160. [3-0-0] or [1-0-2] or [2-0-1]

Students are instructed and guided in the writing of fiction, are encouraged to pursue experimentation in fiction, and will participate in the feedback and critique sessions that constitute the workshop method. [3-0-0] Prerequisite: CRWR 160.

Students are instructed and guided in the writing of screenplays, are encouraged to pursue experimentation in screenwriting, and will participate in the feedback and critique sessions that constitute the workshop method. Credit will be granted for only one of CRWR 250 or FILM 250. [3-0-0] Prerequisite: One of CRWR 150, CRWR 160, VISA 104, VISA 105, VISA 106, VISA 108, THTR 101, THTR 102. Equivalency: FILM 250 Credit will be granted for only one of CRWR 150, CRWR 160. [3-0-0] or [1-0-2] or [2-0-1]

Advanced workshop in the writing of short fiction. Restricted to students with at least third-year standing. Restricted to Creative Writing Majors and Minors except with permission of the department. [3-0-0] Prerequisite: Either (a) two of CRWR 205, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260 or (b) two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors and non-minors portfolio submission is also required.

Advanced workshop in the writing of poetry. Restricted to students with at least third-year standing. Restricted to Creative Writing Majors and Minors except with permission of the department. [3-0-0] Prerequisite: Either (a) two of CRWR 205, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260 or (b) two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors and non-minors portfolio submission is also required.
CRWR  O 474-001  Writing with Media  W1
Applied and theoretical aspects of writing with media. Develops specialized skills for working with media such as audio installations, broadcast, recordings, live performance, and video. Students will be encouraged to work in interdisciplinary and collaborative modes. [0-2-0] Prerequisite: Third-year standing. Lecture In Person Learning Wed Fri 2:10 p.m. - 4:00 p.m.

CRWR  O 581-A_001  Graduate Workshop in Creative Writing - Lyric  W1
Manuscript production course for in-depth discussion and workshopping of lyric forms. No more than 6 credits in total will be granted for CRWR 581, CRWR 585, or any combination thereof. Prerequisite: Admission into the MFA CRWR program, or submission of a portfolio and permission of the Department of Creative Studies. Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.

CRWR  O 582-A_001  Graduate Workshop in Creative Writing-Narrative  W1
Manuscript production course for in-depth discussion and workshopping of narrative forms. No more than 6 credits in total will be granted for CRWR 582, CRWR 585, or any combination thereof. Prerequisite: Admission into the MFA CRWR program, or submission of a portfolio and permission of the Department of Creative Studies. Lecture In Person Learning Thu 8:00 a.m. - 11:00 a.m.

CULT  O 100-001  Cultural Studies Practices  W1
CULT  O 100-002  Cultural Studies Practices  W1
Introduction to media and cultural studies in a global context, specifically the critical analysis of cultural texts, cultural industries, and media audiences. [3-0-0] Lecture In Person Learning Tue Thu 10:00 a.m. - 3:00 p.m.

CULT  O 100-003  Cultural Studies Practices  W1
CULT  O 100-004  Cultural Studies Practices  W1
Introduction to media and cultural studies in a global context, specifically the critical analysis of cultural texts, cultural industries, and media audiences. [3-0-0] Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

CULT  O 101-001  Cultural Studies Practices  W1
Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [0-0-0] Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

CULT  O 101-002  Cultural Studies Practices  W1
Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [0-0-0] Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

CULT  O 101-003  Cultural Studies Practices  W1
Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [0-0-0] Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

CULT  O 101-004  Cultural Studies Practices  W1
Key concepts and methods across the history of cultural studies including analysis of consumer society, identity, space, and memory. [0-0-0] Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

CULT  O 210-001  Learning  W1
Introduction to film and other screen-based media as narrative, with a focus on both formal and ideological elements. Credit will be granted for only one of CULT 210 or ENGL 215. [3-0-0] Prerequisite: 3 credits of first-year CULT. Prerequisite: 3 credits of first-year ENGL. Equivalency: ENGL215 Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

CULT  O 215-001  Cultural Industries  W1
An introductory critical study of cultural industries such as television and popular music. [3-0-0] Prerequisite: Second-year standing Newsletter In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

CULT  O 220-101  Research with Media in the Humanities  W1
Researching in the context of fine arts and humanities research, students develop methods for multimedia research. No digital humanities or computing experience required. At least 35% of class time involves instruction in humanities criticism, prototyping, writing, and research. Credit will be granted for only one of CULT220 and DIHU 220. Prerequisite: 3 credits of 100-level CULT, DHU, ENGL, or FUSH 100. Equivalency: DIHU220 Lecture In Person Learning Thu 3:30 p.m. - 5:00 p.m.

CULT  O 230-001  Foundations: Reading Across Borders  W1
Survey of Indigenous-authored poetry, drama, fiction, non-fiction prose, and orature in North America, with attention to Indigenous methodologies and major critical trends. At least 35% of class time involves practice-based instruction in critical analysis, essay writing and research. Credit will be granted for only one of CULT 230 or ENGL 234. Prerequisite: 3 credits of first-year CULT and 3 credits of first-year ENGL. Equivalency: ENGL234 Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

CULT  O 250-101  Indigenous Literature  W1
An introductory critical study of cultural industries such as television and popular music. [3-0-0] Prerequisite: Second-year standing Newsletter In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

CULT  O 275-001  Foundations: Interdisciplinary Theory and Method  W1
Study of the major trends in critical theory. Attention will be given to applications of theory in literary research. Credit will be granted for only one of CULT 275 or ENGL 270. [3-0-0] Prerequisite: 3 credits of first-year CULT and 3 credits of first-year ENGL. Equivalency: ENGL270 Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

CULT  O 301-001  Film and Critical Theory  W1
The theory and practice of producing a short narrative motion picture for the purpose of developing narrative film literature. Credit will be granted for only one of CULT 301, FILM 301, THTR 301, VISA 106, VISA 261, VISA 275, CULT 210, THTR 103, CRWR 250, or FILM 300 recommended. Prerequisite: One of VISA 106, VISA 261, FILM 261, and third-year standing or permission of the instructor. Equivalency: FILM 300; THTR 301 Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

CULT  O 309-001  Performance Art: Global Perspectives  W1
History, theory, and practice of performance art as a visual medium, a global language, and a political force. Explores a wide range of experimental and interdisciplinary performance art practices, including key contributions by Indigenous artists. Credit will be granted for only one of CULT 309 or THTR 309. Prerequisite: 3 credits of first-year CULT and 3 credits of first-year ENGL. Equivalency: ENGL290 Lecture In Person Learning Wed Fri 12:00 p.m. - 3:00 p.m.

CULT  O 312-A_001  Internet Culture  W1
A critical study of the cultural influence of the Internet on everyday life. With different topics, this course may be taken more than once for credit. No more than 6 credits in total will be granted for CRWR 312, DHU 312, or any combination thereof. Credit will be granted for only one of CRWR 312 and DHU 312 when the subject matter is of the same nature. Prerequisite: Third-year standing. Equivalency: DHU312 Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

CULT  O 315-001  Television Studies  W1
The medium of television from a global perspective, and the investigation of how genres in different television broadcast regimes shape content and reception. Credit will be granted for only one of CULT 315 or DHU 315. [3-0-0] Prerequisite: Third-year standing. CULT 205, CULT 215, or CULT 220 recommended. Equivalency: DHU315 Lecture In Person Learning Wed Fri 10:00 a.m. - 11:30 a.m.

CULT  O 362-A_001  Advanced Practice in Photography  W1
Advanced studio course in digital- and film-based photography. Emphasis on photography as an artistic tool. This course may be taken twice for a maximum of 6 credits. Students in the Major/Combined Major/Major in CULT can apply no more than 6 credits in total of CULT 310, VISA 362, or any combination thereof to that degree. Prerequisite: All of VISA 244, VISA 256. Or permission of the instructor. Note: for VISA 244, CULT students must receive permission of instructor. Equivalency: VISA 362 Lecture In Person Learning Tue Thu 3:30 p.m. - 7:30 p.m.

CULT  O 371-A_001  Modern Critical Theory and Interdisciplinary Met  W1
Advanced survey of major trends within critical theory, with attention to issues such as subjectivity and power, the body, culture and imperialism, and social discourse. No more than 6 credits in total will be granted for CULT 371, ENGL 309 or any combination thereof. [3-0-0] Prerequisite: 3 credits of 200-level CULT or 200-level ENGL. One of CULT 270, CULT 275 recommended. Equivalency: ENGL309 Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
<th>Co-requisites</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>DATA_405-001</td>
<td>Stochastic Modelling and Simulation</td>
<td>3-2-0</td>
<td></td>
<td>Advanced interdisciplinary course addressing the importance of technology-based approaches in contemporary art, with emphasis placed upon the formation of an interdisciplinary nature, and the media most appropriate to its expression. Students in the Major/Combined Major/Minor in CULT can apply no more than 6 credits in total of DATA 382, DATA 383, or any combination thereof to their degree. Prerequisite: One of DATA 206, DATA 266, DATA 268, DATA 269, VISA 271, or permission of the instructor. Equivalency: VISA 382</td>
</tr>
<tr>
<td>CULT_437-B_001</td>
<td>Postcolonial Studies</td>
<td>3-1-0</td>
<td></td>
<td>Examine colonialism, decolonization, and globalization, as they relate to literature and other modes of cultural production, using a cross-cultural framework. Topics vary from year to year. Examine colonialism, decolonization, and globalization, as they relate to literature and other modes of cultural production, using a cross-cultural framework. Topics vary from year to year. Prerequisite: Third-year standing.</td>
</tr>
<tr>
<td>DATA_411-001</td>
<td>Performance Studies</td>
<td>3-2-0</td>
<td></td>
<td>Seminar in the interdisciplinary field of performance studies, broadly conceived as the investigation of aesthetic, ritual, and everyday life performance practices. Credit will be granted for only one of CULT 411, THTR 411, or WRLD 411. Prerequisite: Third-year standing. Equivalency: THTR411, WRLD411</td>
</tr>
<tr>
<td>DATA_437-B_001</td>
<td>Data Modelling</td>
<td>3-2-0</td>
<td></td>
<td>Examine the fundamental concepts of data science, including data cleaning, visualization, simulation, basic modeling, and prediction making. Prerequisite: Either (a) one of STAT 205, STAT 230, or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 373; and one of COSC 111, APS 177.</td>
</tr>
<tr>
<td>DATA_448-B_001</td>
<td>Directed Studies in Data Science</td>
<td>3-2-0</td>
<td></td>
<td>Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Completion of a project and an oral presentation are required. Prerequisite: Third-year standing in the Data Science major or Honours, and permission of the department head.</td>
</tr>
<tr>
<td>DATA_410-001</td>
<td>Making Predictions with Data</td>
<td>3-2-0</td>
<td></td>
<td>Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modeling, and prediction making. Prerequisite: Either (a) one of STAT 205, STAT 230, or (b) a score more than 75% in one of APSC 254, BOX 202, PSYO 373; and one of COSC 111, APS 177.</td>
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<td>DATA_410-001</td>
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</tr>
<tr>
<td>DATA_448-B_001</td>
<td>Directed Studies in Data Science</td>
<td>3-2-0</td>
<td></td>
<td>Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Completion of a project and an oral presentation are required. Prerequisite: Third-year standing in the Data Science major or Honours, and permission of the department head.</td>
</tr>
<tr>
<td>DATA_448-A_001</td>
<td>Directed Studies in Data Science</td>
<td>3-2-0</td>
<td></td>
<td>Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Completion of a project and an oral presentation are required. Prerequisite: Third-year standing in the Data Science major or Honours, and permission of the department head.</td>
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<tr>
<td>DATA_410-001</td>
<td>Making Predictions with Data</td>
<td>3-2-0</td>
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<td>DATA_410-001</td>
<td>Making Predictions with Data</td>
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<td>Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modeling, and prediction making. Prerequisite: Either (a) one of STAT 205, STAT 230, or (b) a score more than 75% in one of APSC 254, BOX 202, PSYO 373; and one of COSC 111, APS 177.</td>
</tr>
</tbody>
</table>

**Notes:**
- Prerequisite: One of STAT 205, STAT 230 or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 373; and one of COSC 111, APS 177.
- Students in the Major/Combined Major/Minor in CULT can apply no more than 6 credits in total of DATA 382, DATA 383, or any combination thereof to their degree.
<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>DATA_D-448-C-001</td>
<td>Directed Studies in Data Science</td>
<td>W1 Students will undertake a research project as agreed upon by the student, supervising faculty member, and unit head. A written thesis and a public presentation (poster or seminar) are required. Restricted to students in the BSc Data Science Honours Program. Prerequisite: Fourth-year standing and permission of the department head. Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Completion of a project and an oral presentation are required. Prerequisite: Third-year standing in the Data Science major or Honours, and permission of the department head. Independent Study In Person Learning Arranged Arranged</td>
</tr>
<tr>
<td>DATA_D-449-001</td>
<td>Honours Thesis</td>
<td>W1-2 Thesis In Person Learning Arranged Arranged</td>
</tr>
<tr>
<td>DATA_D-500-001</td>
<td>Communication and Consulting in Data Science</td>
<td>W1 Effective consulting practices, ethical considerations, methodology selection, data preparation, effective software development. Credit will be granted for only one of DATA 500 or STAT 400 when the subject matter is of the same nature. Lecture In Person Learning Tue Thu 2:30 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-505-001</td>
<td>Modelling and Simulation</td>
<td>W1 Simulation methodology: data collection, model design, output analysis, optimization, validation. Credit will be granted for only one of CCIS 409, DATA 405, CCIS 501, or DATA 505. Lecture In Person Learning Tue Thu 2:30 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-530-001</td>
<td>Computing Platforms for Data Science</td>
<td>W1 Introduction to software and tools for Data Science: Setup process. Restricted to students in the MDS program. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>DATA_D-530-L01</td>
<td>Computing Platforms for Data Science</td>
<td>W1 Introduction to software and tools for Data Science. Setup process. Restricted to students in the MDS program. Laboratory In Person Learning Tue 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-530-T1A</td>
<td>Computing Platforms for Data Science</td>
<td>W1 Introduction to software and tools for Data Science. Setup process. Restricted to students in the MDS program. Discussion In Person Learning Tue 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-531-001</td>
<td>Programming for Data Science</td>
<td>W1 Programming including decisions, loops, functions, and using data structures and libraries. Restricted to students in the MDS program. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-531-L01</td>
<td>Programming for Data Science</td>
<td>W1 Programming including decisions, loops, functions, and using data structures and libraries. Restricted to students in the MDS program. Laboratory In Person Learning Wed 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-531-T1A</td>
<td>Programming for Data Science</td>
<td>W1 Programming including decisions, loops, functions, and using data structures and libraries. Restricted to students in the MDS program. Discussion In Person Learning Wed 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-532-001</td>
<td>Algorithms and Data Structure</td>
<td>W1 Data structures including lists, queue, stacks, hash tables, trees and graphs. Recursion. Searching and sorting. Asymptotic complexity. Restricted to students in the MDS program. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>DATA_D-532-L01</td>
<td>Algorithms and Data Structure</td>
<td>W1 Data structures including lists, queue, stacks, hash tables, trees and graphs. Recursion. Searching and sorting. Asymptotic complexity. Restricted to students in the MDS program. Laboratory In Person Learning Wed 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-532-T1A</td>
<td>Algorithms and Data Structure</td>
<td>W1 Data structures including lists, queue, stacks, hash tables, trees and graphs. Recursion. Searching and sorting. Asymptotic complexity. Restricted to students in the MDS program. Discussion In Person Learning Wed 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-540-001</td>
<td>Databases and Data Retrieval</td>
<td>W1 Using and querying relational and NoSQL databases for analysis. Experience with SQL, JSON, and programs that use databases. Restricted to students in the MDS program. Prerequisite: DATA 501. Lecture In Person Learning Tue 11:00 a.m. - 12:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-540-L01</td>
<td>Databases and Data Retrieval</td>
<td>W1 Using and querying relational and NoSQL databases for analysis. Experience with SQL, JSON, and programs that use databases. Restricted to students in the MDS program. Prerequisite: DATA 501. Laboratory In Person Learning Mon 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-540-T1A</td>
<td>Databases and Data Retrieval</td>
<td>W1 Using and querying relational and NoSQL databases for analysis. Experience with SQL, JSON, and programs that use databases. Restricted to students in the MDS program. Prerequisite: DATA 501. Discussion In Person Learning Mon 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-541-001</td>
<td>Scripting and Reporting</td>
<td>W1 Scripting engines for data science. Reporting tools. Automation. Restricted to students in the MDS program. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>DATA_D-541-L01</td>
<td>Scripting and Reporting</td>
<td>W1 Scripting engines for data science. Reporting tools. Automation. Restricted to students in the MDS program. Laboratory In Person Learning Mon 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-541-T1A</td>
<td>Scripting and Reporting</td>
<td>W1 Scripting engines for data science. Reporting tools. Automation. Restricted to students in the MDS program. Discussion In Person Learning Mon 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-543-001</td>
<td>Data Collection</td>
<td>W1 Fundamental techniques in the collection of data. Focus will be devoted to understanding the effects of randomization, restrictions on randomization, repeated measures and blocking on the model fitting. Restricted to students in the MDS program. Prerequisite: All of DATA 540, DATA 570. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>DATA_D-543-L01</td>
<td>Data Collection</td>
<td>W1 Fundamental techniques in the collection of data. Focus will be devoted to understanding the effects of randomization, restrictions on randomization, repeated measures and blocking on the model fitting. Restricted to students in the MDS program. Prerequisite: All of DATA 540, DATA 570. Laboratory In Person Learning Tue Thu 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-543-T1A</td>
<td>Data Collection</td>
<td>W1 Fundamental techniques in the collection of data. Focus will be devoted to understanding the effects of randomization, restrictions on randomization, repeated measures and blocking on the model fitting. Restricted to students in the MDS program. Discussion In Person Learning Wed 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-553-001</td>
<td>Privacy, Security and Professional Ethics</td>
<td>W1 Data privacy laws and expectations. Freedom of information. Ethics board. Licensing. Data security. Restricted to students in the MDS program. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-553-L01</td>
<td>Privacy, Security and Professional Ethics</td>
<td>W1 Data privacy laws and expectations. Freedom of information. Ethics board. Licensing. Data security. Restricted to students in the MDS program. Laboratory In Person Learning Tue Thu 12:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>DATA_D-553-T1A</td>
<td>Privacy, Security and Professional Ethics</td>
<td>W1 Data privacy laws and expectations. Freedom of information. Ethics board. Licensing. Data security. Restricted to students in the MDS program. Discussion In Person Learning Tue Thu 8:30 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>DATA_D-570-001</td>
<td>Predictive Modelling</td>
<td>W1 Introduction to regression for Data Science. Simple linear regression, multiple linear regression, interactions, mixed variable types, model assessment, simple variable selection, k-nearest-neighbours regression. Restricted to students in the MDS program. Prerequisite: DATA 580. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>Course Code</td>
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<tr>
<td>ECON_O 205</td>
<td>Intermediate Macroeconomic Analysis</td>
<td>In Person Learning</td>
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<tr>
<td>Course Code</td>
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<td>Time</td>
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<tr>
<td>ECON 325-001</td>
<td>ECON 225, 001 Data and Statistics for Economics</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 225</td>
<td>Evolution of economic thinking from ancient to present times. The Greek, Islamic, and Medieval scholars; the Physiocrats, Adam Smith, Malthus, Bentham, Ricardo, M&amp; M, Marx, Keynes, and other major economists thinkers. Development of fundamental economic ideas and conflicting perspectives are studied within their social and economic context. [3-0-0] Prerequisite: One of ECON 101, ECON 102.</td>
<td>12:30 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 122</td>
<td>History of Economic Thought</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 285-001</td>
<td>Economic foundations of managerial decision-making. Demand theory, cost and production, market structure, competitive strategy, organization of the firm, welfare-economic foundations of business regulation. [3-0-0] Prerequisite: One of ECON 101, ECON 102.</td>
<td>9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>ECON 327-001</td>
<td>Introduction to Empirical Economics</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 205-001</td>
<td>The essentials of probability and statistics for applied work in economics. Topics include descriptive statistics, probability, estimation, hypothesis testing, and analysis of variance. [3-0-0] Prerequisite: All of ECON 101, ECON 102, ECON 225 and one of MATH 101, MATH 142.</td>
<td>8:00 a.m. - 9:00 a.m.</td>
</tr>
<tr>
<td>ECON 272-001</td>
<td>The essentials of probability and statistics for applied work in economics. Topics include descriptive statistics, probability, estimation, hypothesis testing, and analysis of variance. [3-0-0] Prerequisite: All of ECON 101, ECON 102, ECON 225 and one of MATH 101, MATH 142.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 272-002</td>
<td>The essentials of probability and statistics for applied work in economics. Topics include descriptive statistics, probability, estimation, hypothesis testing, and analysis of variance. [3-0-0] Prerequisite: All of ECON 101, ECON 102, ECON 225 and one of MATH 101, MATH 142.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 293-001</td>
<td>Applications of economic analysis to technological change; impact of technological change on the growth and distribution of income; economic influences on the invention and diffusion of technology; interaction between technology, work, skills, and education; public policy toward technological change. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 301-001</td>
<td>Fundamental topics in financial economics, including net present value, risk and expected return, valuing bonds and equities, the capital asset pricing model, futures and options, and international investing. [3-0-0] Prerequisite: One of ECON 101, ECON 102.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 270-001</td>
<td>Financial markets and financial institutions in theory and practice; structure and development of the Canadian financial system; development and theory of the regulation of the financial system; process of monetary control; theory and history of central banking and monetary policy. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 270-002</td>
<td>Money and Banking</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 270-003</td>
<td>Monetary theory and practice. Demand for money. Goals, strategies and tools of central banks. Theory and practice of the interactions between money and other economic variables. Recent policy issues, such as digital currency. Credit will be granted for only one of ECON 371 or ECON 371W. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>8:00 a.m. - 9:00 a.m.</td>
</tr>
<tr>
<td>ECON 371W</td>
<td>Economic analysis of markets and policies particularly affecting women. Economic discrimination, educational, occupational, and work choices; pay and employment equity; allocation of work time; household and market consumption; economics of marriage and fertility; poverty; taxation; income security and pension policies; and historical perspectives. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>12:30 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>ECON 371</td>
<td>Women in the Economy</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 372-001</td>
<td>Urban and Transportation Economics</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 372</td>
<td>Examinations of why cities exist, their internal structure, intra-city transportation, local public goods, and policy applications. Credit will be granted for only one of ECON 351 or ECON 351W. [3-0-0] Prerequisite: ECON 204 and one of ECON 372, STAT 235.</td>
<td>9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>ECON 295</td>
<td>International Trade</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 295-001</td>
<td>The determinants of trade patterns, trade policy, tariff and non-tariff barriers to trade, trade policy of protectionism, liberalization, and multilateral trade disputes, trade liberalization, and trade development. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 300</td>
<td>Labour Economics</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 300-001</td>
<td>Economic aspects of industrial relations in Canada; why workers join unions; theory of trade union behaviour; labour movement in Canada; wage determination under collective bargaining; causes of strikes and lockouts; unions and wage structure. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>ECON 361</td>
<td>Economics of Industrial Relations</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 361-001</td>
<td>The role of economics in health, healthcare, and health policy. Topics include economic determinants of health, minority health and health equity, health economic evaluation, demand for healthcare and health insurance, health risk behaviours, and public policy and health outcomes. Credit will be granted for only one of ECON 363 or ECON 363W. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>3:30 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>ECON 363</td>
<td>Health Economics</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 363-001</td>
<td>Techniques and problems in benefit-cost analysis of public projects. Examination of alternative approaches to public decision making such as cost-effectiveness analysis and multiple-objective frameworks. Case studies of projects in the areas of natural resources, the environment, human resources, public services, and transportation. [3-0-0] Prerequisite: Either (a) all of ECON 101, ECON 102 or (b) ENGR 305.</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>ECON 370-010</td>
<td>Economic analysis applied to various environmental issues, including sustainable development, quality of life, and environmental impacts of specific industrial and consumption activities. The design and implementation of government policies. Global environmental effects of human economic activity. [3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
<td>12:30 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>ECON 370-011</td>
<td>Benefit-Cost Analysis and the Economics of Project Evaluation</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 371-001</td>
<td>Economies of the Environment</td>
<td>W1</td>
</tr>
<tr>
<td>ECON 381</td>
<td>Survey of the behaviour and performance of firms. Determinants and measures of market structure, oligopoly theory, strategic behaviour, prediction, entry deterrence, advertising, regulation, and competition policy. [3-0-0] Prerequisite: All of ECON 101, ECON 102, ECON 204.</td>
<td>9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>ECON 391</td>
<td>Topics in Economics</td>
<td>W1</td>
</tr>
</tbody>
</table>
Advanced treatment of the core topics in macroeconomics such as the business cycle, inflation, unemployment, growth, alternative exchange rate regimes, and fiscal and monetary policy. (3-0-0) Prerequisite: ECON 205 and one of MATH 100, MATH 126 and one of MATH 105, MATH 143, and third-year standing. Lecture In Person Learning Tue Thu 2:00 p.m. – 3:30 p.m.

Advanced treatment of estimation, inference, and econometric problems and techniques with focus on both theoretical and applied methods and with application to a variety of economic models. (3-0-0) Prerequisite: ECON 328, or 3 credits of ECON and 3 credits of upper-level STAT. Lecture In Person Learning Mon Wed 3:30 p.m. – 5:00 p.m.

Seminar that explores various approaches, projects, methodologies, and teaching applications. Restricted to students with at least third-year standing. Pass/Fail. (1-0-0) Lecture In Person Learning Sat (Alternate weeks) 9:00 a.m. – 10:00 a.m.

Students will examine basic and fundamental questions about educational policy and practice by critically examining a variety of controversial issues including, but not limited to, issues of equity, community, and individual rights and freedoms. (3-0-0) Prerequisite: Students must have one of a 70% in English 12 or English 12 First Peoples; b) a 5 on the LPI; c) a passing grade in ENGL 009; d) or an acceptable equivalent. For a bit of equivalency options consult the Current Students website at students.ok.ubc.ca/courses-money- enrollment/registration/first-year-english/.

Using an Aboriginal approach to the cycle of learning, this developmental course provides an opportunity for first-year students to learn essential skills needed for academic success. (3-0-0) Lecture In Person Learning Wed Fri 2:00 p.m. – 3:30 p.m.

Using an Aboriginal approach to the cycle of learning, this developmental course provides an opportunity for first-year students to learn essential skills needed for academic success. (3-0-0) Lecture Online Learning Arranged Arranged

For Arts and prospective Education students who wish to gain a deeper understanding of mathematics. Using the approach of problem solving and logical reasoning throughout, topics are chosen from discrete mathematics, elementary number theory, probability and statistics, measurement and geometry, linear algebra, and applications. Credit will only be granted for one of MATH 100 or EDUC 500. Cannot be used for credit toward a B.Sc. or B.M.S. degree, or for the B.A. Major in Mathematics program. (3-0-0) Prerequisite: Foundations of Mathematics 11 or Pre-calculus 11 Equivalency: MATH 160 Lecture In Person Learning Mon Wed 8:00 a.m. – 9:30 a.m.

An introduction to the distinctive manner in which core concepts and methods of scholarly inquiry are applied to education as a field of inquiry. Through a variety of hands-on learning activities, readings, seminars, discussions, and personal reflection students will explore the processes and products of inquiry. Restricted to students with at least third-year standing. (3-0-0) Lecture In Person Learning Thu 5:00 p.m. – 8:30 p.m.

Leverage evidence based principles, approaches, methods, and strategies to design and facilitate effective learning experiences. Restricted to students with at least third-year standing. (3-0-0) Lecture In Person Learning Mon 2:00 p.m. – 5:00 p.m.

The cultivation of knowledge and understanding regarding the interdisciplinary foundations of educational principles, policies and practices, all of which are examined through large group contexts, seminars and field experiences. Pass/Fail. Prerequisite: Restricted to students in the Bachelor of Education Program Lecture In Person Learning Mon Tue Wed Thu Fri 8:00 a.m. – 5:30 p.m.

Foundational pedagogical knowledge and practice will be explored through seminars, colloquia and site-based learning where teacher candidates develop their practice and understandings related to diversity, literacies, numeracy, and learning theories. Pass/Fail. Prerequisite: EDUC 403. Lecture In Person Learning Mon Tue Wed Thu Fri 8:00 a.m. – 5:30 p.m.

Foundational pedagogical knowledge and practice will be explored through school-based inquiry. With a focus on literacy and numeracy in action, teacher candidates will work with mentor teachers in weekly school visits and then complete a micro practicum. Mentor teachers will take the lead in planning and curriculum enactment while the teacher candidate observes, works with individuals or small groups, and conducts teaching responsibilities as deemed fitting. Pass/Fail. Prerequisite: Restricted to students in the Bachelor of Education Program. Corequisite: All of EDUC 403, EDUC 413 Lecture In Person Learning Wed Fri 9:00 a.m. – 10:00 a.m.

Extended immersion in a school community, co-planning/co-teaching/co-assessing with mentors and other colleagues and, with demonstrated competency, assume the lead in planning and curriculum enactment with the support of mentor teachers. Pass/Fail. Prerequisite: EDUC 436, 6 credits of 300, 400 level or equivalent approved by the Faculty of Education. Lecture In Person Learning Arranged Arranged

An introductory course examining various issues, methods and techniques used in educational research. Consideration is given to research strategies and techniques and the selection of research questions appropriate to a range of issues facing educators. Lecture In Person Learning Sat (Alternate weeks) 9:00 a.m. – 10:00 a.m.

Examines how respective Indigenous traditional knowledge stories and storytelling practices inform organic theoretical frameworks, pedagogy, and praxis in place-based schooling, community, and peoples transforming projects. Credit will be granted for only one of EDUC 534 and EDUC 562 when the subject matter is of the same nature. Lecture Hybrid Learning Wed 5:00 p.m. – 8:00 p.m.

Building on coursework completed during the master’s program, this course supports students in the development of their M.Ed. exit projects. It provides scaffolding for the conceptualisation, development, and completion of projects that will meet or exceed the requirements for both graduate programs and teacher qualification standards. Pass/Fail. Lecture In Person Learning Arranged Arranged

Building on coursework completed during the master’s program, this course supports students in the development of their M.Ed. exit projects. It provides scaffolding for the conceptualisation, development, and completion of projects that will meet or exceed the requirements for both graduate programs and teacher qualification standards. Pass/Fail. Lecture In Person Learning Arranged Arranged

Examining inquiry frameworks as a mode of investigation. Issues, methods and techniques used in educational research. Consideration is given to research strategies and techniques and the selection of research questions appropriate to a range of issues facing scholar-practitioners. Seminar Online Learning Wed 10:00 a.m. – 11:00 a.m.
EESC_101-001  EESC_0  301  001  Environmental Science  W1  A quantitative and scientific approach to the understanding of global energy, water and nutrient cycling; growth of human populations and their effects on the environment and ecosystem function. Functional understanding of modern environmental issues, and the requirements of, and opportunities for, sustainability. [3-0-0] Lecture  In Person Learning  Tue Thu  12:30 p.m. - 2:00 p.m.

EESC_104-001  EESC_0  104  001  Four Billion Years and Counting  W1  The geological history of what is now Canada from the formation of Earth to the present day. Prac-tical applications of geology to Canadian society and the economy. [3-0-0] Lecture  In Person Learning  Mon Wed Fri  2:00 p.m. - 3:00 p.m.

EESC_111-001  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Lecture  In Person Learning  Mon Wed  3:30 p.m. - 5:00 p.m.

EESC_111-L01  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Laboratory  In Person Learning  Thu  8:00 a.m. - 10:00 a.m.

EESC_111-L02  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Laboratory  In Person Learning  Mon  10:00 a.m. - 12:00 p.m.

EESC_111-L03  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Laboratory  In Person Learning  Tue  10:00 a.m. - 12:00 p.m.

EESC_111-L04  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Laboratory  In Person Learning  Fri  2:00 p.m. - 4:00 p.m.

EESC_111-L05  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Laboratory  In Person Learning  Fri  8:00 a.m. - 10:00 a.m.

EESC_111-L06  EESC_0  111  001  Earth Science  W1  Origin, structure and composition of Earth. Plate tectonics as the unifying mechanism for mountain building, formation of ocean basins, and assembly and break-up of continents. Minerals, rocks, Earth surface processes, geological maps, natural resources and hazards. [3-2-0] Laboratory  In Person Learning  Thu  12:00 p.m. - 2:00 p.m.

EESC_200-001  EESC_0  200  001  Mineralogy  W1  Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals. [3-0-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Lecture  In Person Learning  Mon Wed Fri  11:00 a.m. - 12:00 p.m.

EESC_200-L01  EESC_0  200  001  Mineralogy  W1  Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals. [3-0-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Laboratory  In Person Learning  Tue  11:00 a.m. - 2:00 p.m.

EESC_200-L02  EESC_0  200  001  Mineralogy  W1  Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals. [3-0-0] Prerequisite: EESC 111 and one of CHEM 111, CHEM 121. Laboratory  In Person Learning  Thu  11:00 a.m. - 2:00 p.m.

EESC_222-001  EESC_0  222  001  Geomorphology  W1  Landform assemblages and processes of landscape evolution on Earth. Fundamental concepts, including system equilibrium, thresholds, complex response to external forces, and scale dependency, with application to mountains, rivers, coasts, and glaciated terrain. Laboratory exercises require field work in lab time. Required one-day, weekend trip. Credit will be granted for only one of EESC 222 or GEOG 222. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) MATH 100 and one of EESC 111, EESC 112 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG222 Lecture  In Person Learning  Mon Wed  9:30 a.m. - 11:00 a.m.

EESC_222-L01  EESC_0  222  001  Geomorphology  W1  Landform assemblages and processes of landscape evolution on Earth. Fundamental concepts, including system equilibrium, thresholds, complex response to external forces, and scale dependency, with application to mountains, rivers, coasts, and glaciated terrain. Laboratory exercises require field work in lab time. Required one-day, weekend trip. Credit will be granted for only one of EESC 222 or GEOG 222. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) MATH 100 and one of EESC 111, EESC 112 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG222 Laboratory  In Person Learning  Tue  11:00 a.m. - 2:00 p.m.

EESC_222-L02  EESC_0  222  001  Geomorphology  W1  Landform assemblages and processes of landscape evolution on Earth. Fundamental concepts, including system equilibrium, thresholds, complex response to external forces, and scale dependency, with application to mountains, rivers, coasts, and glaciated terrain. Laboratory exercises require field work in lab time. Required one-day, weekend trip. Credit will be granted for only one of EESC 222 or GEOG 222. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) MATH 100 and one of EESC 111, EESC 112 or (c) second-year standing in the Bachelor of Science. Equivalency: GEOG222 Laboratory  In Person Learning  Thu  11:00 a.m. - 2:00 p.m.

EESC_301-001  EESC_0  301  001  Limnology  W1  Integrated approaches to freshwater science and its place in environmental science. Ecosystem ecology of inland waters relating to aquatic organisms with their physical and chemical environment. Participation in a one-day weekend field trip in September or early October is required. Credit will be granted for only one of EESC 301 or EESC 307. [3-0-0] Prerequisite: All of BIOI 116, BIOI 125. Three-year standing in Biology, Earth and Environmental Sciences, Environmental Chemistry, or Freshwater Science. One of BIOI 301 or BIOI 375 is recommended. Equivalency: BIOI307 Lecture  In Person Learning  Tue Thu  11:00 a.m. - 12:30 p.m.

EESC_301-L01  EESC_0  301  001  Limnology  W1  Integrated approaches to freshwater science and its place in environmental science. Ecosystem ecology of inland waters relating to aquatic organisms with their physical and chemical environment. Participation in a one-day weekend field trip in September or early October is required. Credit will be granted for only one of EESC 301 or BIOI 307. [3-0-0] Prerequisite: All of BIOI 116, BIOI 125. Three-year standing in Biology, Earth and Environmental Sciences, Environmental Chemistry, or Freshwater Science. One of BIOI 301 or BIOI 375 is recommended. Equivalency: BIOI307 Laboratory  In Person Learning  Mon  11:00 a.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Type</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EESC 301-001</td>
<td>Environmental Impact Assessment: Process, Reg</td>
<td>3-0-0</td>
<td>Lecture</td>
<td></td>
<td>Legal, administrative and project management aspects of environmental impact assessment (EIA). EIA regulations, processes and systems. Assessment approaches and methods for cumulative effects, social/economic impacts, strategic and regional assessment, risk assessment and public participation. Canadian federal, territorial and provincial EIA systems. Credit will be granted for only one of EESC 314 or GEOG 314. Pre-requisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. Equivalency: GEOG314</td>
</tr>
<tr>
<td>EESC 322-001</td>
<td>Igneous and Metamorphic Petrology</td>
<td>3-0-0</td>
<td>Lecture</td>
<td></td>
<td>Description, classification, and petrogenesis of igneous and metamorphic rocks. Igneous and metamorphic processes. Past and present plate tectonic implications. Pre-requisite: EESC 201.</td>
</tr>
<tr>
<td>EESC 322-002</td>
<td>Igneous and Metamorphic Petrology</td>
<td>3-0-0</td>
<td>Lecture</td>
<td></td>
<td>Description, classification, and petrogenesis of igneous and metamorphic rocks. Igneous and metamorphic processes. Past and present plate tectonic implications. Pre-requisite: EESC 201.</td>
</tr>
<tr>
<td>EESC 323-001</td>
<td>Geocology</td>
<td>3-0-0</td>
<td>Lecture</td>
<td></td>
<td>Written and oral communication. Report preparation, business correspondence, and oral presentation of technical material. Advanced grammar and writing styles. Logical writing, referencing, and editing. Pre-requisite: Three credits of APSC 176, CORH 203, ENGL 109,112, 113, 114, 150, 151, 153, 154, 155, or 156. Technical information to ecologists and non-ecologists. Pre-requisite: Three credits of APSC 176, CORH 203, ENGL 109,112, 113, 114, 150, 151, 153, 154, 155, or 156.</td>
</tr>
<tr>
<td>EESC 325-001</td>
<td>Structural Geology</td>
<td>3-0-0</td>
<td>Lecture</td>
<td></td>
<td>Written and oral communication. Report preparation, business correspondence, and oral presentation of technical material. Advanced grammar and writing styles. Logical writing, referencing, and editing. Pre-requisite: Three credits of APSC 176, CORH 203, ENGL 109,112, 113, 114, 150, 151, 153, 154, 155, or 156. Technical information to ecologists and non-ecologists. Pre-requisite: Three credits of APSC 176, CORH 203, ENGL 109,112, 113, 114, 150, 151, 153, 154, 155, or 156.</td>
</tr>
<tr>
<td>EESC 341-001</td>
<td>Quaternary Glacial Environments</td>
<td>3-0-0</td>
<td>Lab</td>
<td></td>
<td>Written and oral communication. Report preparation, business correspondence, and oral presentation of technical material. Advanced grammar and writing styles. Logical writing, referencing, and editing. Pre-requisite: Three credits of APSC 176, CORH 203, ENGL 109,112, 113, 114, 150, 151, 153, 154, 155, or 156. Technical information to ecologists and non-ecologists. Pre-requisite: Three credits of APSC 176, CORH 203, ENGL 109,112, 113, 114, 150, 151, 153, 154, 155, or 156.</td>
</tr>
</tbody>
</table>
Students undertake an individual research project as agreed upon by the student and the supervising faculty member. A written thesis is required and the research must be publicly presented as a seminar or poster. Prerequisite: Admission to the Earth and Environmental Sciences or Freshwater Sciences Honours program. Thesis In Person Learning Arranged Arranged

EESC_O 449-004 EESC_O 449 004 Honours Thesis W1-2

Students undertake an individual research project as agreed upon by the student and the supervising faculty member. A written thesis is required and the research must be publicly presented as a seminar or poster. Prerequisite: Admission to the Earth and Environmental Sciences or Freshwater Sciences Honours program. Thesis In Person Learning Arranged Arranged

EESC_O 449-005 EESC_O 449 005 Honours Thesis W1-2

Students undertake an individual research project as agreed upon by the student and the supervising faculty member. A written thesis is required and the research must be publicly presented as a seminar or poster. Prerequisite: Admission to the Earth and Environmental Sciences or Freshwater Sciences Honours program. Thesis In Person Learning Arranged Arranged


Physical, chemical, and biological properties of soils, soil formation and classification. Soil physics and water movement. Soil productivity, conservation, and sustainability. The application of soil science to land use, environmental quality, global change, and sustainable development. Credit will be granted for only one of EESC 456 or GEOG 466. [3-3-0] Prerequisite: One of EESC 111, EESC 200, GEOG 109, CHEM 111, CHEM 121, PHYS 111, PHYS 112. Third-year standing. Equivalency: GEOG466

EESC_O 456-001 EESC_O 456 001 Soil Science W1 Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

Physical, chemical, and biological properties of soils, soil formation and classification. Soil physics and water movement. Soil productivity, conservation, and sustainability. The application of soil science to land use, environmental quality, global change, and sustainable development. Credit will be granted for only one of EESC 456 or GEOG 466. [3-3-0] Prerequisite: One of EESC 111, EESC 200, GEOG 109, CHEM 111, CHEM 121, PHYS 111, PHYS 112. Third-year standing. Equivalency: GEOG466

EESC_O 456-L01 EESC_O 456 L01 Soil Science W1 Laboratory In Person Learning Thu 9:00 a.m. - 11:00 a.m.

Physical, chemical, and biological properties of soils, soil formation and classification. Soil physics and water movement. Soil productivity, conservation, and sustainability. The application of soil science to land use, environmental quality, global change, and sustainable development. Credit will be granted for only one of EESC 456 or GEOG 466. [3-3-0] Prerequisite: One of EESC 111, EESC 200, GEOG 109, CHEM 111, CHEM 121, PHYS 111, PHYS 112. Third-year standing. Equivalency: GEOG466

EESC_O 456-L02 EESC_O 456 L02 Soil Science W1 Laboratory In Person Learning Tue 2:00 p.m. - 5:00 p.m.

A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109 or ENGL 109. Restricted to students in the Aboriginal Access Studies program and/or students who self-identify as Indigenous in Workday.

ENGL_O 104-001 ENGL_O 104 001 University Writing: Indigenous Perspectives W1 Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

ENGL_O 109-001 ENGL_O 109 001 Studies in Composition [Enhanced] W1-2 Lecture In Person Learning Thu 8:00 a.m. - 9:30 a.m.

A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

ENGL_O 109-002 ENGL_O 109 002 Studies in Composition [Enhanced] W1-2 Lecture In Person Learning Thu 2:00 p.m. - 3:30 p.m.

A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

ENGL_O 109-003 ENGL_O 109 003 Studies in Composition [Enhanced] W1-2 Lecture In Person Learning Thu 11:00 a.m. - 12:30 p.m.

A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

ENGL_O 109-004 ENGL_O 109 004 Studies in Composition [Enhanced] W1-2 Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

ENGL_O 109-005 ENGL_O 109 005 Studies in Composition [Enhanced] W1-2 Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

Grants of credit are given for only one of ENGL 109, ENGL 112 or ENGL 114.

The course provides an introduction to the study of the English language, with an emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

ENGL_O 112-001 ENGL_O 112 001 University Writing: Indigenous Perspectives W1 Lecture In Person Learning Tue 2:00 p.m. - 3:30 p.m.
A two-semester practice-based course that gives learners an extended opportunity to develop university-level writing skills. Advances communication abilities in rhetoric, critical analysis, grammar, and documentation, with emphasis on research-based writing and academic literacy. Essays and exercises are required. Credit will be granted for only one of ENGL 109, ENGL 112 or ENGL 114.

Lecture
In Person Learning
Mon Wed
5:00 p.m. - 6:30 p.m.

Studies in Composition

Enrolled

Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
Online Learning
Arranged
Arranged

Studies in Composition

Enrolled

001 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
Online Learning
Arranged
Arranged

Studies in Composition

Enrolled

002 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
Online Learning
Arranged
Arranged

Studies in Composition

Enrolled

003 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Tue Thu
12:30 p.m. - 2:00 p.m.

Studies in Composition

Enrolled

005 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Wed Fri
2:00 p.m. - 3:30 p.m.

Studies in Composition

Enrolled

006 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Tue Thu
11:00 a.m. - 12:30 p.m.

Studies in Composition

Enrolled

007 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Wed Fri
8:00 a.m. - 9:30 a.m.

Studies in Composition

Enrolled

008 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Tue Thu
3:30 p.m. - 5:00 p.m.

Studies in Composition

Enrolled

009 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Tue Thu
2:00 p.m. - 3:30 p.m.

Studies in Composition

Enrolled

010 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Wed Fri
3:30 p.m. - 5:00 p.m.

Studies in Composition

Enrolled

011 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Wed Fri
11:00 a.m. - 12:30 p.m.

Studies in Composition

Enrolled

012 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Mon Wed
5:00 p.m. - 6:30 p.m.

Studies in Composition

Enrolled

013 Studies in Composition W1
Practice-based approach to writing at the university level. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 112, ENGL 109, or ENGL 114.

Lecture
In Person Learning
Tue Thu
12:30 p.m. - 2:00 p.m.

Studies in Composition: Indigenous Perspectives

Enrolled

001 Studies in Composition: Indigenous Perspectives W1
Practice-based approach to writing at the university level in relation to Indigenous perspectives. Emphasis is placed on the processes of research-based writing. Credit will be granted for only one of ENGL 114, ENGL 109, or ENGL 112.

Lecture
Online Learning
Tue Thu
6:30 p.m. - 8:00 p.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Tue Thu
11:00 a.m. - 12:30 p.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Mon Wed
3:00 p.m. - 4:00 p.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Mon Wed
1:00 p.m. - 2:00 p.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Mon Wed
11:00 a.m. - 12:30 p.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Mon Wed
2:00 p.m. - 3:30 p.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Tue Thu
9:30 a.m. - 11:00 a.m.

Studies in Composition

Enrolled

150 Introduction to Literary Genre W1
Introduction to literature focusing on genres such as poetry, drama, and fiction. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Wed Fri
2:00 p.m. - 3:30 p.m.

Studies in Composition

Enrolled

153 Readings in Narrative W1
Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.

Lecture
In Person Learning
Fri
2:00 p.m. - 4:00 p.m.

Studies in Composition

Enrolled

153 Readings in Narrative W1
Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.

Discussion
In Person Learning
Wed
5:00 p.m. - 6:00 p.m.

Studies in Composition

Enrolled

153 Readings in Narrative W1
Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.

Discussion
In Person Learning
Wed
8:00 a.m. - 9:00 a.m.

Studies in Composition

Enrolled

153 Readings in Narrative W1
Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.

Discussion
In Person Learning
Fri
8:00 a.m. - 9:00 a.m.

Studies in Composition

Enrolled

153 Readings in Narrative W1
Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.

Discussion
In Person Learning
Tue
8:00 a.m. - 9:00 a.m.
<table>
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<tr>
<th>Course Code</th>
<th>Section</th>
<th>Type</th>
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<td>ENGL 155-T05</td>
<td>153</td>
<td>T05</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
<td>Discussion</td>
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<td>ENGL 155-T06</td>
<td>153</td>
<td>T06</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
<td>Discussion</td>
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<td>ENGL 155-T07</td>
<td>153</td>
<td>T07</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
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<td>T08</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
<td>Discussion</td>
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<td>ENGL 155-T09</td>
<td>153</td>
<td>T09</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
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<td>ENGL 155-T10</td>
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<td>T10</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
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<td>ENGL 155-T11</td>
<td>153</td>
<td>T11</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
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<td>ENGL 155-T12</td>
<td>153</td>
<td>T12</td>
<td>Readings in Narrative</td>
<td>W1</td>
<td>Study of narrative forms such as life-writing, films, histories, myths, narrative poems, novels, short stories, and songs. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
<td>Discussion</td>
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<tr>
<td>ENGL 155-D01</td>
<td>155</td>
<td>D01</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Lecture</td>
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<td>ENGL 155-T1A</td>
<td>155</td>
<td>T1A</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<td>ENGL 155-T1B</td>
<td>155</td>
<td>T1B</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<td>ENGL 155-T1C</td>
<td>155</td>
<td>T1C</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<tr>
<td>ENGL 155-T1D</td>
<td>155</td>
<td>T1D</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<td>ENGL 155-T1E</td>
<td>155</td>
<td>T1E</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<td>ENGL 155-T1F</td>
<td>155</td>
<td>T1F</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<tr>
<td>ENGL 155-T1G</td>
<td>155</td>
<td>T1G</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<td>ENGL 155-T1H</td>
<td>155</td>
<td>T1H</td>
<td>Writing and Making Technology in the Humanities</td>
<td>W1</td>
<td>Introduction to digital and technological cultures with a focus on humanities methods, drawing on a range of periods in technological development and critical approaches to studying technology. At least 35% of class time involves practice-based instruction in humanities criticism, prototyping, writing, and research. Equivalency: DIHU 115</td>
<td>Discussion</td>
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<tr>
<td>ENGL 156-D01</td>
<td>156</td>
<td>D01</td>
<td>Environmental Literature</td>
<td>W1</td>
<td>Introduction to literature and criticism on the environment. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
<td>Lecture</td>
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<tr>
<td>ENGL 156-D02</td>
<td>156</td>
<td>D02</td>
<td>Environmental Literature</td>
<td>W1</td>
<td>Introduction to literature and criticism on the environment. Develops skills in interpretation of texts. At least 35% of class time involves practice-based instruction in essay writing and research.</td>
<td>Lecture</td>
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</table>

ENGL 209-A_001 ENGL 209 A_001 Topics in Composition | 200 | A | Topics in Composition | W1     | Examination of published research on a special topic with emphasis on rhetorical features and social contexts. Students will produce a final project that demonstrates their ability to reason, develop ideas, organize, write in an effective style, incorporate research, and revise their work. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. | Lecture | In Person Learning | Wed | 11:00 a.m. - 12:30 p.m. |

ENGL 209-A_002 ENGL 209 A_002 Topics in Composition | 200 | A | Topics in Composition | W1     | Examination of published research on a special topic with emphasis on rhetorical features and social contexts. Students will produce a final project that demonstrates their ability to reason, develop ideas, organize, write in an effective style, incorporate research, and revise their work. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. | Lecture | In Person Learning | Tue | 2:00 p.m. - 3:30 p.m. |

ENGL 209-A_003 ENGL 209 A_003 Topics in Composition | 200 | A | Topics in Composition | W1     | Examination of published research on a special topic with emphasis on rhetorical features and social contexts. Students will produce a final project that demonstrates their ability to reason, develop ideas, organize, write in an effective style, incorporate research, and revise their work. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. | Lecture | In Person Learning | Wed | 9:30 a.m. - 11:00 a.m. |
ENGL O 212-001 001 Children's Literature W1 12:30 p.m. - 2:00 p.m.

ENGL O 155-001 001 Reading Screens W1 9:30 a.m. - 11:00 a.m.

ENGL O 220-001 001 Foundations: Literature in Historical Context 1 W1 11:00 a.m. - 12:30 p.m.

ENGL O 220-002 001 Foundations: Literature in Historical Context 1 W1 3:30 p.m. - 5:00 p.m.

ENGL O 234-001 001 Foundations: Indigenous Literature W1 3:30 p.m. - 5:00 p.m.

ENGL O 230-001 001 Foundations: Interdisciplinary Theory and Method W1 3:30 p.m. - 5:00 p.m.

ENGL O 350-001 001 Modern Critical Theory and Interdisciplinary Methods W1 3:30 p.m. - 5:00 p.m.

ENGL O 339-001 001 American Literature from the Civil War to WWI W1 9:30 a.m. - 11:00 a.m.

ENGL O 349-C 001 001 17th-Century Literature W1 3:30 p.m. - 5:00 p.m.

ENGL O 355-C 001 001 16th- and 17th-Century Studies W1 3:30 p.m. - 5:00 p.m.

ENGL O 353-101 001 Shakespeare: Later Works W1 11:00 a.m. - 12:30 p.m.

ENGL O 391-001 001 Afro-African Literature W1 11:00 a.m. - 12:30 p.m.

ENGL O 394-B 001 001 Interdisciplinary Studies in English Literature W1 Winter

ENGL O 395-I 001 001 Popular Literature W1 Winter

ENGL O 437-B 001 001 Postcolonial Studies W1 Winter

ENGL O 455-C 001 001 Major Authors of the 20th and 21st Centuries W1 Winter

History, survey of literature written for and about children, in genres such as poems, short stories, fairy tales, novels, and treatises, covering a full range of modes from didactic to realistic to fantasy. At least 30% of class time involves practice-based instruction in critical analysis, essay writing and research. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 155, ENGL 156. Lecture. In Person Learning. Wed Fri 11:00 a.m. - 12:30 p.m.

Poetry, drama, fiction, and non-fiction prose to the eighteenth century, with attention to the importance of history and changes in form for literary analysis. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture. In Person Learning. Wed Fri 3:30 p.m. - 5:00 p.m.

Poetry, drama, fiction, and non-fiction prose to the eighteenth century, with attention to the importance of history and changes in form for literary analysis. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture. In Person Learning. Wed Fri 3:30 p.m. - 5:00 p.m.

Critical intercultural reading approaches, focusing on literature and film from the global South. Emphasis upon ideas of culture, difference, and the relations between reader and text. At least 30% of class time involves practice-based instruction in critical analysis, essay writing and research. Credit will be granted for one of ENGL 224 or CLT 230. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture. In Person Learning. Wed Fri 3:30 p.m. - 5:00 p.m.

Survey of Indigenous-authored poetry, drama, fiction, non-fiction prose, and orature in North America, with attention to Indigenous methodologies and major critical trends. At least 30% of class time involves practice-based instruction in critical analysis, essay writing and research. Credit will be granted for one of ENGL 234 or CLT 250. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture. In Person Learning. Wed Fri 3:30 p.m. - 5:00 p.m.

Major trends in critical theory, with attention to the applications of theory in literary research. Credit will be granted for only one of ENGL 250 or CLT 275. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture. In Person Learning. Wed Fri 3:30 p.m. - 5:00 p.m.

Advanced survey of major trends within critical theory, with attention to issues such as subjectivity and power, the body, culture and imperialism, and social disorder. Recommended for all English Majors. No more than 6 credits in total will be granted for ENGL 109, CLT 375 or any combination thereof. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Lecture. In Person Learning. Mon Wed 9:30 a.m. - 11:00 a.m.

The movement from the literature of the Gilded Age to the Progressive Era, paying close attention to the cultural work done by realism and naturalism. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture. In Person Learning. Mon Wed 5:00 p.m. - 6:30 p.m.

Study of how literary works reflect and respond to social, political, and religious change in the context of revolution. Popular and popular works, including advice literature, political pamphlets, or political tracts, will inform critical debates on gender, religion, and/or liberty. With different topics this course may be taken more than once for credit. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture. In Person Learning. Mon Wed 3:30 p.m. - 5:00 p.m.

Explorations of sixteenth and seventeenth century works across a range of authors, forms, and genres with a thematic focus. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture. In Person Learning. Mon Wed 3:30 p.m. - 5:00 p.m.

Examinations of Shakespeare's works after 1599. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture. In Person Learning. Mon Wed 11:00 a.m. - 12:30 p.m.

Contemporary African identities in the age of accelerating globalization. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture. In Person Learning. Mon Wed 3:30 p.m. - 5:00 p.m.

An examination of one or more genres, authors, forms, themes, or major trends in popular literature. May not be taken for credit toward the English major, minor, honours or combined major, or the English concentration in the BA, General Studies. With different topics, this course may be taken three times for credit, but it cannot be used as a prerequisite for 400 level ENGL courses. ENGL 395 and ENGL 396 must have different topics in order for students to receive credit for both courses. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture. In Person Learning. Mon Wed 3:30 p.m. - 5:00 p.m.

Examines the works of no more than three significant authors will be examined. Specific topics will be announced. Prerequisite: 3 credits of 300-level ENGL. Independent Study. In Person Learning. Mon Wed 9:30 a.m. - 11:00 a.m.
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<th>Course Code</th>
<th>Course Title</th>
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<th>Room</th>
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<td>ENGR 310-101</td>
<td>Engineering Project Management</td>
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Topics in Indigenous literature and criticism in North America, including particular periods and individual authors. Credit will be granted for only one of ENGL 473 or ENGL 475. [3-0-0] Prerequisite: 3 credits of 300-level ENGL. Equivalency: GLT 450. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.
ENGR 327-L1A  ENGR O  327  L1A  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Laboratory In Person Learning Tue (Alternate weeks)  10:00 a.m. - 12:00 p.m.

ENGR 327-L1B  ENGR O  327  L1B  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Laboratory In Person Learning Tue (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 327-L1C  ENGR O  327  L1C  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Laboratory In Person Learning Wed (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 327-L1D  ENGR O  327  L1D  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Laboratory In Person Learning Ths (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 327-L1F  ENGR O  327  L1F  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Laboratory In Person Learning Mon (Alternate weeks)  1:00 p.m. - 3:00 p.m.

ENGR 327-L1G  ENGR O  327  L1G  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Laboratory In Person Learning Mon (Alternate weeks)  5:00 p.m. - 7:00 p.m.

ENGR 327-T1A  ENGR O  327  T1A  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Discussion In Person Learning Wed  10:00 a.m. - 11:00 a.m.

ENGR 327-T1B  ENGR O  327  T1B  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Discussion In Person Learning Ths  2:00 p.m. - 3:00 p.m.

ENGR 327-T1C  ENGR O  327  T1C  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Discussion In Person Learning Mon  1:00 p.m. - 2:00 p.m.

ENGR 327-T1D  ENGR O  327  T1D  Reinforced Concrete Design I  W1  Analysis of reinforced concrete members subjected to flexure, shear, and combined bending and axial forces. Design of one-way slabs, beams, and short columns. Serviceability analysis. Bond and anchorage. [3-2*-1] Prerequisite: All of APSC 259, APSC 260, APSC 261. Corequisite: ENGR 325. Discussion In Person Learning Fri  10:00 a.m. - 11:00 a.m.

ENGR 341-101  ENGR O  341  101  Engineering Hydrology  W1  Hydrologic processes, climate change and hydrologic cycle analysis, urban flood management. Emphasis on quantitative techniques. [3-0-0] Prerequisite: All of APSC 251, APSC 254. Lecture In Person Learning Wed Fri  12:30 p.m. - 2:00 p.m.

ENGR 342-201  ENGR O  342  201  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-3] Prerequisite: APSC 253. Lecture In Person Learning Mon Wed  5:30 p.m. - 6:30 p.m.

ENGR 342-L2A  ENGR O  342  L2A  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-4] Prerequisite: APSC 253. Laboratory In Person Learning Ths (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 342-L2B  ENGR O  342  L2B  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-4] Prerequisite: APSC 253. Laboratory In Person Learning Ths (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 342-L2C  ENGR O  342  L2C  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-4] Prerequisite: APSC 253. Laboratory In Person Learning Ths (Alternate weeks)  10:00 a.m. - 12:00 p.m.

ENGR 342-L2D  ENGR O  342  L2D  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-4] Prerequisite: APSC 253. Laboratory In Person Learning Ths (Alternate weeks)  10:00 a.m. - 12:00 p.m.

ENGR 342-L2E  ENGR O  342  L2E  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-4] Prerequisite: APSC 253. Laboratory In Person Learning Fri (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 342-L2F  ENGR O  342  L2F  Open-Channel Flow  W1  Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, unsteady flow, contaminant transport. [3-2*-4] Prerequisite: APSC 253. Laboratory In Person Learning Fri (Alternate weeks)  2:00 p.m. - 4:00 p.m.

ENGR 347-101  ENGR O  347  101  Environmental Engineering  W1  Air, water, environmental pollutants, and treatment design concepts. [3-0-0] Prerequisite: All of APSC 182, APSC 183, APSC 252. Lecture In Person Learning Mon  11:00 a.m. - 12:30 p.m.

ENGR 350-201  ENGR O  350  201  Linear-Circuit Theory  W1  Transient and steady-state analysis of linear circuits, Laplace transform analysis, mutual inductance and ideal transformers, frequency response and Bode plots, passive and active filters, introduction to synthesis of passive networks, two-port network models for linear systems, and circuit simulation. [3-2*-0] Prerequisite: All of APSC 246, APSC 255. Lecture In Person Learning Mon  9:30 a.m. - 11:00 a.m.

ENGR 351-201  ENGR O  351  201  Microelectronics I  W1  Signals and amplifier fundamentals, the operational amplifier, diodes, metal-oxide-semiconductor field effect transistor amplifier circuits, and bipolar junction transistor amplifier circuits. [3-2*-0] Prerequisite: APSC 251. Lecture In Person Learning Mon  6:30 p.m. - 8:00 p.m.

ENGR 351-L2A  ENGR O  351  L2A  Microelectronics I  W1  Signals and amplifier fundamentals, the operational amplifier, diodes, metal-oxide-semiconductor field effect transistor amplifier circuits, and bipolar junction transistor amplifier circuits. [3-2*-0] Prerequisite: APSC 251. Laboratory In Person Learning Ths (Alternate weeks)  8:00 a.m. - 10:00 a.m.
Signals and amplifier fundamentals, the operational amplifier, diodes, metal-oxide-semiconductor field effect transistor amplifier circuits, and bipolar junction transistor amplifier circuits. [3-2*-0] Prerequisite: APSC 255. Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.

Signals and amplifier fundamentals, the operational amplifier, diodes, metal-oxide-semiconductor field effect transistor amplifier circuits, and bipolar junction transistor amplifier circuits. [3-2*-0] Prerequisite: APSC 255. Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Signals and amplifier fundamentals, the operational amplifier, diodes, metal-oxide-semiconductor field effect transistor amplifier circuits, and bipolar junction transistor amplifier circuits. [3-2*-0] Prerequisite: APSC 255. Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Signals and amplifier fundamentals, the operational amplifier, diodes, metal-oxide-semiconductor field effect transistor amplifier circuits, and bipolar junction transistor amplifier circuits. [3-2*-0] Prerequisite: APSC 255. Laboratory In Person Learning Thu (Alternate weeks) 10:00 a.m. - 10:00 a.m.

Semiconductor materials, carrier transport phenomena, P-N diode, metal-semiconductor junction, light emitting diode, semiconductor lasers and photodiodes, bipolar junction transistors, MOSFET, and other semiconductor devices. [3-0-0] Prerequisite: APSC 255. Lecture Online Learning Tue (Alternate weeks) 10:00 a.m. - 10:00 a.m.

Semiconductor materials, carrier transport phenomena, P-N diode, metal-semiconductor junction, light emitting diode, semiconductor lasers and photodiodes, bipolar junction transistors, MOSFET, and other semiconductor devices. [3-0-0] Prerequisite: APSC 255. Lecture Online Learning Wed (Alternate weeks) 10:00 a.m. - 10:00 a.m.

Semiconductor materials, carrier transport phenomena, P-N diode, metal-semiconductor junction, light emitting diode, semiconductor lasers and photodiodes, bipolar junction transistors, MOSFET, and other semiconductor devices. [3-0-0] Prerequisite: APSC 255. Lecture Online Learning Wed (Alternate weeks) 10:00 a.m. - 10:00 a.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-1] Prerequisite: APSC 255. Lecture Online Learning Tue Thu 2:00 p.m. - 3:30 p.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-1] Prerequisite: APSC 255. Lecture Online Learning Tue Thu 10:00 a.m. - 12:00 p.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-1] Prerequisite: APSC 255. Lecture Online Learning Tue Thu 2:00 p.m. - 3:30 p.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-1] Prerequisite: APSC 255. Lecture Online Learning Tue Thu 10:00 a.m. - 12:00 p.m.

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The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-1] Prerequisite: APSC 255. Lecture Online Learning Tue Thu 2:00 p.m. - 3:30 p.m.
### In Person Learning

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 387-T1C</td>
<td>In Person Learning: Vibration of Mechanical Systems</td>
<td>4</td>
<td>Mon 1:00 p.m. - 2:00 p.m.</td>
<td>Mon 1:00 p.m. - 2:00 p.m.</td>
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<tr>
<td>ENGR 387-T1D</td>
<td>In Person Learning: Vibration of Mechanical Systems</td>
<td>4</td>
<td>Mon 10:00 a.m. - 11:00 a.m.</td>
<td>Mon 10:00 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>ENGR 387-T1E</td>
<td>In Person Learning: Vibration of Mechanical Systems</td>
<td>4</td>
<td>Mon 12:00 p.m. - 1:00 p.m.</td>
<td>Mon 12:00 p.m. - 1:00 p.m.</td>
</tr>
<tr>
<td>ENGR 387-T1F</td>
<td>In Person Learning: Vibration of Mechanical Systems</td>
<td>4</td>
<td>Mon 12:00 p.m. - 1:00 p.m.</td>
<td>Mon 12:00 p.m. - 1:00 p.m.</td>
</tr>
</tbody>
</table>

- **In Person Learning:**
  - Biostatistics used for tracking vital signs, and treatment of disease in the vascular, muscular, nervous, and respiratory systems. Introduction to the fundamentals of each body system, electrical safety, signal acquisition, biosensors, transducers, amplifiers, and analysis of human physiological measurements. Hands-on experience with sensors, biomedical devices, and design through labs. 
  - [3-0-1] Prerequisite: APSC 246.

### Biostatistics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Schedule</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 401-001</td>
<td>Biostatistics</td>
<td>4</td>
<td>Wed Fri</td>
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<tr>
<td>ENGR 401-L1A</td>
<td>Biostatistics</td>
<td>4</td>
<td>Thu (Alternate weeks)</td>
<td>Thu (Alternate weeks)</td>
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<tr>
<td>ENGR 401-L1B</td>
<td>Biostatistics</td>
<td>4</td>
<td>Thu (Alternate weeks)</td>
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</table>

- **Biostatistics:**
  - Biostatistics used for tracking vital signs, and treatment of disease in the vascular, muscular, nervous, and respiratory systems. Introduction to the fundamentals of each body system, electrical safety, signal acquisition, biosensors, transducers, amplifiers, and analysis of human physiological measurements. Hands-on experience with sensors, biomedical devices, and design through labs. 
  - [3-0-1] Prerequisite: APSC 246.

### Bioinstrumentation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Schedule</th>
<th>Location</th>
</tr>
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<tr>
<td>ENGR 402-001</td>
<td>Bioinstrumentation</td>
<td>4</td>
<td>Wed Fri</td>
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<td>ENGR 402-L1A</td>
<td>Bioinstrumentation</td>
<td>4</td>
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<td>ENGR 402-L1B</td>
<td>Bioinstrumentation</td>
<td>4</td>
<td>Thu (Alternate weeks)</td>
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</tbody>
</table>

- **Bioinstrumentation:**
  - Bioinstrumentation used for tracking vital signs, and treatment of disease in the vascular, muscular, nervous, and respiratory systems. Introduction to the fundamentals of each body system, electrical safety, signal acquisition, biosensors, transducers, amplifiers, and analysis of human physiological measurements. Hands-on experience with sensors, biomedical devices, and design through labs. 
  - [3-0-1] Prerequisite: APSC 246.

### Construction Digitalization and Informatics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 403-001</td>
<td>Construction Digitalization and Informatics</td>
<td>4</td>
<td>Tue Thu</td>
<td>Tue Thu</td>
</tr>
</tbody>
</table>

- **Construction Digitalization and Informatics:**
  - Construction Digitalization and Informatics: Hands-on experience with sensors, biomedical devices, and design through labs. 
  - [3-2*-0] Prerequisite: APSC 254.

### Earthquake Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ENGR 404-001</td>
<td>Earthquake Engineering</td>
<td>4</td>
<td>Tue Thu</td>
<td>Tue Thu</td>
</tr>
</tbody>
</table>

- **Earthquake Engineering:**
  - Earthquake Engineering: Strong ground motion; single-degree-of-freedom systems; earthquake response of linear and non-linear systems; subsoil site; multi-degree-of-freedom systems; earthquake response and design; building design considerations. 
  - [3-0-0] Prerequisite: ENGR 327.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ENGR 436Cat A</td>
<td>Rock Mechanics and Rock Engineering</td>
<td>3</td>
<td>Lecture</td>
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<td>ENGR 438</td>
<td>Rock Mechanics and Rock Engineering</td>
<td>4</td>
<td>Laboratory</td>
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<td>ENGR 440</td>
<td>Foundation Engineering</td>
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<td>ENGR 444-201</td>
<td>Solid Waste Engineering</td>
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<td>Lecture</td>
<td>Online Learning</td>
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<tr>
<td>ENGR 447</td>
<td>Design of Processes for Water and Wastewater Treatment</td>
<td>4</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>ENGR 458</td>
<td>Power Electronics</td>
<td>4</td>
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<td>In Person Learning</td>
</tr>
<tr>
<td>ENGR 459-001</td>
<td>Clinical Engineering</td>
<td>4</td>
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<tr>
<td>ENGR 460</td>
<td>Clinical Engineering</td>
<td>4</td>
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<tr>
<td>ENGR 464-201</td>
<td>Solid Waste Engineering</td>
<td>2</td>
<td>Lecture</td>
<td>Online Learning</td>
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<tr>
<td>ENGR 465-101</td>
<td>Environmental Engineering</td>
<td>4</td>
<td>Lecture</td>
<td>Online Learning</td>
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<tr>
<td>ENGR 466</td>
<td>Environmental Engineering</td>
<td>4</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>ENGR 472-001</td>
<td>Fibre Optics and Photonics</td>
<td>4</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
</tbody>
</table>
Introduction to fibre optic transmission, single-mode and multimode fibre optics, dispersion and absorption design criteria, semiconductor diode lasers, LEDs, modulators, photodiodes and photodiode receivers, point-to-point and network implementations of fibre optic networks and integrated photonics systems. Credit will be granted for only one of ENGR 472 or ENGR 572. [3-2*-0] Prerequisite: ENGR 378.

Laboratory In Person Learning Thu (Alternate weeks) 2:00 p.m. - 4:00 p.m.

Introduction to fibre optic transmission, single-mode and multimode fibre optics, dispersion and absorption design criteria, semiconductor diode lasers, LEDs, modulators, photodiodes and photodiode receivers, point-to-point and network implementations of fibre optic networks and integrated photonics systems. Credit will be granted for only one of ENGR 472 or ENGR 572. [3-2*-0] Prerequisite: ENGR 378.

Laboratory In Person Learning Thu (Alternate weeks) 2:00 p.m. - 4:00 p.m.

Wave propagation models, radiation patterns, directivity and gain, radiation resistance. Frik transmission equation, reciprocity, dipole antennas, image theory, loop antennas, uniform and non-uniform antenna arrays, broadband antennas, aperture antennas. Credit will be granted for only one of ENGR 473 or ENGR 573. [2-2*-0] Prerequisite: ENGR 378.

Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

Wave propagation models, radiation patterns, directivity and gain, radiation resistance. Frik transmission equation, reciprocity, dipole antennas, image theory, loop antennas, uniform and non-uniform antenna arrays, broadband antennas, aperture antennas. Credit will be granted for only one of ENGR 473 or ENGR 573. [2-2*-0] Prerequisite: ENGR 378.

Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

Bending of curved beams; bending of beams with asymmetric cross-sections; shear flow and centre; review of beam deflections; column buckling; Castigliano’s theorum; statically indeterminate beams, frames, and rings.

In Person Learning In Person Learning in Person Learning Thu (Alternate weeks) 2:00 p.m. - 5:00 p.m.

State-space modelling and design. Review of linear and matrix algebra, highlights of classical control theory, state-space modeling and disturbance estimation, design of feedback systems. Credit will be granted for only one of ENGR 480 or ENGR 580. [3-0-0] Prerequisite: ENGR 321.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Heat exchanger design, heat transfer with phase change, radiation heat transfer, steady and transient mass diffusion, convective mass transfer, simultaneous heat and mass transfer. Credit will be granted for only one of ENGR 484 or ENGR 584. [3-0-0] Prerequisite: All of ENGR 310, ENGR 385.

In Person Learning In Person Learning In Person Learning Tue Thu Thu (Alternate weeks) 2:00 p.m. - 3:30 p.m.

Finite Element Discretization, Direct Stiffness Method, Numerical Solution of Large Deformations, formulation of finite elements, auxiliary equations, Thermomechanical Analysis, Computer Implementation of the Finite Element Methods, Case Studies in Material Forming and Multi-Physics. Credit will be granted for only one of ENGR 492 or ENGR 592. [4-0-0] Prerequisite: Fourth-year B.A.Sc. standing.

Lecture In Person Learning In Person Learning In Person Learning Tue Thu Thu 12:30 p.m. - 2:30 p.m.

Aircraft conceptual design: methods for estimating aircraft weight, fuel load, lift, thrust, aerofoil and wing specification, engine selection and sizing, and structural loads. Introductory aerodynamics of aircrafts, flaps, and wings.

In Person Learning In Person Learning In Person Learning In Person Learning In Person Learning Tue Thu Thu 12:30 p.m. - 5:00 p.m.

A capstone design project in response to an actual engineering problem. The project can be multi-disciplinary or in a specialized area of engineering. Students are required to submit a comprehensive project report and deliver a formal presentation. [3-3-0; 0-6-0] Prerequisite: ENGR 518 or ENGR 485.

In Person Learning In Person Learning In Person Learning Thu (Alternate weeks) 8:00 a.m. - 10:00 a.m.

A capstone design project in response to an actual engineering problem. The project can be multi-disciplinary or in a specialized area of engineering. Students are required to submit a comprehensive project report and deliver a formal presentation. [3-3-0; 0-6-0] Prerequisite: ENGR 518 or ENGR 485.

In Person Learning Online Learning Thu (Alternate weeks) 6:30 p.m. - 8:00 p.m.

Strategies for clear, effective, and ethical technical communication (both written and oral). Tools and formatting for graphics, technical reports, proposals, journal papers, theses, and presentations.

In Person Learning In Person Learning In Person Learning Tue Thu Thu 5:00 p.m. - 6:30 p.m.

Fundamentals of machine learning, toolbox of machine learning, supervised learning, unsupervised learning, applications of machine learning in various engineering disciplines. Credit will be granted for only one of ENGR 518 or ENGR 485.

In Person Learning In Person Learning In Person Learning Tue Thu Thu 3:30 p.m. - 5:00 p.m.

Strong ground motion, single and multiple degree-of-freedom systems, earthquake response of linear and non-linear systems, earthquake response and design, and building design considerations.

Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

Management of the firm: strategic planning, marketing, organizational structure and behaviour. Project delivery systems: traditional, construction management, turnkey, Network planning methods. Activity planning, including construction methods selection, Estimating, bidding, and bonding. Projects control tools and procedures. Safety and quality control. Credit will be granted for only one of ENGR 533 or ENGR 433.

Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

Principles, data, and economics pertaining to the planning, design, and management of sustainable community land use and transportation systems. Credit will be granted for only one of ENGR 536 or ENGR 436.

Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

Principles, data, and economics pertaining to the planning, design, and management of sustainable community land use and transportation systems. Credit will be granted for only one of ENGR 536 or ENGR 436.

Lecture In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Applications and roles of power electronics, power semiconductor devices, diode rectifiers, phase-controlled rectifiers, DC-DC converters, DC-AC converters, resonant converters. Examples drawn from residential and industrial applications. Credit will be granted for only one of ENGR 558 or ENGR 458.

Lecture In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.

Applications and roles of power electronics, power semiconductor devices, diode rectifiers, phase-controlled rectifiers, DC-DC converters, DC-AC converters, resonant converters. Examples drawn from residential and industrial applications. Credit will be granted for only one of ENGR 558 or ENGR 458.

Lecture In Person Learning Fri (Alternate weeks) 10:00 a.m. - 12:00 p.m.
ENGR O 573-001 Engineering Project
001 772
Fibre Optics and Photonics
W1
Introduction to fibre optic transmission, single-mode and multimode fibre optics, dispersion and absorption design criteria, semiconductor diode lasers, LEDs, modulators, and pin-p-in receivers, point-to-point and network implementations of fibre optic networks and integrated photonics systems. Credit will be granted for only one of ENGR 572 or ENGR 472. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

ENGR O 573-L2A 001 772
Fibre Optics and Photonics
W1
Introduction to fibre optic transmission, single-mode and multimode fibre optics, dispersion and absorption design criteria, semiconductor diode lasers, LEDs, modulators, and pin-p-in receivers, point-to-point and network implementations of fibre optic networks and integrated photonics systems. Credit will be granted for only one of ENGR 572 or ENGR 472. Laboratory In Person Learning Thu (Alternate weeks) 10:00 a.m. - 12:00 p.m.

ENGR O 574-001 001 Antennas and Propagation
W1
Wave propagation models, radiation patterns, directivity and gain, radiation resistance. Fri: transmission equation, reciprocity, dipole antennas, image theory, loop antennas, uniform and non-uniform antenna arrays, broadband antennas, aperture antennas. Credit will be granted for only one of ENGR 574 or ENGR 474. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

ENGR O 574-L1A 001 774 L1A
Antennas and Propagation
W1
Wave propagation models, radiation patterns, directivity and gain, radiation resistance. Fri: transmission equation, reciprocity, dipole antennas, image theory, loop antennas, uniform and non-uniform antenna arrays, broadband antennas, aperture antennas. Credit will be granted for only one of ENGR 574 or ENGR 474. Lecture In Person Learning Thu (Alternate weeks) 10:00 a.m. - 12:00 p.m.

ENGR O 580-101 01 580
Modern Control
W1
Review of linear and matrix algebra, highlights of classical control theory; state-space modeling, continuous and discrete state equations, stability, controllability and observability, design of feedback systems. Credit will be granted for only one of ENGR 580 or ENGR 480. Lecture In Person Learning Wed Fri 12:30 p.m. - 02:00 p.m.

ENGR O 580-L101 01 580 L1L
Modern Control
W1
Review of linear and matrix algebra, highlights of classical control theory; state-space modeling, continuous and discrete state equations, stability, controllability and observability, design of feedback systems. Credit will be granted for only one of ENGR 580 or ENGR 480. Laboratory Online Learning Arranged Arranged

ENGR O 582-001 001 582
Finite Element Method
W1
Finite element discretization, direct stiffness method, numerical solution of large deformations, formulation of finite elements, auxiliary equations, thermomechanical analysis. Computer implementation of finite element methods, case studies in metal forming, and multi-physics. Credit will be granted for only one of ENGR 582 or ENGR 580. Lecture In Person Learning Tue Thu 12:30 p.m. - 02:00 p.m.

ENGR O 584-001 001 584
Heat and Mass Transfer
W1
Heat exchanger design, heat transfer with phase change, radiation heat transfer, steady and transient mass diffusion, convective mass transfer, simultaneous heat and mass transfer. Credit will be granted for only one of ENGR 584 or ENGR 484. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

ENGR O 597-001 001 597
Engineering Project
W1
Project on assigned topics of specialization. This course is restricted to M.Eng. students. Independent Study In Person Learning Arranged Arranged

ENGR O 599-001 001 599
Thesis
W1
For M.A.Sc. Pass/Fail.
Thesis In Person Learning Arranged Arranged

ENGR O 599-102 001 599 102
Thesis
W1
For Ph.D. Pass/Fail.
Thesis In Person Learning Arranged Arranged

ENGR O 689-001 001 689
Thesis
W1
For Ph.D. Pass/Fail.
Thesis In Person Learning Arranged Arranged

EXCH O 380-101 001 380 101
Student Exchange Program, Undergraduate
W1
Experiential In Person Learning Arranged Arranged

EXCH O 380-211 001 380 211
Student Exchange Program, Undergraduate
W1
Experiential In Person Learning Arranged Arranged

EXCH O 380-411 001 380 411
Student Exchange Program, Undergraduate
W1
Experiential In Person Learning Arranged Arranged

EXCH O 383-101 001 383 101
Study Abroad Program, Undergraduate
W1
Experiential In Person Learning Arranged Arranged

EXCH O 585-101 001 585 101
Student Exchange Program, Graduate
W1
Experiential In Person Learning Arranged Arranged

EXCH O 585-103 001 585 103
Grad Student Studying Abroad on a Non-UBC Pro/W1
W1
Experiential In Person Learning Arranged Arranged

EXCH O 585-301 001 585 301
Grad Student Studying Abroad on a Non-UBC Pro/W1
W1
Experiential In Person Learning Arranged Arranged

FILM O 103-001 001 103
Acting for Stage and Screen
W1
An introduction to acting techniques pertaining to the style of psychological realism for stage and screen. Credit will be granted for only one of FILM 103 or THTR 103. (5 hours/week studio) (5 hours/week studio) Equivalency: THTR 103 Studio In Person Learning Mon 2:00 p.m. - 5:00 p.m.

FILM O 250-001 001 250
Workshop in Creative Writing: Screenwriting
W1
Students are instructed and guided in the writing of screenplays, are encouraged to pursue experimentation in screenwriting, and will participate in the feedback and critique sessions that constitute the workshop method. Credit will be granted for only one of FILM 250 or CRWR 250. [3.5-4] Prerequisite: Two of CRWR 252, CRWR 150, VISA 104, VISA 250, VISA 106, VISA 108, THTR 101, THTR 102. Equivalency: CRWR 250 Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

FILM O 261-001 001 261
Video I
W1
[2-8] Prerequisite: One of VISA 106, VISA 108. Equivalency: VISA 261 Studio In Person Learning Wed 8:00 a.m. - 12:00 p.m.

FILM O 303-001 001 303
Narrative Film Production
W1
The theory and practice of producing a short narrative motion picture for the purpose of developing narrative film literacy. Credit will be granted for only one of FILM 303, CULT 303, or THTR 103, THTR 210, CRWR 250. The third-year standing or permission of the instructor. Equivalency: CULT 303, THTR 303 Studio In Person Learning Thu 12:00 p.m. - 03:00 p.m.

FREN O 101-001 001 101
Elementary French I
W1
for the beginner. Prepares students to understand and use familiar everyday expressions and to function in basic situations such as communicating personal details and responding in simple social settings. Corresponds to level A1 of the Common European Framework of Reference for Languages (CEFRL). Not available to students who have completed French 001. The next level course series is available in FREN 103-104. Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

FREN O 101-002 001 101
Elementary French I
W1
for the beginner. Prepares students to understand and use familiar everyday expressions and to function in basic situations such as communicating personal details and responding in simple social settings. Corresponds to level A1 of the Common European Framework of Reference for Languages (CEFRL). Not available to students who have completed French 001 and/or students who have a CEFR level A1. The next level course series is available in FREN 103-104. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor</th>
<th>Format</th>
<th>Days</th>
<th>Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 101-004</td>
<td>Elementary French I</td>
<td>W1</td>
<td>Lecture</td>
<td>Mon Wed</td>
<td>10:00 a.m. - 12:30 p.m.</td>
<td>For the beginner. Prepares students to understand and use familiar everyday expressions and to function in basic situations such as communicating personal details and responding in simple social settings. Corresponds to level A1 of the Common European Framework of Reference for Languages (CEFR). Not available to students who have completed French 11 and/or students who have a CEFR level A1. The next level course series available is FREN 101-004.</td>
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<tr>
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<td>Elementary French I</td>
<td>W1</td>
<td>Online Learning</td>
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<td>Arranged</td>
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<tr>
<td>FREN 103-001</td>
<td>Upper Elementary French I</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed</td>
<td>4:00 p.m. - 5:30 p.m.</td>
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<tr>
<td>FREN 103-002</td>
<td>Upper Elementary French I</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue Thu</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>FREN 103-003</td>
<td>Upper Elementary French I</td>
<td>W1</td>
<td>Lecture</td>
<td>Online Learning</td>
<td>Arranged</td>
<td>Arranged</td>
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<tr>
<td>FREN 122-001</td>
<td>Intermediate French I</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed</td>
<td>11:00 a.m. - 12:30 p.m.</td>
</tr>
<tr>
<td>FREN 130-001</td>
<td>Queenbeads Literature</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>FREN 344-001</td>
<td>Techniques of Oral Expression in French I</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue Thu</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>FREN 353-001</td>
<td>French Grammar</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GEOG 106-001</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed</td>
<td>8:00 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>GEOG 108-001</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed</td>
<td>10:00 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>GEOG 108-101</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Fri</td>
<td>8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>GEOG 108-102</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Fri</td>
<td>12:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>GEOG 108-103</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>10:00 a.m. - 12:00 p.m.</td>
</tr>
<tr>
<td>GEOG 108-104</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>2:00 p.m. - 4:00 p.m.</td>
</tr>
<tr>
<td>GEOG 108-105</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>2:00 p.m. - 4:00 p.m.</td>
</tr>
<tr>
<td>GEOG 108-106</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
</tr>
<tr>
<td>GEOG 108-107</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Arranged</td>
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<tr>
<td>GEOG 108-108</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
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<tr>
<td>GEOG 108-109</td>
<td>Earth Systems: Weather, Climate, and Life</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
</tr>
</tbody>
</table>
GEOG_O 128-001 GEOG_O 228 001 Human Geography: Space, Place, and Community W1
Critical introduction to the study and application of the major themes of human geography, including historical, regional, urban, social, and cultural geographies. Draws upon a range of geographic research methods to investigate geographic phenomena, especially human-environment relations. Not for Science credit. [3-0-0] Lecture Online Learning Mon Wed 9:30 a.m. - 11:00 a.m.

GEOG_O 129-001 GEOG_O 229 001 Human Geography: Resources, Development, an W1
Introduction to concepts, methods, modes of explanation, and recent critical changes in the study of human geography. Interpretation and explanation of geographic variations arising within contexts of rapidly changing cultural, demographic, economic, political, and social phenomena and their relationship to the environment. Not for Science credit. [3-0-0] Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

GEOG_O 201-001 GEOG_O 201 001 Introduction to Research in Sustainability and Ge W1
Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Develops research skills from problem definition through to design and execution of research projects, including how to identify and categorize scholarly articles; identify research questions; and, collect, analyze, and present data and research findings. Credit will be granted for only one of GEOG 201, SUST 201, or GEOG 371. [2-0-1] Equivalency: SUST 201 Discussion In Person Learning Mon 12:00 p.m. - 2:00 p.m.

GEOG_O 201-002 GEOG_O 201 002 Introduction to Research in Sustainability and Ge W1
Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Develops research skills from problem definition through to design and execution of research projects, including how to identify and categorize scholarly articles; identify research questions; and, collect, analyze, and present data and research findings. Credit will be granted for only one of GEOG 201, SUST 201, or GEOG 371. [2-0-1] Equivalency: SUST 201 Discussion In Person Learning Fri 10:00 a.m. - 11:00 a.m.

GEOG_O 222-001 GEOG_O 222 001 Geomorphology W1
Landform assemblages and processes of landscape evolution on Earth. Fundamental concepts, including system equilibrium, thresholds, complex response to external forces, and scale dependency, with application to mountains, rivers, coasts, and glaciated terrain. Laboratory exercises require field work in lab time. Required one-day, weekend trip. Credit will be granted for only one of GEOG 222 or EESC 222. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109, or (b) MATH 100 and one of EESC 111, EESC 112 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC222 Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

GEOG_O 222-101 GEOG_O 222 001 Geomorphology W1
Landform assemblages and processes of landscape evolution on Earth. Fundamental concepts, including system equilibrium, thresholds, complex response to external forces, and scale dependency, with application to mountains, rivers, coasts, and glaciated terrain. Laboratory exercises require field work in lab time. Required one-day, weekend trip. Credit will be granted for only one of GEOG 222 or EESC 222. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109, or (b) MATH 100 and one of EESC 111, EESC 112 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC222 Laboratory In Person Learning Tue 11:00 a.m. - 2:00 p.m.

GEOG_O 222-102 GEOG_O 222 002 Geomorphology W1
Landform assemblages and processes of landscape evolution on Earth. Fundamental concepts, including system equilibrium, thresholds, complex response to external forces, and scale dependency, with application to mountains, rivers, coasts, and glaciated terrain. Laboratory exercises require field work in lab time. Required one-day, weekend trip. Credit will be granted for only one of GEOG 222 or EESC 222. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109, or (b) MATH 100 and one of EESC 111, EESC 112 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC222 Laboratory In Person Learning Thu 11:00 a.m. - 2:00 p.m.

GEOG_O 235-001 GEOG_O 233 001 Climate Change and Society W1
Critical exploration of climate change as a physical, social, cultural and political challenge. Approaches major climate change themes of knowledge, causes, impacts, responses and governance from a human geography perspective. Emphasizes critical thinking, local-global connections and social justice. [1.5-0-1.5] Lecture In Person Learning Mon 2:00 p.m. - 3:30 p.m.

GEOG_O 235-002 GEOG_O 233 002 Climate Change and Society W1
Critical exploration of climate change as a physical, social, cultural and political challenge. Approaches major climate change themes of knowledge, causes, impacts, responses and governance from a human geography perspective. Emphasizes critical thinking, local-global connections and social justice. [1.5-0-1.5] Discussion In Person Learning Wed 2:30 p.m. - 3:30 p.m.

GEOG_O 257-001 GEOG_O 257 001 Seeing our World: An Introduction to Visual Geo W1
Importance of visual images of the world in historical and contemporary contexts. Questioning the role of visual technologies (mapping, photography, film, video games, and virtual reality) in shaping societal attitudes towards social, cultural, and environmental issues. Practical skills in geographic image interpretation and visual communication. Recommended prerequisite: GEOG 109. Prerequisite: One of GEOG 108, GEOG 109. Lecture In Person Learning Thu 11:00 a.m. - 12:30 p.m.

GEOG_O 271-001 GEOG_O 271 001 Geographic Data Analysis W1
Introduction to descriptive and inferential statistical analysis in geography and Earth sciences. Topics include descriptive statistics, elementary probability, statistics for spatial analysis, hypotheses testing, analysis of variance, correlation, and regression. [3-0-3] Prerequisite: 6 credits of 100- or 200-level courses in GEOG or EESC. Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.

GEOG_O 271-101 GEOG_O 271 001 Geographic Data Analysis W1
Introduction to descriptive and inferential statistical analysis in geography and Earth sciences. Topics include descriptive statistics, elementary probability, statistics for spatial analysis, hypotheses testing, analysis of variance, correlation, and regression. [3-0-3] Prerequisite: 6 credits of 100- or 200-level courses in GEOG or EESC. Laboratory In Person Learning Fri 8:00 a.m. - 11:00 a.m.

GEOG_O 271-102 GEOG_O 271 002 Geographic Data Analysis W1
Introduction to descriptive and inferential statistical analysis in geography and Earth sciences. Topics include descriptive statistics, elementary probability, statistics for spatial analysis, hypotheses testing, analysis of variance, correlation, and regression. [3-0-3] Prerequisite: 6 credits of 100- or 200-level courses in GEOG or EESC. Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

GEOG_O 314-001 GEOG_O 314 001 Environmental Impact Assessment: Process, Reg W1
Legal, administrative and project management aspects of environmental impact assessment (EIA). EIA regulations, processes and systems. Assessment approaches and methods for cumulative effects, social/economic impacts, strategic and regional assessment, risk assessment and public participation. Canadian federal, territorial and provincial EIA systems. Credit will be granted for only one of GEOG 314 or EESC 314. [3-0-0] Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. Equivalency: EESC314 Lecture In Person Learning Wed Fri 11:00 a.m. - 11:30 p.m.
Geographic dimensions of parks and outdoor recreation are examined in urban and rural environments. Understanding park evolution includes focus on the location, distribution, and site capability of parks and recreational resources, including application of ecological, amenity resource, and management models of parks and outdoor recreational facilities. [3-0-0] Prerequisite: Two of GEOG 128, GEOG 129, and/or 104.

Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

Geographical expressions and processes of wine, viticulture, and culture. Appellation and terroir frame investigation of the nature-human interface in wine production and consumption. Geographical approaches include cultural history, global and localized political economics, cultural adaptation to climate, and physical geography. [3-0-0] Prerequisite: All of GEOG 108, GEOG 109, GEOG 128, and third-year standing.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Critical, interdisciplinary approach to human-environment relations, development and environmental change. Theoretical insights across geography and anthropology with empirical insights from the Global South and Global North. Power, political economy, struggle over meaning, marginality, conflict and social justice in understanding environmental change across scales. Credit will be granted for only one of GEOG 445 or ANTH 445. [3-0-1.5] Prerequisite: One of GEOG 128, GEOG 129, and third-year standing.

Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

The relationship between population growth, demographic changes, urbanization, and the environment. Demographic patterns, mortality, fertility and family policy, economic development, migration and immigration, planning, and policy issues. [3-0-0] Prerequisite: All of GEOG 128, GEOG 129, and third-year standing.

Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

Physical, chemical, and biological properties of soils, soil formation and classification. Soil physics and water movement. Soil productivity, conservation, and sustainability. The application of soil science to land use, environmental quality, global change, and sustainable development. Credit will be granted for only one of GEOG 466 or EESC 466. [3-0-0] Prerequisite: One of EESC 111, EESC 200, GEOG 209, CHEM 111, CHEM 121, PHYS 111, PHYS 112. Third-year standing. Equivalency: EESC 456

Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

Physical, chemical, and biological properties of soils, soil formation and classification. Soil physics and water movement. Soil productivity, conservation, and sustainability. The application of soil science to land use, environmental quality, global change, and sustainable development. Credit will be granted for only one of GEOG 466 or EESC 466. [3-0-0] Prerequisite: One of EESC 111, EESC 200, GEOG 209, CHEM 111, CHEM 121, PHYS 111, PHYS 112. Third-year standing. Equivalency: EESC 456

Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

Spatial data representation; raster and vector models; spatial database structure; coordinate reference frames and projections; spatial statistics; metadata and data standards; associated technologies and data sources. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISCI 380, GEOG 370, GEOG 380, or EESC 380. [3-3-0] Prerequisite: Third-year standing.

Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

Spatial data representation; raster and vector models; spatial database structure; coordinate reference frames and projections; spatial statistics; metadata and data standards; associated technologies and data sources. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISCI 380, GEOG 370, GEOG 380, or EESC 380. [3-3-0] Prerequisite: Third-year standing.

Lecture In Person Learning Mon Wed 2:00 p.m. - 4:00 p.m.

Spatial data representation; raster and vector models; spatial database structure; coordinate reference frames and projections; spatial statistics; metadata and data standards; associated technologies and data sources. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISCI 380, GEOG 370, GEOG 380, or EESC 380. [3-3-0] Prerequisite: Third-year standing.

Laboratory In Person Learning Fri 3:00 p.m. - 6:00 p.m.

Cross-cultural and historical antecedents to gender studies and feminist thought. The social construction of knowledge and inequality through gender, race, sexuality, and class; the cultural and structural forces that create the dynamic for change and resistance in the personal and political realms of gendered lives. [3-0-0]

Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

Cross-cultural and historical antecedents to gender studies and feminist thought. The social construction of knowledge and inequality through gender, race, sexuality, and class; the cultural and structural forces that create the dynamic for change and resistance in the personal and political realms of gendered lives. [3-0-0]

Laboratory In Person Learning Fri 3:30 p.m. - 5:00 p.m.

Cross-cultural and historical antecedents to gender studies and feminist thought. The social construction of knowledge and inequality through gender, race, sexuality, and class; the cultural and structural forces that create the dynamic for change and resistance in the personal and political realms of gendered lives. [3-0-0]

Laboratory In Person Learning Thu 9:30 a.m. - 11:00 a.m.
GWST 333-001 GWST 001 Perspectives on Gendered Bodies W1 Interdisciplinary overview of approaches to gendered embodiment at the level of lived experience and of representation. Focus on the relationship of embodiment to social identity. GWST 100 and GWST 110 recommended. [3-0-0] Prerequisite: Third-year standing. Lecture Online Learning Mon 2:00 p.m. - 5:00 p.m.

GWST 433-001 GWST 001 Trans (Gender) Feminisms W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Lecture Online Learning Mon 11:00 a.m. - 2:00 p.m.

HES 100-001 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

HES 100-101 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Mon 8:00 a.m. - 10:00 a.m.

HES 100-102 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

HES 100-103 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Mon 12:00 p.m. - 2:00 p.m.

HES 100-104 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 2:00 p.m. - 4:00 p.m.

HES 100-105 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 8:00 a.m. - 10:00 a.m.

HES 100-106 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 10:00 a.m. - 12:00 p.m.

HES 100-107 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 12:00 p.m. - 2:00 p.m.

HES 100-108 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 2:00 p.m. - 4:00 p.m.

HES 100-109 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Thu 4:00 p.m. - 6:00 p.m.

HES 100-110 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Thu 5:00 p.m. - 7:00 p.m.

HES 100-111 HES 001 Foundations of Health and Exercise Sciences W1 The importance of exercise, fitness, physical activity, healthy eating, and other health behaviours across the lifespan. Principles of basic exercise prescription, fitness appraisal, behaviour change, and other positive health approaches; implications for personal health/quality of life, professional success, health care. Formerly offered as HMKN 100. Credit will be granted for only one of HES 100 or HMKN 100. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Thu 7:00 p.m. - 9:00 p.m.
Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program.

Introduction to Human Anatomy

L07 101

Foundations of Health and Exercise Sciences

L01 101

In Person Learning

W1

Laboratory

In Person Learning

Fri

6:00 p.m. - 8:00 p.m.

HES 101-011 HES_O 101 001 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Lecture In Person Learning Mon Wed 6:30 p.m. - 8:30 p.m.

HES 101-012 HES_O 101 002 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Tue 8:00 a.m. - 10:00 a.m.

HES 101-013 HES_O 101 003 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.

HES 101-014 HES_O 101 004 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Thu 8:00 a.m. - 10:00 a.m.

HES 101-015 HES_O 101 005 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Thu 10:00 a.m. - 12:00 p.m.

HES 101-016 HES_O 101 006 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Thu 12:00 p.m. - 2:00 p.m.

HES 101-017 HES_O 101 007 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Fri 8:00 a.m. - 10:00 a.m.

HES 101-018 HES_O 101 008 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Fri 10:00 a.m. - 12:00 p.m.

HES 101-019 HES_O 101 009 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Fri 12:00 p.m. - 2:00 p.m.

HES 101-020 HES_O 101 010 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.

HES 101-021 HES_O 101 011 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Tue 5:00 p.m. - 7:00 p.m.

HES 101-022 HES_O 101 012 Human Physiology I W1

Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiorespiratory systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Tue 7:00 p.m. - 9:00 p.m.

HES 102-001 HES_O 120 001 Introduction to Human Anatomy W1

Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

HES 102-011 HES_O 120 001 Introduction to Human Anatomy W1

Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 8:00 a.m. - 10:00 a.m.

HES 102-012 HES_O 120 002 Introduction to Human Anatomy W1

Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 10:00 a.m. - 12:00 p.m.

HES 102-013 HES_O 120 003 Introduction to Human Anatomy W1

Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 12:00 p.m. - 2:00 p.m.

HES 102-014 HES_O 120 004 Introduction to Human Anatomy W1

Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 2:00 p.m. - 4:00 p.m.

HES 102-015 HES_O 120 005 Introduction to Human Anatomy W1

Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems. [3-2-0] Prerequisite: Registration limited to students in the B.H.E.S. program. Laboratory In Person Learning Wed 8:00 a.m. - 10:00 a.m.
Introduction to Human Anatomy

Exercise Prescription

Exercise Testing

Social Determinants of Health

Lecture

Evaluation of health outcomes for different individuals and populations. Formerly offered as HEAL 200. Credit will be granted for only one of HES 100 or HEAL 200. (3-0-0) Limited to students in the B.H.E.S program.

Lecture

Examining the relationships between biological, psychological, social, and economic factors to understand inequities in health outcomes for different individuals and populations. Formerly offered as HEAL 200. Credit will be granted for only one of HES 100 or HEAL 200. (3-0-0) Limited to students in the B.H.E.S program.

Lecture

Exercise prescription and testing for both the healthy adult population and for special populations or persons with a disability. Credit will only be granted for HES 201 or HMKN 311. [0-0-0] Prerequisite: One of HES 105, HMKN 200 and one of HES 111, HMKN 105, and HES 120.

Lecture

Examining the relationships between biological, psychological, social, and economic factors to understand inequities in health outcomes for different individuals and populations. Formerly offered as HEAL 200. Credit will be granted for only one of HES 100 or HEAL 200. (3-0-0) Limited to students in the B.H.E.S program.

Lecture
Functional Anatomy

In Person Learning

Exercise Physiology II

305

10:00 a.m. - 12:00 p.m.

W1

In Person Learning

320

11:00 a.m. - 1:00 p.m.

W1

Mon

In Person Learning

Fri

305

Functional Anatomy

L02

Laboratory

Laboratory

001

Lecture

L05

5:00 p.m. - 6:30 p.m.

L03

Laboratory

240

Tue

10:00 a.m. - 12:00 p.m.

In Person Learning

4:00 p.m. - 6:00 p.m.

Wed

11:00 a.m. - 1:00 p.m.

Health Research Methods

W1

Introduction to the research methods commonly encountered in health research, including quantitative and qualitative designs; provides a basis for comprehending more fully the research literature relevant to health studies. Formerly offered as HMKN 206. Credit will be granted for only one of HES 240 or HMKN 206. [3-0-0]

Prerequisite: Either (a) HES 100 or (b) HMKN 100 and second-year standing in the Bi H.S. or Bi K.

Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Mon 8:00 a.m. - 10:00 a.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Mon 2:00 p.m. - 4:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Mon 4:00 p.m. - 6:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Tue 11:00 a.m. - 1:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Tue 1:00 p.m. - 3:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Thu 11:00 a.m. - 1:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Thu 1:00 p.m. - 3:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Fri 11:00 a.m. - 1:00 p.m.

Oxygen transport and vascular response during exercise in humans. Regulation and adaptation of the cardiovascular and respiratory systems during exercise. Formerly offered as HMKN 310. Credit will be granted for only one of HES 305 or HMKN 310. [3-2-0]

Prerequisite: Either (a) HMKN 200 or (b) HES 105.

Laboratory In Person Learning Fri 1:00 p.m. - 3:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-0-0]

Prerequisite: HES 120.

Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Lecture In Person Learning Mon 8:00 a.m. - 10:00 a.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Lecture In Person Learning Mon 10:00 a.m. - 12:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Mon 2:00 p.m. - 4:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Mon 4:00 p.m. - 6:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Tue 5:00 p.m. - 7:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Thu 11:00 a.m. - 1:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Thu 1:00 p.m. - 3:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Wed 5:00 p.m. - 7:00 p.m.

Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 391. [3-2-0]

Prerequisite: HES 120.

Laboratory In Person Learning Mon 6:00 p.m. - 8:00 p.m.
HE_S 320-110 HE_S 320 L10 Functional Anatomy W1 Functional aspects of human anatomy with special attention to musculoskeletal, vascular, and neural systems that support integrated human movement. Credit will only be granted for one of HES 320 or HMKN 311. [3-0-2] Prerequisite: HES 120. Laboratory In Person Learning Tue 7:00 p.m. - 9:00 p.m.

HE_S 330-001 HE_S 330 001 Introduction to Community Programming W1 The theory and practice of designing community-based programs to promote behavior change based on recent advances in behavioural science. Credit will only be granted for HES 330 or HMKN 303. [3-0-0] Prerequisite: Either (a) HES 211 or (b) HMKN 316. Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

HE_S 340-001 HE_S 340 001 Methods of Data Analysis W1 Introduction to basic statistics and methods relevant to the analysis and interpretation of quantitative data pertaining to health and social well-being. Credit will be granted for only one of HES 340, HMKN 303 or STAT 121. [1-0-0] Prerequisite: Either (a) HES 320 or (b) HMKN 206. Lecture In Person Learning Thu 8:00 a.m. - 9:30 a.m.

HE_S 350-001 HE_S 350 001 Clinical Assessment W1 Key technical skills in conducting clinical evaluations by exercise practitioners, including client interviews and communication, physical examination, pharmacological considerations, health and fitness measures and appropriate data recording and documentation. [3-0-0] Prerequisite: HES 311. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program. Lecture In Person Learning Thu 11:00 a.m. - 2:00 p.m.

HE_S 350-101 HE_S 350 L01 Clinical Assessment W1 Key technical skills in conducting clinical evaluations by exercise practitioners, including client interviews and communication, physical examination, pharmacological considerations, health and fitness measures and appropriate data recording and documentation. [3-0-0] Prerequisite: HES 311. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program. Lecture In Person Learning Wed 9:30 a.m. - 11:30 a.m.

HE_S 351-001 HE_S 351 001 Clinical Exercise Physiology W1 Integrative approach to normal and abnormal responses to exercise as well as the physiological effects of chronic conditions and their clinical management in exercise physiology. [3-0-2] Prerequisite: HES 311. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program. Discussion In Person Learning Mon 2:00 p.m. - 4:00 p.m.

HE_S 356-001 HE_S 356 001 Health Behaviour Change for Chronic Disease MvW1 Overview of behaviour change theories and principles of behaviour change intervention design with a particular focus on individual and community-based programming for those living with a variety of chronic conditions. [3-0-0] Prerequisite: Either (a) HES 331 or (b) HMKN 316. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program. Lecture In Person Learning Thu 5:00 p.m. - 6:30 p.m.

HE_S 371-001 HE_S 371 001 Professional Practice in Health & Exercise Science W1 Key considerations for safe, effective and professional practice for health and exercise specialists including legal, ethical and client-care standards. [3-0-0] Prerequisite: All of HES 311, HES 322. Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

HE_S 380-001 HE_S 380 001 Exercise Metabolism W1 The underlying metabolic events associated with exercise and nutritional challenges. Substrate delivery and skeletal muscle metabolism with respect to exercise. Formerly offered as HMKN 313. Credit will be granted for only one of HES 380 or HMKN 321. [3-0-0] Prerequisite: Either (a) HMKN 200 or (b) HES 322. and either (a) HES 200 or (b) HMKN 233. Lecture In Person Learning Fri 8:00 a.m. - 9:30 a.m.

HE_S 383-001 HE_S 383 001 Physical Dimensions of Aging W1 Changes in physiological function with age. For students planning to become health professionals. Various dimensions of life, including health and functional capacity, are addressed. Formerly offered as HMKN 331. Credit will be granted for only one of HES 383 or HMKN 331. [3-0-0] Prerequisite: Either (a) HES 105 or (b) HMKN 200; and either (a) HES 323 or (b) HMKN 233. and either (a) HES 380 or (b) HMKN 321. Lecture In Person Learning Fri 3:30 p.m. - 5:00 p.m.

HE_S 401-001 HE_S 401 001 Community Placement Experience W1 Practical work experience in a supervised health/human kinetics related work setting with a cooperating agency, private business, or industry. No more than 9 credits in total will be granted for any combination of HMKN 401, HMKN 402, HMKN 403. Formerly offered as HMKN 401. Credit will be granted for only one of HES 401 or HMKN 401. Prerequisite: One of HMKN 205, HES 240 and one of HMKN 206, HES 340; and fourth-year standing in Human Kinetics and permission of the Undergraduate Chair. Lecture In Person Learning Arranged Arranged

HE_S 402-001 HE_S 402 001 Advanced Community Placement Experience W1 Advanced hands-on-practical work experience in a supervised health-related work setting with a partnered organization. Formerly offered as HMKN 402. Credit will be granted for only one of HES 402 or HMKN 402. Prerequisite: One of HMKN 401, HES 401; and permission of both the Practicum Coordinator and the Undergraduate Chair. Lecture In Person Learning Arranged Arranged

HE_S 471-001 HE_S 471 002 Professional Ethics in Health & Exercise Sciences W1 Ethical and legal responsibilities of allied health practitioners in care and service to clients, patients and public relating to codes of conduct, consent, trust, confidentiality, standards of care, negligence, record keeping, beneficence, least harm, dignity and scope of practice. Credit will be granted for only one of HES 471 or HMKN 400. [3-0-0] Prerequisite: HES 371. Lecture In Person Learning Tue 2:00 p.m. - 3:30 p.m.

HE_S 485-001 HE_S 485 002 Advanced Circulatory Physiology W1 Physiological mechanisms within the central nervous system and muscle fibres which contribute to muscle fatigue. The influence of various factors (e.g., sex, age, disease) on muscle fatigue. Formerly offered as HMKN 415. Credit will be granted for only one of HES 485 or HMKN 415. [3-0-0] Prerequisite: Either (a) HES 240 or (b) HMKN 240; and either (a) HES 305 or (b) HMKN 305; and either (a) HES 311 or (b) HMKN 311; and either (a) HES 340 or (b) HMKN 340. Lecture In Person Learning Thu 11:00 a.m. - 2:00 p.m.

HE_S 486-001 HE_S 486 001 Muscle Fatigue W1 Physiological events associated with sensation and motor planning associated with goal-directed movement. Particular focus on plasticity associated with disease and injury. Formerly offered as HMKN 413. Credit will be granted for only one of HES 486 or HMKN 413. [3-0-0] Prerequisite: Either (a) HES 200 or (b) HMKN 200; and either (a) HES 340 or (b) HMKN 340. Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

HE_S 488-001 HE_S 488 001 Cortical Control of Movement W1 Cortical control of movement. Provides opportunities to perform research pertaining to a chosen area of Human Kinetics as agreed upon by a faculty member and student. No more than 6 credits in total of HES 488. Prerequisite: Either (a) HES 240 or (b) HMKN 240; and either (a) HES 340 or (b) HMKN 340. Permission of the School of Health and Exercise Sciences. Independent Study In Person Learning Arranged Arranged

HE_S 490-A_001 HE_S 490-A_001 Project in Health and Exercise Sciences W1 Provides opportunities to perform research pertaining to a chosen area of Human Kinetics as agreed upon by a faculty member and student. No more than 6 credits in total of HES 488. Prerequisite: Either (a) HES 240 or (b) HMKN 240; and either (a) HES 340 or (b) HMKN 340. Permission of the School of Health and Exercise Sciences. Independent Study In Person Learning Arranged Arranged
### Course Descriptions

#### HIST_D 220-001
**History of the Islamic World**  
W1  
A historical survey of the various lands, ideas, peoples, and cultures that contributed to the formation of the Islamic world, from the advent of Islam in the 7th century to the contemporary period. [3-0-0]  
Lecture  
In Person Learning  
Mon Wed  
12:30 p.m. – 2:00 p.m.

#### HIST_D 300-001
**History of Indigenous Peoples of Canada to 1876**  
W1  
The Indigenous people (status and non-status) of Canada from contact to the passage of the Indian Act in 1876. Topics include government policies, environment, gender, religion, oral narratives, colonial-frontier, disease, fur trade. [3-0-0] Prerequisite: 6 credits of HIST and third-year standing; or 3 credits of HIST, INDG 100, and third-year standing.  
Lecture  
In Person Learning  
Tue Thu  
1:00 p.m. – 2:30 p.m.

#### HIST_D 303-001
**The Hellenistic World from the Mediterranean to W1**  
The Hellenistic World from the Mediterranean to 31 BC.  
Lecture  
In Person Learning  
Tue Thu  
1:00 p.m. – 2:30 p.m.

#### HIST_D 317-001
**History of Southern Africa**  
W1  
Pre-colonial, colonial, and contemporary history emphasizing South Africa. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 135, HIST 145 and third-year standing.  
Lecture  
In Person Learning  
Thu  
11:00 a.m. – 2:00 p.m.

#### HIST_D 327-001
**American Colonial History, 1607-1763**  
W1  
Comparative study of the social, economic, and political characteristics of the 13 colonies as they changed from small European outposts to more mature societies. [3-0-0] Prerequisite: 6 credits of HIST; or HIST 211 and third-year standing.  
Lecture  
In Person Learning  
Mon Wed  
8:00 a.m. – 9:30 a.m.

#### HIST_D 351-001
**History of Gender and Sexuality in Latin America**  
W1  
Sexuality and gender relations from colonial period to the present. Role of family, state, religion, and community in constructing gender roles and sexual identities. [3-0-0] Prerequisite: One of HIST 151, or HIST 240; or third-year standing.  
Lecture  
In Person Learning  
Mon Wed  
6:30 p.m. – 9:30 p.m.

#### HIST_D 373-001
**History of Gender, Race, and Science in the Atlantic World**  
The rise of scientific theories of racial and sexual difference and their role in the creation of the early modern Atlantic world (1500-1800), including its economy, culture, and socio-political order. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 116, HIST 218 and third-year standing.  
Lecture  
In Person Learning  
Mon Wed  
12:10 p.m. – 2:30 p.m.

#### HIST_D 381_A_001
**Special Topics in Economic History**  
W1  
Students should consult the department for the particular topics offered in a given year. [3-0-0] Prerequisite: 5 credits of HIST and third-year standing.  
Lecture  
In Person Learning  
Mon Wed  
3:30 p.m. – 5:00 p.m.

#### HIST_D 395-001
**Environmental History of North America**  
W1  
Theories and methods of environmental history, focusing primarily on North America from the sixteenth to the twenty-first centuries. [2-0-1] Prerequisite: 2 credits of HIST and third-year standing.  
Lecture  
In Person Learning  
Mon Wed  
3:30 p.m. – 5:00 p.m.

#### HIST_D 420-001
**Women in Early Modern Europe**  
W1  
Examination of the experiences of women in Western Europe from 1500-1750. [3-0-0] Prerequisite: 6 credits of HIST; or HIST 115 and third-year standing.  
Lecture  
In Person Learning  
Thu  
9:30 a.m. – 11:00 a.m.

#### HIST_D 468-001
**International Relations of the Great Powers of W1**  
International relations of Britain, France, Germany, Russia, and the United States from the beginning of the 20th century until 1990. Political and diplomatic settlements between the Paris Peace Conference of 1919 and the German invasion of Poland in 1939. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 115, HIST 126 and third-year standing; or 6 credits of POL and third-year standing. Equivalency: PGL453  
Lecture  
Online Learning  
Mon Wed  
9:30 a.m. – 11:00 a.m.

#### HIST_D 473-101
**War and Society from the 18th to 20th Centuries**  
W1  
Continuity and change in the relations of war and society, and the connections between the economy, society, the military, and government in peacetime and war; not a course in military history. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 115, HIST 126, HIST 145 and third-year standing.  
Lecture  
Online Learning  
Wed Fri  
11:00 a.m. – 12:30 p.m.

#### HIST_D 492-101
**History, Theory, and Method**  
W1  
Exploring selected problems and issues in the theory and practice of historical work. Credit will be granted for only one of HIST 492 or IGS 592. [2-0-1] Prerequisite: 6 credits of HIST third-year standing. Open to non-history majors with permission of the department head. Equivalency: IGS 595  
Seminar  
In Person Learning  
Tue  
11:00 a.m. – 2:30 p.m.

#### IGS_D 502-A_001
**Seminars in Digital Arts and Humanities**  
W1  
Immersive design; user-centered and customer-oriented design; project-based learning; project conceptualization; industry- and community-sourced applications of immersive technologies.  
Lecture  
In Person Learning  
Mon Wed  
11:00 a.m. – 2:00 p.m.

#### IGS_D 524-A_001
**Proseminar in Interdisciplinary Studies**  
W1-2  
This seminar-based course prepares graduate students to excel in their academic, professional and scholarly pursuits by engaging topics related to professionalism and scholarly communication. May be offered for 1, 2, or 3 credits; program regulations for the IDS MA, MSc and PhD programs require completion of 3 credits in total. Restricted to students in the IDS MA, MSc, or PhD program. Pass/Fail.  
Seminar  
In Person Learning  
Wed (Alternate weeks)  
8:00 a.m. – 11:00 a.m.

#### IGS_D 583-001
**Indigenous Knowledge Theme Seminar**  
W1  
Theoretical background on Indigenous knowledges and Indigenous research. Focuses on a range of strategies and principles for research on or through Indigenous languages and culture. Restricted to students in the Indigenous Knowledge Theme.  
Seminar  
In Person Learning  
Tue  
12:00 p.m. – 1:00 p.m.

#### IGS_D 584-001
**Sustainability Theme Seminar**  
W1  
Introduction to the challenges and opportunities of interdisciplinary sustainability research, including problem framing, research methods and socio-ecological applications from contributing disciplines.  
Seminar  
In Person Learning  
Tue  
8:00 a.m. – 11:00 a.m.

#### IGS_D 589-001
**Global Politics, Culture and Theory**  
W1  
Examination of conceptual approaches to Global Studies.  
Seminar  
In Person Learning  
Mon  
2:30 p.m. – 5:00 p.m.

#### IGS_D 590-101
**Governance**  
W1  
Frameworks of governance systems and public policy. [0-0-0]  
Seminar  
In Person Learning  
Wed  
11:00 a.m. – 2:00 p.m.

#### IGS_D 599_A_001
**Power and Ideas**  
W1  
Exploration of the complex relations between power, knowledge and ideas. [1-0-0]  
Seminar  
In Person Learning  
Fri  
11:00 a.m. – 2:00 p.m.

#### IGS_D 599-B_001
**Master's Thesis**  
W1  
Pass/Fail.  
Thesis  
In Person Learning Arranged  
Arranged

#### IGS_D 599-C_001
**Master's Thesis**  
W1  
Pass/Fail.  
Thesis  
In Person Learning Arranged  
Arranged

#### IGS_D 599-D_001
**Doctoral Thesis**  
W1  
Pass/Fail.  
Thesis  
In Person Learning Arranged  
Arranged

#### IMTC_D 505
**Fundamentals of Immersive Technologies**  
W1  
Immersive technology principles; design of AR/MR/VR platforms; immersive interaction techniques; 3D user interfaces; custom XR app design; applications to mobile and wearable devices.  
Lecture  
In Person Learning  
Wed  
2:00 p.m. – 5:00 p.m.
<table>
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<tr>
<td>INDG 100-001</td>
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<td>One of INDG 100, INDG 102. Third-year standing. Prerequisite: INDG 204 or INDG 205.</td>
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<td>INDG 100-002</td>
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<td>Fri</td>
<td>One of INDG 100, INDG 102. Third-year standing. Prerequisite: INDG 204 or INDG 205.</td>
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<td>INDG 204-001</td>
<td>Mitis Peoples and Perspectives</td>
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<td>One of INDG 100, INDG 102. Third-year standing. Prerequisite: INDG 204 or INDG 205.</td>
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Metrology, metal forming processes, plastic deformation, plastic forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

Prerequisite: All of APSC 259, APSC 260.


2-3-0 Prerequisite: MANF 277. Lecture 3:00 p.m. - 5:00 p.m.


2-3-0 Prerequisite: MANF 277. Laboratory 3:00 p.m. - 5:00 p.m.

MANF 370-L10 MANF 370 L10 Production Systems Management II W1 Functional area of production and operations management. Decision-making, capacity planning, aggregate planning, inventory management, distribution planning, material requirements planning and quality control. 

1-0-0 Prerequisite: MANF 270. Lecture 3:00 p.m. - 5:00 p.m. 

MANF 377-L1A MANF 377 L1A Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Lecture 3:00 p.m. - 5:00 p.m.

MANF 377-L1B MANF 377 L1B Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.

MANF 377-L1C MANF 377 L1C Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.


2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.


2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.


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2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.

MANF 377-L1H MANF 377 L1H Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.

MANF 377-L1I MANF 377 L1I Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.


2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.

MANF 377-L1K MANF 377 L1K Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.

MANF 377-L1L MANF 377 L1L Manufacturing Processes W1 Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding. Metal fabrication, welding, casting. 

2-3-0 Prerequisite: All of APSC 279, APSC 260. Laboratory 3:00 p.m. - 5:00 p.m.
MANF 377-T1A  MANF 377  T1A  Manufacturing Processes  W1  Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding, Metal fabrication, welding, casting. [2-3*-1] Prerequisite: All of APSC 259, APSC 260. Discussion In Person Learning Thu 2:00 p.m. - 3:00 p.m.

MANF 377-T1B  MANF 377  T1B  Manufacturing Processes  W1  Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding, Metal fabrication, welding, casting. [2-3*-1] Prerequisite: All of APSC 259, APSC 260. Discussion In Person Learning Fri 3:00 p.m. - 4:00 p.m.

MANF 377-T1C  MANF 377  T1C  Manufacturing Processes  W1  Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding, Metal fabrication, welding, casting. [2-3*-1] Prerequisite: All of APSC 259, APSC 260. Discussion In Person Learning Mon 11:00 a.m. - 12:00 p.m.

MANF 377-T1D  MANF 377  T1D  Manufacturing Processes  W1  Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding, Metal fabrication, welding, casting. [2-3*-1] Prerequisite: All of APSC 259, APSC 260. Discussion In Person Learning Thu 3:00 p.m. - 4:00 p.m.

MANF 377-T1E  MANF 377  T1E  Manufacturing Processes  W1  Metrology, metal forming processes, plastic deformation, rolling, forging, drawing, extrusion, sheet metal forming. Machining processes and machine tools, turning, milling, drilling, grinding, Metal fabrication, welding, casting. [2-3*-1] Prerequisite: All of APSC 259, APSC 260. Discussion In Person Learning Mon 3:00 p.m. - 4:00 p.m.

MANF 377-T1F  MANF 377  T1F  Manufacturing Processes  W1  Principle components of manufacturing automation systems, industrial measurement needs, robotic programming, programmable logic control (PLC) systems and development of PLC programs. [3-2-0] Prerequisite: APSC 246. Lecture In Person Learning Thu 1:00 p.m. - 2:00 p.m.

MANF 386-001  MANF 386  001  Industrial Automation  W1  Industrial Automation  W1  Principle components of manufacturing automation systems, industrial measurement needs, robotic programming, programmable logic control (PLC) systems and development of PLC programs. [3-2-0] Prerequisite: APSC 246. Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

MANF 386-101  MANF 386  101  Industrial Automation  W1  Industrial Automation  W1  Principle components of manufacturing automation systems, industrial measurement needs, robotic programming, programmable logic control (PLC) systems and development of PLC programs. [3-2-0] Prerequisite: APSC 246. Laboratory In Person Learning Thu 5:00 p.m. - 7:00 p.m.

MANF 386-102  MANF 386  102  Industrial Automation  W1  Industrial Automation  W1  Principle components of manufacturing automation systems, industrial measurement needs, robotic programming, programmable logic control (PLC) systems and development of PLC programs. [3-2-0] Prerequisite: APSC 246. Laboratory In Person Learning Fri 5:00 p.m. - 7:00 p.m.

MANF 416-001  MANF 416  001  CAD/CAM/CAE  W1  CAD/CAM/CAE  W1  CNC machining, Rapid prototyping, G-code, Computer Aided: Design, Manufacturing and Engineering, parametric design and analysis for optimization. Manufacturing engineering students may not use this course to satisfy the requirements of their degree. [3-2-0] Prerequisite: MANF 377. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

MANF 416-101  MANF 416  101  CAD/CAM/CAE  W1  CAD/CAM/CAE  W1  CNC machining, Rapid prototyping, G-code, Computer Aided: Design, Manufacturing and Engineering, parametric design and analysis for optimization. Manufacturing engineering students may not use this course to satisfy the requirements of their degree. [3-2-0] Prerequisite: MANF 377. Laboratory In Person Learning Tue 4:00 p.m. - 6:00 p.m.

MANF 416-102  MANF 416  102  CAD/CAM/CAE  W1  CAD/CAM/CAE  W1  CNC machining, Rapid prototyping, G-code, Computer Aided: Design, Manufacturing and Engineering, parametric design and analysis for optimization. Manufacturing engineering students may not use this course to satisfy the requirements of their degree. [3-2-0] Prerequisite: MANF 377. Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.

MANF 435-001  MANF 435  001  Factory Planning  W1  Key concepts and techniques to analyze, manage and improve supply chain processes for different industries and markets. Emphasis on assessment of supply chain performance to improve competitiveness. Credit will be granted for only one of MANF 460 or MANF 560. [3-0-0] Prerequisite: Four-year B.A.Sc. standing. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

MANF 470-001  MANF 470  001  Production Systems Management III  W1  Modelling and analysis of manufacturing systems and assembly/trees, operational contingencies, multiple product manufacturing systems, scheduling theory and inventory systems. [3-0-0] Prerequisite: MANF 377. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

MANF 536-001  MANF 536  001  Advanced Manufacturing  W1  Product manufacturing, powder metallurgy, Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM), Computer Numeric Control (CNC) tools, process planning, micro and nano manufacturing, optical and electron measurement techniques. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

MANF 536-101  MANF 536  101  Advanced Manufacturing  W1  Product manufacturing, powder metallurgy, Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM), Computer Numeric Control (CNC) tools, process planning, micro and nano manufacturing, optical and electron measurement techniques. Laboratory In Person Learning Wed 4:00 p.m. - 6:00 p.m.

MANF 536-102  MANF 536  102  Advanced Manufacturing  W1  Product manufacturing, powder metallurgy, Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM), Computer Numeric Control (CNC) tools, process planning, micro and nano manufacturing, optical and electron measurement techniques. Laboratory In Person Learning Thu 10:00 a.m. - 12:00 p.m.

MANF 555-001  MANF 555  001  Factory Planning  W1  Factory-scale automation for production planning and control, manufacturing execution systems, industrial communication, product tracking, database management; hands-on training on cyber-physical manufacturing systems in a laboratory scale, virtual manufacturing environments. Credit will be granted for only one of MANF 555 or MANF 555. Lecture In Person Learning Mon 12:00 p.m. - 1:00 p.m.

MANF 555-L1A  MANF 555  L1A  Factory Planning  W1  Factory-scale automation for production planning and control, manufacturing execution systems, industrial communication, product tracking, database management; hands-on training on cyber-physical manufacturing systems in a laboratory scale, virtual manufacturing environments. Credit will be granted for only one of MANF 555 or MANF 555. Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.
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<td>MATH 100</td>
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<td>MATH 100</td>
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<td>MATH_O 408</td>
<td>001</td>
<td>Differential Geometry</td>
<td>W1</td>
<td>Lecture</td>
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<tr>
<td>MATH_O 409-001</td>
<td>MATH_O 409</td>
<td>001</td>
<td>Mathematics of Financial Derivatives</td>
<td>W1</td>
<td>Lecture</td>
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<tr>
<td>MATH_O 446-A-001</td>
<td>MATH_O 448</td>
<td>A</td>
<td>Directed Studies in Mathematics</td>
<td>W1</td>
<td>Lecture</td>
</tr>
<tr>
<td>MATH_O 446-B-001</td>
<td>MATH_O 448</td>
<td>B</td>
<td>Directed Studies in Mathematics</td>
<td>W1-2</td>
<td>Lecture</td>
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<tr>
<td>MATH_O 448-C-001</td>
<td>MATH_O 448</td>
<td>C</td>
<td>Directed Studies in Mathematics</td>
<td>W1</td>
<td>Lecture</td>
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<tr>
<td>MATH_O 461-001</td>
<td>MATH_O 461</td>
<td>001</td>
<td>Continuous Optimization</td>
<td>W1</td>
<td>Lecture</td>
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<tr>
<td>MATH_O 563-010</td>
<td>MATH_O 563</td>
<td>010</td>
<td>Convex Optimization and Non-smooth Analysis</td>
<td>W1</td>
<td>Lecture</td>
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</tbody>
</table>
Introduction to Business (MGCO 406) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design I (MGCO 401) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design II (MGCO 402) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design III (MGCO 403) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design IV (MGCO 404) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design V (MGCO 405) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design VI (MGCO 406) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.

Introduction to Computational Art and Design VII (MGCO 407) presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 499. Lecture Online Learning Tue 11:00 a.m. - 3:00 p.m.
Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Laboratory In Person Learning Tue 1:00 p.m. - 2:00 p.m.

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Laboratory In Person Learning Mon 8:00 a.m. - 9:00 a.m.

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Laboratory In Person Learning Wed 5:00 p.m. - 6:00 p.m.

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organizational behaviour, operations, business policy, information systems and entrepreneurship. Identifies the steps needed to build and manage successful local, national, and international competitive businesses and organizations. Introduces ethical and policy decisions faced by businesses, organizations and governments. Open to all students. [3-0-0] Workshop In Person Learning Tue 5:00 p.m. - 6:00 p.m.

Introduction to Management Thought and Social W1 001 Introduction to Management Thought and Social W1

Introduction to Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Tue 6:30 p.m. - 9:30 p.m.

Introduction to Financial Accounting W1 001 Introduction to Financial Accounting W1 Lecture In Person Learning Mon 8:00 a.m. - 10:00 a.m.

Introduction to Financial Accounting W1 001 Introduction to Financial Accounting W1 Lecture In Person Learning Fri 10:00 a.m. - 11:00 a.m.

Introduction to Financial Accounting W1 001 Introduction to Financial Accounting W1 Workshop In Person Learning Thu 2:00 p.m. - 3:00 p.m.

Introduction to Financial Accounting W1 001 Introduction to Financial Accounting W1 Workshop In Person Learning Wed 4:00 p.m. - 5:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Fri 11:00 a.m. - 2:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Mon 2:00 p.m. - 3:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Tue 3:30 p.m. - 5:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Thu 12:30 p.m. - 2:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Tue 3:30 p.m. - 5:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

Management Thought and Social W1 001 Introduction to Management Thought and Social W1 Workshop Online Learning Arranged Arranged
Introduction to the strategic and tactical decisions of operations management as it applies to both service and manufacturing sectors. Topics include process and technology choice, process flow, layout of facilities, capacity and resource planning, inventory control, lean systems, quality management, and quality control. [3-0-0] Prerequisite: Either (a) MATH 100 or (b) MATH 116; and two of MGMT 201, MGMT 202, MGMT 210, MGMT 230; MGMT 240, MGMT 250, MGMT 290. And 3 credits of STAT.

**MGMT_O 355-101**  
**Operations Management**  
Lecture  
In Person Learning  
Mon  
3:00 p.m. - 5:00 p.m.

Introduction to the strategic and tactical decisions of operations management as it applies to both service and manufacturing sectors. Topics include process and technology choice, process flow, layout of facilities, capacity and resource planning, inventory control, lean systems, quality management, and quality control. [3-0-0] Prerequisite: Either (a) MATH 100 or (b) MATH 116; and two of MGMT 201, MGMT 202, MGMT 210, MGMT 230; MGMT 240, MGMT 250, MGMT 290. And 3 credits of STAT.

**MGMT_O 355-102**  
**Operations Management**  
Lecture  
In Person Learning  
Mon  
3:30 p.m. - 5:00 p.m.

Introduction to the strategic and tactical decisions of operations management as it applies to both service and manufacturing sectors. Topics include process and technology choice, process flow, layout of facilities, capacity and resource planning, inventory control, lean systems, quality management, and quality control. [3-0-0] Prerequisite: Either (a) MATH 100 or (b) MATH 116; and two of MGMT 201, MGMT 202, MGMT 210, MGMT 230; MGMT 240, MGMT 250, MGMT 290. And 3 credits of STAT.

**MGMT_O 355-103**  
**Operations Management**  
Lecture  
In Person Learning  
Mon  
10:00 a.m. - 12:00 p.m.

Introduction to the strategic and tactical decisions of operations management as it applies to both service and manufacturing sectors. Topics include process and technology choice, process flow, layout of facilities, capacity and resource planning, inventory control, lean systems, quality management, and quality control. [3-0-0] Prerequisite: Either (a) MATH 100 or (b) MATH 116; and two of MGMT 201, MGMT 202, MGMT 210, MGMT 230; MGMT 240, MGMT 250, MGMT 290. And 3 credits of STAT.

**MGMT_O 355-104**  
**Operations Management**  
Lecture  
In Person Learning  
Mon  
1:00 p.m. - 3:00 p.m.

Implementation and evaluation of cost systems for management and decision making. Cost issues include: accumulating and analyzing costs using actual and standard approaches, overhead allocation, and cost estimation. Management topics include: pricing, production, investment decisions, revenue analysis, performance evaluation, management incentives systems, and strategy analysis. [3-0-0] Prerequisite: MGMT 202.

**MGMT_O 361-101**  
**Human Resources Management**  
Lecture  
In Person Learning  
Mon  
9:00 a.m. - 11:00 a.m.

Explores the latest concepts and/or issues in information technology management (ITM). Data warehousing, IS testing, and forecasting. [3-0-0] Prerequisite: MGMT 230, and third-year standing.

**MGMT_O 429-A_001**  
**Special Topics in Information Technology Manage**  
Lecture, Online Learning  
Arranged  
Arranged  

Introduction to the Income Tax Act (Canada). Focuses on fundamental tax principles as well as developing familiarity in using the Income Tax Act and other tax research tools. Topics include sources of income, computing income for tax purposes for individuals and corporations, tax planning opportunities, and other tax issues. [3-0-0] Prerequisite: MGMT 201.

**MGMT_O 436-001**  
**Investments**  
Lecture  
In Person Learning  
Thu  
7:00 p.m. - 9:00 p.m.

Basic principles and tools of investment analysis. Understanding of the properties and uses of three broad types of financial securities: equity securities (common stock), fixed income securities (government and corporate bonds), and derivative securities (e.g., futures, options). The trading process, portfolio theory (risk-return and risk-aversion models), security analysis, and investment performance evaluation. [3-0-0] Prerequisite: MGMT 310; and third-year standing.

**MGMT_O 436-001**  
**Investments**  
Lecture  
In Person Learning  
Thu  
10:00 a.m. - 12:00 p.m.

Introduction to the latest concepts and/or issues in information technology management (ITM). Data warehousing, IS testing, and forecasting. [3-0-0] Prerequisite: MGMT 230, and third-year standing.

**MGMT_O 443-101**  
**New Product and Service Development**  
Lecture  
In Person Learning  
Mon  
12:30 p.m. - 2:00 p.m.

Examines from a marketing perspective the process of conceptualizing, designing, developing, launching and testing, and forecasting. [3-0-0] Prerequisite: MGMT 220, MGMT 290. Third-year standing. Equivalency: SECH 400

**MGMT_O 443-102**  
**New Product and Service Development**  
Lecture  
In Person Learning  
Mon  
12:30 p.m. - 2:00 p.m.

Examines from a marketing perspective the process of conceptualizing, designing, developing, launching and testing, and forecasting. [3-0-0] Prerequisite: MGMT 220, MGMT 290. Third-year standing. Equivalency: SECH 400

**MGMT_O 443-103**  
**New Product and Service Development**  
Lecture  
In Person Learning  
Mon  
12:30 p.m. - 2:00 p.m.

Methods to assess the efficiency of health-related programs; theoretical and practical empirical methods for conducting, analyzing and interpreting applied economic evaluations in the context of health and healthcare. Credit will be granted for only one of MGMT 472, MGMT 571, SECH 490 or SECH 500. Prerequisite: Third-year standing. Equivalency: SECH 490.
Investigates how strategy and change affects the organization and how the organization can be designed or realigned to realize its strategy more effectively. Alignment with organizational mission, how strategic decisions affect the organization structures, processes, culture, resources (both human and financial), and management styles, and how the organization can manage the change process. [3-0-0] Prerequisite: All of MGMT 230, MGMT 360: Third-year standing.

Workshop In Person Learning Thu 5:00 p.m. - 6:30 p.m.

Investigates how strategy and change affects the organization and how the organization can be designed or realigned to realize its strategy more effectively. Alignment with organizational mission, how strategic decisions affect the organization structures, processes, culture, resources (both human and financial), and management styles, and how the organization can manage the change process. [3-0-0] Prerequisite: All of MGMT 230, MGMT 360: Third-year standing.

Workshop In Person Learning Tue 11:00 a.m. - 12:30 p.m.

Investigates how strategy and change affects the organization and how the organization can be designed or realigned to realize its strategy more effectively. Alignment with organizational mission, how strategic decisions affect the organization structures, processes, culture, resources (both human and financial), and management styles, and how the organization can manage the change process. [3-0-0] Prerequisite: All of MGMT 230, MGMT 360: Third-year standing.

Workshop In Person Learning Thu 11:00 a.m. - 12:30 p.m.

Political, legal, technological, competitive, and cultural issues that shape organizations as they operate worldwide. Understanding of the application of management theory (trade theory, modes of entry, foreign direct investment, factor mobility theory) to the strategic management problems of doing business in the international arena. Cultural aspects of operating in an international environment. [3-0-0] Prerequisite: All of MGMT 230, MGMT 310. Third-year standing and 3 credits of ENGL.

Lecture In Person Learning Mon 11:00 a.m. - 12:30 p.m.

Political, legal, technological, competitive, and cultural issues that shape organizations as they operate worldwide. Understanding of the application of management theory (trade theory, modes of entry, foreign direct investment, factor mobility theory) to the strategic management problems of doing business in the international arena. Cultural aspects of operating in an international environment. [3-0-0] Prerequisite: All of MGMT 230, MGMT 310. Third-year standing and 3 credits of ENGL.

Workshop In Person Learning Tue 12:30 p.m. - 2:00 p.m.

Political, legal, technological, competitive, and cultural issues that shape organizations as they operate worldwide. Understanding of the application of management theory (trade theory, modes of entry, foreign direct investment, factor mobility theory) to the strategic management problems of doing business in the international arena. Cultural aspects of operating in an international environment. [3-0-0] Prerequisite: All of MGMT 230, MGMT 310. Third-year standing and 3 credits of ENGL.

Workshop In Person Learning Thu 12:30 p.m. - 2:00 p.m.

Political, legal, technological, competitive, and cultural issues that shape organizations as they operate worldwide. Understanding of the application of management theory (trade theory, modes of entry, foreign direct investment, factor mobility theory) to the strategic management problems of doing business in the international arena. Cultural aspects of operating in an international environment. [3-0-0] Prerequisite: All of MGMT 230, MGMT 310. Third-year standing and 3 credits of ENGL.

Workshop In Person Learning Thu 12:30 p.m. - 2:00 p.m.

Collegiate experience for a management education. Includes team-based work on a community service project, consulting project, or some other form of experiential or immersion-based learning effort. Explores connections among students’ disciplines and between their educational experience and issues in the off-campus community. [3-0-3] Prerequisite: All of MGMT 202, MGMT 220. Fourth-year standing.

Experiential In Person Learning Thu 2:00 p.m. - 5:00 p.m.

Methods to assess the efficiency of health-related programs; theoretical and practical empirical methods for conducting, analyzing, and interpreting applied economic evaluations in the context of health and healthcare. Credit will be granted for only one of MGMT 471, MGMT 571, SECH 400 or SECH 500. Equivalency: SECH 500

Lecture In Person Learning Thu 2:00 p.m. - 5:00 p.m.

Intensive language immersion class demonstrating, in and through practice, traditional Ndebele visual arts. The language of instruction is Ndebele. Restricted to students in the Bachelor of Ndebele Language fluency program. [3-0-4] Prerequisite: NLEK 331. Corequisite: NLEK 352.

Lecture Online Learning Arranged Arranged

Intensive language immersion class demonstrating, in and through practice, traditional Ndebele visual arts. The language of instruction is Ndebele. Restricted to students in the Bachelor of Ndebele Language fluency program. [3-0-4] Prerequisite: NLEK 331. Corequisite: NLEK 352.

Laboratory Online Learning Arranged Arranged

Emphasis on the language domains of literature and performing arts, and a diverse range of language learning skills that advance competency in conversational fluency, pronunciation, comprehension, vocabulary, oral traditions, literacy, grammatical understanding, and the cultural contextualization of language use in these domains. The language of instruction is Ndebele. Restricted to students in the Bachelor of Ndebele Language fluency program. [3-0-4] Prerequisite: NLEK 331. Corequisite: NLEK 332.

Lecture Online Learning Arranged Arranged

NLEK 452-101

In Person Learning
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLEK 352-01</td>
<td>Language Applications: Literature</td>
<td>3.00</td>
<td>L01 Online Learning</td>
<td>Project designed to provide students an interface language immersion experience on a specific topic or domain. Restricted to students in the Bachelor of Nle?kepmx Language Fluency program. Corequisite: INDG 499.</td>
</tr>
<tr>
<td>NLEK 430-01</td>
<td>Capstone: Language Immersion</td>
<td>1.00</td>
<td>W1 In Person Learning</td>
<td>Meaning of health and healing. Recognize diversity of beliefs, values, and perceptions of health. Introduction to the Canadian Health Care System, conceptual frameworks of health promotion, determinants of health, disease and injury prevention, and primary health care. [3-0-0] Prerequisite: First-year BSN-O Standing Corequisite: All of NRSG 112, NRSG 113. Lecture Online Learning Arranged Arranged</td>
</tr>
<tr>
<td>NRSG 111-001</td>
<td>Foundations of Health</td>
<td>0.01</td>
<td>W1 In Person Learning</td>
<td>Critical reflection of the Historical, political, and socioeconomic evolution of nursing. Exploration of foundational theories, nursing practice standards, ethical principles, ethical decision making, and reflective and scholarly writing that guides evidence-informed professional nursing practice. [1.5-0-0] Prerequisite: First-year BSN-O Standing Corequisite: All of NRSG 111, NRSG 113. Lecture In Person Learning Mon 2:00 p.m. - 5:00 p.m.</td>
</tr>
</tbody>
</table>
NRSG 201-L12 NRSG_D 201 L12 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Tue 10:00 a.m. - 1:00 p.m.

NRSG 201-L13 NRSG_D 201 L13 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Wed 10:00 a.m. - 1:00 p.m.

NRSG 201-L14 NRSG_D 201 L14 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Wed 10:00 a.m. - 1:00 p.m.

NRSG 201-L15 NRSG_D 201 L15 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Thu 10:00 a.m. - 1:00 p.m.

NRSG 201-L16 NRSG_D 201 L16 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Thu 10:00 a.m. - 1:00 p.m.

NRSG 201-L17 NRSG_D 201 L17 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Fri 10:00 a.m. - 1:00 p.m.

NRSG 201-L18 NRSG_D 201 L18 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Fri 10:00 a.m. - 1:00 p.m.

NRSG 201-L19 NRSG_D 201 L19 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Tue 10:00 a.m. - 1:00 p.m.

NRSG 201-L10 NRSG_D 201 L10 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Wed 10:00 a.m. - 1:00 p.m.

NRSG 201-L11 NRSG_D 201 L11 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Thu 10:00 a.m. - 1:00 p.m.

NRSG 201-L12 NRSG_D 201 L12 Nursing Lab Practice II W1 Develops evidence-informed nursing practice through seminar, laboratory, learning, and simulation. Students advance knowledge, skills, and abilities in preparation to practice nursing assessments and safe ethical care in acute care settings. Concepts will align with NRSG 216 intentional learning activities. (0-3-1.5) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 210, NRSG 211, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Fri 10:00 a.m. - 1:00 p.m.

NRSG 210-001 NRSG_D 210 001 Pharmacology for Nursing I W1 Principles of pharmacology, including pharmacokinetics and pharmacodynamics of major drug classes using prototype drugs. Develops knowledge and systematic approaches to safely and ethically administer drug therapy. (3.5-0-0) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 211, NRSG 226, NRSG 236, HINT 231. Lecture In Person Learning Tue 2:40 p.m. - 3:30 p.m.

NRSG 210-002 NRSG_D 210 002 Pharmacology for Nursing I W1 Principles of pharmacology, including pharmacokinetics and pharmacodynamics of major drug classes using prototype drugs. Develops knowledge and systematic approaches to safely and ethically administer drug therapy. (3.5-0-0) Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: All of NRSG 211, NRSG 226, NRSG 236, HINT 231. Lecture In Person Learning Wed 2:40 p.m. - 3:30 p.m.

NRSG 213-001 NRSG_D 213 001 Relational Practice III W1 Emphasis is on the unique experience of clients and their families in health and illness. Through exploration of relational theories and evidence-informed approaches, students explore strategies to deliver therapeutic, ethical, and holistic care. Pass/Fail. (1.5-0-0) Prerequisite: All of NRSG 101, NRSG 126, NRSG 136, NRSG 122, NRSG 123, NRSG 132, and Second-Year BSN-O Standing Corequisite: All of NRSG 211, NRSG 213, NRSG 226, NRSG 236, HINT 231. Lecture In Person Learning Wed 3:30 p.m. - 5:00 p.m.
Emphasis is on the unique experience of clients and their families in health and illness. Through exploration of relational theories and evidence-informed approaches, students explore strategies to deliver therapeutic, ethical, and holistic care. Pass/Fail: [1.5-0-0] Prerequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, and Second-Year BSN-O Standing Corequisite: All of NRSG 201.

**NRSG 226-001**
NRSG 226 - Health & Healing II
9:00 a.m. - 3:00 p.m.
Lecture
In Person Learning
Mon
9:30 a.m. - 11:00 a.m.

**NRSG 226-002**
NRSG 226 - Health & Healing II
9:00 a.m. - 3:00 p.m.
Lecture
In Person Learning
Mon
9:30 a.m. - 11:00 a.m.

**NRSG 229-001**
NRSG 229 - Community Health
9:00 a.m. - 3:00 p.m.
Lecture
In Person Learning
Mon
11:00 a.m. - 12:30 p.m.

**NRSG 236-P01**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Tue
9:30 a.m. - 3:00 p.m.

**NRSG 236-P02**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Tue
9:30 a.m. - 3:00 p.m.

**NRSG 236-P03**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Tue
9:30 a.m. - 3:00 p.m.

**NRSG 236-P04**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Tue
9:30 a.m. - 3:00 p.m.

**NRSG 236-P05**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Tue
9:30 a.m. - 3:00 p.m.

**NRSG 236-P06**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Wed
9:30 a.m. - 3:00 p.m.

**NRSG 236-P07**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Wed
9:30 a.m. - 3:00 p.m.

**NRSG 236-P08**
NRSG 236 - Nursing Practice II
9:00 a.m. - 3:00 p.m.
Experiential
In Person Learning
Wed
9:30 a.m. - 3:00 p.m.
This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.

This practicum in acute care settings develops beginning knowledge, skills, and abilities to provide safe ethical nursing care for adults with episodic and chronic health challenges. Intentional learning activities integrate evidence-informed knowledge from NRSG 201 and NRSG 226. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite: All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.
Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care within varied community settings with diverse populations. Students will draw on principles of social justice and the social determinants of health to engage in evidence-informed community assessments, health promotion/illness prevention activities, and health teaching. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Tue B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Tue B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Wed B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Thu B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Fri B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Tue B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Thu B-110 a.m. - 12:00 p.m.

Practicum in mental health provides opportunities to acquire knowledge, skills, and attitudes to promote wellness, through safe, ethical nursing care, in a variety of contexts. The focus will be presenting a mental well-being project to a specific target population. Other experiences will provide students an understanding of the mental health nursing process. Intentional learning activities integrate evidence-informed concepts from NRSG 229. Pass/Fail. [0-6-0] Prerequisite: All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 228. Experiential In Person Learning Fri B-110 a.m. - 12:00 p.m.
Nursing Practice in Mental Health Seminar 301
In Person Learning Fri 11:00 a.m. - 12:30 p.m.

In Person Learning Fri 8:00 a.m. - 12:00 p.m.

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NRSG_O 328-001  NRSG_O 328 001  Health of the Childbearing Family  W1
Nursing within a health promotion framework in both community and acute care settings. Evidence-informed guidelines for care of the childbearing family during pregnancy, labor, birth, and postpartum will be drawn on to inform assessment and management of holistic, ethical care. Concepts will align with NRSG 338 Intentional learning activities. Restricted to students in the Bachelor of Science in Nursing [3.0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOI 232. Corequisite: NRSG 306. Lecture  In Person Learning  Mon 8:00 a.m. - 11:00 a.m.

NRSG_O 328-002  NRSG_O 328 002  Health of the Childbearing Family  W1
Nursing within a health promotion framework in both community and acute care settings. Evidence-informed guidelines for care of the childbearing family during pregnancy, labor, birth, and postpartum will be drawn on to inform assessment and management of holistic, ethical care. Concepts will align with NRSG 338 Intentional learning activities. Restricted to students in the Bachelor of Science in Nursing [3.0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOI 232. Corequisite: NRSG 306. Lecture  In Person Learning  Mon 8:00 a.m. - 11:00 a.m.

NRSG_O 329-001  NRSG_O 329 001  Child Health  W1
Child health nursing within a health promotion framework in both community and acute care settings. Family-centered care and interprofessional collaboration will be examined with a focus on understanding the diversity and unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339 Intentional learning activities. Restricted to students in the Bachelor of Science in Nursing [3.0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOI 232. Corequisite: NRSG 339. Lecture  In Person Learning  Mon 8:00 a.m. - 11:00 a.m.

NRSG_O 329-002  NRSG_O 329 002  Child Health  W1
Child health nursing within a health promotion framework in both community and acute care settings. Family-centered care and interprofessional collaboration will be examined with a focus on understanding the diversity and unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339 Intentional learning activities. Restricted to students in the Bachelor of Science in Nursing [3.0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOI 232. Corequisite: NRSG 339. Lecture  In Person Learning  Mon 8:00 a.m. - 11:00 a.m.

NRSG_O 330-P01  NRSG_O 330  P01  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Tue Wed 7:00 p.m. - 3:00 p.m.

NRSG_O 330-P02  NRSG_O 330  P02  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Tue Wed 7:00 p.m. - 3:00 p.m.

NRSG_O 330-P03  NRSG_O 330  P03  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Tue Wed 7:00 p.m. - 3:00 p.m.

NRSG_O 330-P04  NRSG_O 330  P04  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Tue Wed 7:00 p.m. - 3:00 p.m.

NRSG_O 330-P05  NRSG_O 330  P05  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Tue Wed 7:00 p.m. - 3:00 p.m.

NRSG_O 330-P06  NRSG_O 330  P06  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Tue Wed 7:00 p.m. - 3:00 p.m.

NRSG_O 330-P07  NRSG_O 330  P07  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Thu Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 330-P08  NRSG_O 330  P08  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Thu Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 330-P09  NRSG_O 330  P09  Nursing Practice in Medical Settings  W1
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision making framework. Pass/Fail [0-16-0] Prerequisite: All of BIOL 131, BIOI 133, HINT 231, BIOI 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326. Experiential  In Person Learning  Thu Fri 7:00 a.m. - 3:00 p.m.
NRSG 336-P01  
NRSG 336-P11  
NRSG 336-P12  
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail. [0-16-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232, and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326.  
Experiential  
In Person Learning  
Thu Fri  
7:00 a.m. - 3:00 p.m.

NRSG 337-P01  
NRSG 337-P02  
NRSG 337-P03  
NRSG 337-P04  
NRSG 337-P05  
NRSG 337-P06  
NRSG 337-P07  
NRSG 337-P08  
NRSG 337-P09  
NRSG 337-P10  
NRSG 337-P11  
NRSG 337-P12  
This early immersion practicum develops advanced knowledge, skills, and abilities for evidence-informed patient care with adults experiencing episodic and chronic health challenges. Ethical dilemmas common to this area of practice will be explored within an ethical decision-making framework. Pass/Fail. [0-16-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232, and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326.  
In Person Learning  
Thu Fri  
7:00 a.m. - 3:00 p.m.
<p>| NRSG 318-P02 | Nursing Practice with Childbearing Families | P02 | W1 | Experimental | In Person Learning | Wed | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P03 | Nursing Practice with Childbearing Families | P03 | W1 | Experimental | In Person Learning | Thu | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P04 | Nursing Practice with Childbearing Families | P04 | W1 | Experimental | In Person Learning | Fri | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P05 | Nursing Practice with Childbearing Families | P05 | W1 | Experimental | In Person Learning | Tue | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P06 | Nursing Practice with Childbearing Families | P06 | W1 | Experimental | In Person Learning | Wed | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P07 | Nursing Practice with Childbearing Families | P07 | W1 | Experimental | In Person Learning | Thu | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P08 | Nursing Practice with Childbearing Families | P08 | W1 | Experimental | In Person Learning | Fri | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P09 | Nursing Practice with Childbearing Families | P09 | W1 | Experimental | In Person Learning | Tue | 7:00 a.m. - 3:00 p.m. |
| NRSG 318-P10 | Nursing Practice with Childbearing Families | P10 | W1 | Experimental | In Person Learning | Thu | 7:00 a.m. - 3:00 p.m. |
| NRSG 319-P01 | Nursing Practice in Child Health | P01 | W1 | Experimental | In Person Learning | Tue | 7:00 a.m. - 3:00 p.m. |
| NRSG 319-P02 | Nursing Practice in Child Health | P02 | W1 | Experimental | In Person Learning | Wed | 7:00 a.m. - 3:00 p.m. |
| NRSG 319-P03 | Nursing Practice in Child Health | P03 | W1 | Experimental | In Person Learning | Thu | 7:00 a.m. - 3:00 p.m. |
| NRSG 319-P04 | Nursing Practice in Child Health | P04 | W1 | Experimental | In Person Learning | Fri | 7:00 a.m. - 3:00 p.m. |
| NRSG 319-P05 | Nursing Practice in Child Health | P05 | W1 | Experimental | In Person Learning | Tue | 7:00 a.m. - 3:00 p.m. |</p>
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<th>Code</th>
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<td>NRSG 430-P06</td>
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<td>B_P06</td>
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<td>434</td>
<td>Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice in varied contexts*. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams in a variety of settings. Pass/Fail. *Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee.</td>
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*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. and recommendation of practice advising committee.
NRSG 438-B_P02 NRSG_D 438 B B_P02 Community Health Nursing Preceptorship W1
Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with individuals, families and populations in the community context. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail.
*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and recommendation of practice advising committee.
Experiential In Person Learning Arranged Arranged

NRSG 438-B_P03 NRSG_D 438 B B_P03 Community Health Nursing Preceptorship W1
Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with individuals, families and populations in the community context. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail.
*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and recommendation of practice advising committee.
Experiential In Person Learning Arranged Arranged

NRSG 438-B_P04 NRSG_D 438 B B_P04 Community Health Nursing Preceptorship W1
Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with individuals, families and populations in the community context. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail.
*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and recommendation of practice advising committee.
Experiential In Person Learning Arranged Arranged

NRSG 438-B_P05 NRSG_D 438 B B_P05 Community Health Nursing Preceptorship W1
Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with individuals, families and populations in the community context. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail.
*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and recommendation of practice advising committee.
Experiential In Person Learning Arranged Arranged

NRSG 438-B_P06 NRSG_D 438 B B_P06 Community Health Nursing Preceptorship W1
Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with individuals, families and populations in the community context. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams. Pass/Fail.
*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and recommendation of practice advising committee.
Experiential In Person Learning Arranged Arranged

NRSG 439-P01 NRSG_D 439 P01 Global Health Practicum W1
Advanced practicum provides opportunities to engage in an immersive global health experience in a variety of settings. Students will practice in collaboration with global health partners. The focus is on application of global health and cultural safety competencies. Pass/Fail. *Dependent on availability and cost of travel in addition to course tuition. Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and one of NRSG 429, HINF 429, and approval of application.
Experiential In Person Learning Arranged Arranged

NRSG 439-P02 NRSG_D 439 P02 Global Health Practicum W1
Advanced practicum provides opportunities to engage in an immersive global health experience in a variety of settings. Students will practice in collaboration with global health partners. The focus is on application of global health and cultural safety competencies. Pass/Fail. *Dependent on availability and cost of travel in addition to course tuition. Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and one of NRSG 429, HINF 429, and approval of application.
Experiential In Person Learning Arranged Arranged

NRSG 439-P13 NRSG_D 439 P13 Global Health Practicum W1
Advanced practicum provides opportunities to engage in an immersive global health experience in a variety of settings. Students will practice in collaboration with global health partners. The focus is on application of global health and cultural safety competencies. Pass/Fail. *Dependent on availability and cost of travel in addition to course tuition. Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432 and one of NRSG 429, HINF 429, and approval of application.
Experiential In Person Learning Arranged Arranged

NRSG 440-B_P01 NRSG_D 440 B B_P01 Research Preceptorship W1
Preceptored advanced practice course provides the opportunity to engage in research with a faculty supervisor. Application of knowledge, skills, and abilities in nursing and health-related research. Pass/Fail. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks] Prerequisite: successful of a faculty supervisor and research electives (3/2) as determined by faculty supervisor.
Experiential Experimental In Person Learning Arranged Arranged

NRSG 506-001 NRSG_D 506 001 Qualitative Research W1
Understanding the predominant approaches in qualitative research. Knowledge and skills in conducting qualitative research, including methodology, research design, data collection, data analysis, and communication of findings. [3-0-0] Corequisite: NRSG 504 or permission from the Graduate Program Coordinator, School of Nursing.
Lecture Online Learning Wed 11:00 a.m. - 12:00 p.m.

NRSG 522-001 NRSG_D 522 001 Introduction to Nursing Education W1
Exercises issues and trends in nursing education including implications for the teaching practices of nurse educators. [3-0-0] Corequisite: NRSG 524 or permission of the Graduate Program Coordinator, School of Nursing.
Lecture Online Learning Arranged Arranged

NRSG 542-001 NRSG_D 542 001 Introduction to Nursing Leadership and Manager W1
Exercises issues and trends in nursing leadership, including implications for management in the Canadian healthcare context. [3-0-0] Corequisite: NRSG 504 or permission of the Graduate Program Coordinator, School of Nursing.
Lecture Online Learning Arranged Arranged

NRSG 580-001 NRSG_D 580 001 Philosophy of Evidence in Nursing W1
Philosophical foundation upon which students can create informed claims about knowledge, theory and evidence regarding phenomena of concern to the discipline. This course is restricted to students in the PhD in Nursing program (PHD-O, NRS) unless permission is given by the program coordinator. Prerequisite: NRSG 550.
Lecture Online Learning Tue 10:00 a.m. - 12:00 p.m.

NRSG 588-001 NRSG_D 588 001 Scholarly Project W1-2 Pass/Fail
Independent Study Online Learning Arranged Arranged

NRSG 588-002 NRSG_D 588 002 Scholarly Project W1-2 Pass/Fail
Independent Study Online Learning Arranged Arranged

NRSG 599-101 NRSG_D 599 101 Research Thesis W1-2 Pass/Fail. Prerequisite: Restricted to students in the M.S.N. program or with permission from the M.S.N. coordinator.
Thesis Online Learning Arranged Arranged

NRSG 599-102 NRSG_D 599 102 Research Thesis W1-2 Pass/Fail. Prerequisite: Restricted to students in the M.S.N. program or with permission from the M.S.N. coordinator.
Thesis Online Learning Arranged Arranged

Seminar Online Learning Wed (Alternate weeks) 8:00 a.m. - 9:30 a.m.

NRSG 609-001 NRSG_D 609 001 Doctoral Dissertation W1-2 Pass/Fail.
Thesis Online Learning Arranged Arranged
Intensive language immersion class demonstrating, in and through practice, traditional Syilx visual arts. The language of instruction is Nsyilxcn. Restricted to students in the Bachelor of Nsyilxcn Language Fluency program. [3-0-0] Prerequisite: NSYL 351. Corequisite: NSYL 352.

Emphasis on the language domains of literature and performative arts, and a diverse range of language learning skills that advance competency in conversational fluency, pronunciation, comprehension, vocabulary, and traditions, literary, grammatical understanding, and the cultural contextualization of language use in these domains. The language of instruction is Nsyilxcn. Restricted to students in the Bachelor of Nsyilxcn Language Fluency program. [3-0-0] Prerequisite: NSYL 351. Corequisite: NSYL 352.

Ethical and professional issues facing those who work with computers. Piracy, hacking, responsibility, and liability for the use of software; cyberpornography and freedom of information; computerized invasion of privacy; computers in the workplace; the use of artificial intelligence; and expert systems. [3-0-0] Prerequisite: Third-year standing in an Arts program and 3 credits of PHI. Third-year standing in a Science program and 6 credits of PHI.

Ethical and professional issues facing those who work with computers. Pray, healing, responsibility, and liability for the use of software; cyberpornography and freedom of information; computerized invasion of privacy; computers in the workplace; the use of artificial intelligence; and expert systems. [3-0-0] Prerequisite: Third-year standing in an Arts program and 3 credits of PHI. Third-year standing in a Science program and 6 credits of PHI.

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Moral problems arising in the context of human relationships to nature and non-human living things, in terms of both general moral theory and policy formation. Moral standing, animal rights, obligations to future generations, pollution, hazardous materials, depletion of natural resources, treatment of non-human living things. [3-0-0] Prerequisite: 3 credits of PHI or 157 or 157A. Third-year standing.

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Mechanics primarily for students majoring in the physical sciences (e.g. physics, chemistry, mathematics, computer science, geology, physical geography) or engineering. Particle kinematics and dynamics, work and energy, momentum, gravitation, rigid body motion, fluid statics and dynamics with applications to the physical sciences. Credit will be granted for only one of PHYS 111 and PHYS 112. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XM2 tutorial section. (3-3*-1) Prerequisite: One of PHYS 11, PHYS 12 and one of MATH 12, PREC 12, MATH 125, MATH 126. Physics 12 is strongly recommended. Corequisite: One of MATH 100, MATH 116.

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<table>
<thead>
<tr>
<th>Code</th>
<th>Introductory Physics for the Physical Sciences I</th>
<th>Days</th>
<th>Time</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>PHYS_111-109</td>
<td>111</td>
<td>W1</td>
<td>9:00 a.m. - 12:00 p.m.</td>
<td>Laboratory in Person Learning Thu (Alternate weeks)</td>
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<td>Thu (Alternate weeks) 6:30 p.m. - 9:30 p.m.</td>
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<td>Thu (Alternate weeks) 12:30 p.m. - 3:30 p.m.</td>
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<td>Thu (Alternate weeks) 12:30 p.m. - 3:30 p.m.</td>
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<td>PHYS_111-113</td>
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<td>111</td>
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<td>Thu (Alternate weeks) 12:30 p.m. - 3:30 p.m.</td>
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<td>Thu (Alternate weeks) 6:30 p.m. - 9:30 p.m.</td>
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<td>Thu (Alternate weeks) 12:30 p.m. - 3:30 p.m.</td>
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<td>PHYS_111-116</td>
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<td>111</td>
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In Person Learning

PHYS 112-L07
PHYS_O
112
L07
Introductory Physics for the Life Sciences I
W1
Laboratory

PHYS 112-L08
PHYS_O
112
L08
Introductory Physics for the Life Sciences I
W1
Laboratory

PHYS 112-L09
PHYS_O
112
L09
Introductory Physics for the Life Sciences I
W1
Laboratory

PHYS 112-L10
PHYS_O
112
L10
Introductory Physics for the Life Sciences I
W1
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PHYS 112-L11
PHYS_O
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L11
Introductory Physics for the Life Sciences I
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PHYS 112-L12
PHYS_O
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L12
Introductory Physics for the Life Sciences I
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Laboratory

PHYS 112-L13
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Introductory Physics for the Life Sciences I
W1
Laboratory

PHYS 112-L14
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L14
Introductory Physics for the Life Sciences I
W1
Laboratory

PHYS 112-L15
PHYS_O
112
L15
Introductory Physics for the Life Sciences I
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Laboratory

PHYS 112-L16
PHYS_O
112
L16
Introductory Physics for the Life Sciences I
W1
Laboratory
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Laboratory  
In Person Learning  
Tue (Alternate weeks)  
6:30 p.m. - 9:30 p.m.

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Laboratory  
In Person Learning  
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2:30 p.m. - 5:30 p.m.

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Laboratory  
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<th>Schedule</th>
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<th>Room</th>
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<tr>
<td>PHYS 112-T12</td>
<td>Introductory Physics for the Life Sciences</td>
<td>1.5</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
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<td>Introductory Physics for the Life Sciences</td>
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<td>Introductory Physics for the Life Sciences</td>
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<td>PHYS 215-101</td>
<td>Thermodynamics</td>
<td>4</td>
<td>Mon Wed Fri</td>
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<td>PHYS 231-001</td>
<td>Introduction to Electronics</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
</tr>
<tr>
<td>PHYS 301-001</td>
<td>Electricity and Magnetism</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
</tr>
<tr>
<td>PHYS 301-002</td>
<td>Electricity and Magnetism</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
</tr>
<tr>
<td>PHYS 304-001</td>
<td>Introduction to Quantum Mechanics</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
</tr>
<tr>
<td>PHYS 324-001</td>
<td>Waves</td>
<td>3</td>
<td>Mon Wed Fri</td>
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<tr>
<td>PHYS 331-001</td>
<td>Experimental Physics I</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
</tr>
<tr>
<td>PHYS 331-101</td>
<td>Experimental Physics I</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
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</tr>
<tr>
<td>PHYS 402-101</td>
<td>Advanced Quantum Mechanics</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
</tr>
<tr>
<td>PHYS 402-001</td>
<td>Statistical Mechanics</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
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<tr>
<td>PHYS 448-A_001</td>
<td>Directed Studies in Physics</td>
<td>3</td>
<td>Mon Wed Fri</td>
<td>In Person Learning</td>
<td>W1</td>
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</tbody>
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**In Person Learning**

Mechanics primarily for students majoring in the life sciences (e.g. biochemistry, biology, microbiology, pharmacy, human kinetics, human geography or psychology). Particle kinematics and dynamics, work and energy, momentum, gravitation, rigid body motion, fluid statics and dynamics with applications to the biological sciences. Credit will be granted for only one of PHYS 111 and PHYS 112. Students with Physics 12 may opt out of the tutorial by self-enrolling in the XMN tutorial section. [3-1*-0] Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 100 is strongly recommended.

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The investigation of a specific topic in physics may be undertaken under the direction of a Physics department staff member. Prerequisite: Permission of the department head.

The credit value for this course will be determined in consultation with the student prior to the registration.

Independent Study

In Person Learning

Arranged

The investigation of a specific topic in physics may be undertaken under the direction of a Physics department staff member. Prerequisite: Permission of the department head.

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In Person Learning

Arranged

Introduction to the broad field of political science. Noteworthy issues from the subfields of political science will be addressed, including Canadian politics, global politics, comparative politics and political philosophy. [1.5-0-1.5]

Lecture

In Person Learning

Thu 9:30 a.m. - 11:00 a.m.

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Discussion

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Discussion

In Person Learning

Thu 9:30 a.m. - 11:00 a.m.
PSYO_111-001 PSYO_O 111 001 Introduction to Psychology: Basic Processes W1 Survey of topics in psychology which relate to basic processes. Methods and statistics, the nervous system and physiological processes, sensation and perception, learning, cognition and memory. [3-0-0] Prerequisite: All of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Wed Thu 12:30 p.m. - 2:00 p.m.

PSYO_111-002 PSYO_O 111 002 Introduction to Psychology: Basic Processes W1 Survey of topics in psychology which relate to basic processes. Methods and statistics, the nervous system and physiological processes, sensation and perception, learning, cognition and memory. [3-0-0] Prerequisite: All of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Wed Thu 9:30 a.m. - 11:00 a.m.

PSYO_111-003 PSYO_O 111 003 Introduction to Psychology: Basic Processes W1 Survey of topics in psychology which relate to basic processes. Methods and statistics, the nervous system and physiological processes, sensation and perception, learning, cognition and memory. [3-0-0] Lecture Online Learning Fri 6:30 p.m. - 9:30 p.m.

PSYO_111-004 PSYO_O 111 004 Introduction to Psychology: Basic Processes W1 Survey of topics in psychology which relate to basic processes. Methods and statistics, the nervous system and physiological processes, sensation and perception, learning, cognition and memory. [3-0-0] Lecture Online Learning Tue Thu 12:30 p.m. - 2:00 p.m.

PSYO_121-001 PSYO_O 121 001 Introduction to Psychology: Personal Functioning W1 Survey of topics in psychology which relate to personal functioning. Methods and statistics, motivation and emotion, life span development, social processes, personality, psychopathology, and psychotherapy. [3-0-0] Prerequisite: PSYO 111. Lecture Online Learning Thur 6:30 p.m. - 9:30 p.m.

PSYO_219-001 PSYO_O 219 001 Introduction to Cognition W1 A brief introduction to how the mind works from a cognitive perspective. Topics will be drawn from memory, decision making, reasoning, attention, object perception, and speech and language. [3-0-0] Prerequisite: All of PSYO 111, PSYO 112, or all of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Thu 5:00 p.m. - 6:30 p.m.

PSYO_220-101 PSYO_O 220 101 Lifespan Development W1 Introduction to the field of lifespan developmental psychology. Examination of the physical, cognitive, and psychosocial development of the individual from conception through later adulthood. [3-0-0] Prerequisite: All of PSYO 111, PSYO 112, or all of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Mon Wed 2:00 p.m. - 3:30 p.m.

PSYO_252-001 PSYO_O 252 001 Introduction to Social Psychology W1 Introduction to social psychology. Attitudes, opinions and beliefs, persuasion, mass communication, group processes, prejudice, interpersonal attraction, conformity, aggression, and conflict. [3-0-0] Prerequisite: All of PSYO 111, PSYO 112, or all of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Thur 11:00 a.m. - 1:00 p.m.

PSYO_270-001 PSYO_O 270 001 Introduction to Research Methods and Design W1 Introduction to the procedures and difficulties in the design and critical evaluation of research in experimental psychology. Various research designs and basic statistics. A required course for students majoring in Psychology. [3-0-0] Prerequisite: All of PSYO 111, PSYO 121, or all of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Mon Wed Fri 8:00 a.m. - 9:00 a.m.

PSYO_270-002 PSYO_O 270 002 Introduction to Research Methods and Design W1 Introduction to the procedures and difficulties in the design and critical evaluation of research in experimental psychology. Various research designs and basic statistics. A required course for students majoring in Psychology. [3-0-0] Prerequisite: All of PSYO 111, PSYO 121, or all of PSYC 101, PSYC 102, or PSYC 100. Lecture Online Learning Wed Fri 12:30 p.m. - 2:00 p.m.

PSYO_310-001 PSYO_O 310 001 Learning W1 A critical survey of the basic experimental findings and theory of the learning process with emphasis on the theoretical formulation of the necessary conditions for learning, retention, and transfer of training. [3-0-0] Prerequisite: Two of PSYO 219, PSYO 220, PSYO 230, PSYO 241, PSYO 251, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 6 credits of 200-level Psychology. Lecture Online Learning Tue Thu 11:00 a.m. - 12:30 p.m.

PSYO_313-001 PSYO_O 313 001 Visual Perception W1 Examines how our brain enables us to see. Topics will focus on visual processing involved in perceiving objects, colors, movement, and depth. [3-0-0] Lecture Online Learning Mon Wed Fri 3:00 p.m. - 4:00 p.m.
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<td>PSYO_032-001</td>
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<td>PSYO_056-001</td>
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Focuses primarily on the sensory aspect of touch. Topics include: tactile perception in historical perspective, sensory and physiological bases of touch, the psychophysiology of touch, thermal sensitivity, pain responsiveness, and the introduction of the haptic system and its components. [3-0-0] Prerequisite: Two of PSYO 219, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 6 credits of 200-level Psychology.

Experimental and theoretical approaches used by psychologists to investigate the interplay of internal and external factors involved in the creative process. [3-0-0] Prerequisite: Two of PSYO 219, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 6 credits of 200-level Psychology.

Survey of developmental psychology, focusing on the adolescent segment of the lifespan. It examines physical, cognitive, personality, and social aspects of adolescent development. [3-0-0] Prerequisite: PSYO 200 and one of PSYO 219, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 3 credits of 200-level Psychology.

Detailed introduction to general principles underlying scientific study of mental health and psychopathology. Critical theoretical and methodological issues related to the assessment, diagnosis, and treatment of psychological disorders. Psychological disorders used to illustrate general issues and principles discussed. [3-0-0] Prerequisite: Two of PSYO 219, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 6 credits of 200-level Psychology.

Critical survey of research and theory on relation between psychological factors (behaviour, emotion, cognition, personality, and interpersonal relationships) and health. Topics include: stress and health, coping with stress, social support, health behaviour (e.g., physical activity), and psychosocial aspects of chronic illness. [3-0-0] Prerequisite: Two of PSYO 219, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 6 credits of 200-level Psychology.

The psychology of happiness and well-being. Current research designs, techniques, empirical findings, and theories in positive psychology. Practical experience with some of the interventions and strategies used in positive psychology. [3-0-0] Prerequisite: Two of PSYO 219, PSYO 220, PSYO 230, PSYO 241, PSYO 252, PSYO 270, PSYO 271, PSYO 298, PSYO 299, or 6 credits of 200-level Psychology.

Academic overview of human sexuality from a biological, psychological, and behavioral perspective. Examination of the difficulties of research in the area of human sexuality, biological foundations of sexuality, human reproduction, birth control, and psychosocial development. [3-0-0] Prerequisite: All of PSYO 111, PSYO 121, and third-year standing or co-registration in PSYO 270.

The implications of theory and research in psychology for the criminal justice system. Topics include the definition and measurement of crime with a review of psychological and biosocial factors associated with selected criminal behaviour. [3-0-0] Prerequisite: All of PSYO 111, PSYO 121. And third-year standing or co-registration in PSYO 270.

Examination of sophisticated research designs and associated statistical methods. Direct research experience involving design, collection, and analysis of data in a formal research report; familiarity with use of computer programs to analyze research results. [3-0-0] Prerequisite: A score of 80% or higher in PSYO 270 and a score of 80% or higher in PSYO 271, and permission of the department head. Corequisite: Enrolment in a three-hour laboratory section is required.

Examination of sophisticated research designs and associated statistical methods. Direct research experience involving design, collection, and analysis of data in a formal research report; familiarity with use of computer programs to analyze research results. [3-0-0] Prerequisite: A score of 80% or higher in PSYO 270 and a score of 80% or higher in PSYO 271, and permission of the department head. Corequisite: Enrolment in a three-hour laboratory section is required.

Theoretical and applied issues fundamental to psychological counselling and other helping professions. Development of basic interviewing skills. [3-0-0] Prerequisite: Fourth-year standing. At least 6 credits of 300-level Psychology, including at least 3 credits from the Mental Health & Wellness breadth area. Students will be screened for entry into this course through a selection interview.

Major theories that comprise core areas of contemporary psychology: historical perspectives of schools of thought, social and institutional contexts, and evolution of the discipline. [3-0-0]

Detailed introduction to general principles underlying scientific study of mental health and psychopathology. Critical theoretical and methodological issues related to the assessment, diagnosis, and treatment of psychological disorders. Psychological disorders used to illustrate general issues and principles discussed. [3-0-0]

Introduction to psychotherapy, including historical and current models of therapy, as well as introducing the use of Cognitive Behavioural Therapy and motivational enhancement therapy. Restricted to the Graduate Psychological Assessment Program. [3-0-0]
Methods to assess the efficiency of health-related programs; theoretical and practical empirical methods for conducting, analyzing and interpreting applied economic evaluations in the context of health and healthcare. Credit will be granted for only one of MGMT 471, MGMT 571, SECH 400 or SECH 500. Prerequisite: Third-year standing. Equivalency: MGMT 471.

Methods to assess the efficiency of health-related programs; theoretical and practical empirical methods for conducting, analyzing and interpreting applied economic evaluations in the context of health and healthcare. Credit will be granted for only one of MGMT 471, MGMT 571, SECH 400 or SECH 500. Equivalency: MGMT 571.
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<td>Introduction to Sociology</td>
<td>Studies how society influences human behavior. How is society organized and structured? How does it affect the way we think and act? What is the relationship between individuals and society? What is our social nature? Why is there inequality in the world?</td>
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<td>SOCI 111-002</td>
<td>Introduction to Sociology</td>
<td>Studies how society influences human behavior. How is society organized and structured? How does it affect the way we think and act? What is the relationship between individuals and society? What is our social nature? Why is there inequality in the world?</td>
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<tr>
<td>SOCI 209-001</td>
<td>Foundations of Sociological Thought</td>
<td>Foundational ideas in the historical development of sociological thought. Ways in which these ideas have influenced new generations of sociologists.</td>
</tr>
<tr>
<td>SOCI 212-001</td>
<td>Sociology of Race and Ethnicity</td>
<td>Key concepts and theoretical ideas of race and ethnicity: how race and ethnicity shape power, cultural expressions, identities, and resistance movements.</td>
</tr>
<tr>
<td>SOCI 228-001</td>
<td>Sociology of the Anthropocene</td>
<td>Examination of the Anthropocene at the intersections of the environment, colonialism, racialization, gender, and species. Explores the drivers of the Anthropocene, the politics of naming and dating an epoch after humans, as well as environmental justice and Anthropocene futures. Credit will only be granted for one of SOCI 228 or SOCI 296E.</td>
</tr>
<tr>
<td>SOCI 249-001</td>
<td>Crime and Society</td>
<td>Introduction to crime as a social phenomenon. Changing definitions of crime in relation to social and political change, scope and nature of crime, criminalization; growth of criminology; institutional responses to criminal behaviour by the justice system.</td>
</tr>
<tr>
<td>SOCI 291-001</td>
<td>Fundamentals of Sociological Research</td>
<td>Overview of quantitative and qualitative research designs and methodologies. Topics include sampling, operationalization, ethics, data collection and analysis, scientific, and sociological theory. Credit will be granted for only one of SOCI 291 or SOCI 271.</td>
</tr>
<tr>
<td>SOCI 308-101</td>
<td>Violence in Intimate Relations</td>
<td>Social, historical, cultural, and political roots of violence in intimate relations. Primary focus on women, children and the elderly.</td>
</tr>
<tr>
<td>SOCI 374-001</td>
<td>Sexuality, Law, and Society</td>
<td>Examination of how sex and sexuality are regulated through law. Topics may include the social and legal regulation of family forms, pornography, sex work, sexually transmitted infections, sexual violence, and the interplay of technology and law through topics such as online dating.</td>
</tr>
<tr>
<td>SOCI 376-001</td>
<td>Classical Sociological Theory</td>
<td>Classical sociological theories and their relationship to methodological issues. Emphasis on the procedures by which sociological explanations are made. Credit will be granted for only one of SOCI 376 or SOCI 375.</td>
</tr>
<tr>
<td>SOCI 395-201</td>
<td>Sociological Methods: Qualitative Research</td>
<td>Examination of methods such as ethnography, interviewing, historical and discourse analysis, theoretical, epistemological, and ethical issues in social research and methods.</td>
</tr>
<tr>
<td>SOCI 421-001</td>
<td>Sociology of Fear</td>
<td>The role of fear in the production, control, and management of individuals and societies.</td>
</tr>
<tr>
<td>SOCI 432-101</td>
<td>Sociology of Food</td>
<td>How does food shape social relations (class, gender, race, age)? What is its role in the construction of meaning and identity? How does it connect to the political through civil society and social movements? How is it impacted by globalization? Credit will only be granted for one of SOCI 432 or SOCI 496 when on the same topic.</td>
</tr>
<tr>
<td>SOCI 456-001</td>
<td>Sociology of Elite</td>
<td>Examines theoretical and empirical studies of elites - who they are; what role they play in society; how they operate. Reviews research counting the prominence of elites in economic, social and political life. Focuses primarily on Canada. Credit will only be granted for one of SOCI 456 or SOCI 496 when on the same topic.</td>
</tr>
<tr>
<td>SOCI 492-001</td>
<td>Surveillance and Society</td>
<td>Surveillance as a social phenomenon, involving differences in power and visibility. How surveillance is related to governance, control, and privacy. Theories and concepts from the interdisciplinary field of surveillance studies, with an emphasis on social relationships. Credit will be granted for only one of SOCI 492 or SOCI 496.</td>
</tr>
<tr>
<td>SOCI 511-001</td>
<td>Introduction to Social Work</td>
<td>An introduction to social work with emphasis on ethical decision making and preparation for professional practice. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
<tr>
<td>SOCI 511-002</td>
<td>Introduction to Social Work</td>
<td>An introduction to social work with emphasis on ethical decision making and preparation for professional practice. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
<tr>
<td>SOCI 512-001</td>
<td>Theories and Interventions for Clinical Social Work</td>
<td>Advances students’ understanding of major theoretical frameworks and treatment modalities for clinical and direct social work practice and their relevance to and application within the planned change process. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
<tr>
<td>SOCI 512-002</td>
<td>Theories and Interventions for Clinical Social Work</td>
<td>Advances students’ understanding of major theoretical frameworks and treatment modalities for clinical and direct social work practice and their relevance to and application within the planned change process. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
<tr>
<td>SOCI 514-001</td>
<td>Diversity and Critical Reflexive Practice</td>
<td>Meanings, dynamics, and impacts of diversity in social work practice. Students examine their own identities and social locations and a range of theories and orientations to inclusion and social justice. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
<tr>
<td>SOCI 514-002</td>
<td>Diversity and Critical Reflexive Practice</td>
<td>Meanings, dynamics, and impacts of diversity in social work practice. Students examine their own identities and social locations and a range of theories and orientations to inclusion and social justice. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
<tr>
<td>SOCI 517-001</td>
<td>Social Work and Indigenous Peoples in Canada</td>
<td>Overview of historical and current issues confronting social work with First Nations, Métis, and Inuit individuals, families, and communities within Canada including but not limited to child protection; critical assessment of theories for social work practice with Canada’s Indigenous peoples. Prerequisite: Restricted to students in the M.S.W. program.</td>
</tr>
</tbody>
</table>
SOCW 517-002  SOCW 517 002 Social Work and Indigenous Peoples in Canada W1 Overview of historical and current issues confronting social work with First Nations, Mts, and Inuit individuals, families, and communities within Canada including but not limited to child protection; critical assessment of theories for social work practice with Canada's Indigenous peoples. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Wed 2:00 p.m. - 5:00 p.m.

SOCW 517-003  SOCW 517 003 Social Work and Indigenous Peoples in Canada W1 Overview of historical and current issues confronting social work with First Nations, Mts, and Inuit individuals, families, and communities within Canada including but not limited to child protection; critical assessment of theories for social work practice with Canada's Indigenous peoples. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Thu 11:00 a.m. - 2:00 p.m.

SOCW 519-003  SOCW 519 P03 Social Work Field Education I W1-2 Development, application, and integration of core social work knowledge and skills in social work practice settings. Pass/Fail. Prerequisite: Restricted to students in the M.S.W. program. Experiential In Person Learning Arranged Arranged

SOCW 551-001  SOCW 551 001 Advanced Clinical Social Work Theory and Practice W1 Integrates theory and practice with attention to relational principles and a complex analysis of personal and social problems. Consideration of the dynamic interaction between the individual and the social world, and the possibility of intervention at multiple levels. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Mon 2:00 p.m. - 5:00 p.m.

SOCW 551-002  SOCW 551 002 Advanced Clinical Social Work Theory and Practice W1 Integrates theory and practice with attention to relational principles and a complex analysis of personal and social problems. Consideration of the dynamic interaction between the individual and the social world, and the possibility of intervention at multiple levels. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.

SOCW 551-003  SOCW 551 003 Advanced Clinical Social Work Theory and Practice W1 Integrates theory and practice with attention to relational principles and a complex analysis of personal and social problems. Consideration of the dynamic interaction between the individual and the social world, and the possibility of intervention at multiple levels. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Thu 5:00 p.m. - 8:00 p.m.

SOCW 553-002  SOCW 553 002 Research Knowledge and Evidence in Clinical Soc W1 Knowledge and skills for utilizing empirical evidence to guide clinical social work practice. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.

SOCW 553-003  SOCW 553 003 Research Knowledge and Evidence in Clinical Soc W1 Knowledge and skills for utilizing empirical evidence to guide clinical social work practice. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Wed 5:00 p.m. - 8:00 p.m.

SOCW 554-001  SOCW 554 001 Mental Health and Mental Illness W1 Explores relevant mental health issues to social work practice in a broad range of settings. Critically examines social work's role in providing effective, evidence-based, theoretically sound interventions and treatments. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person Learning Mon 5:00 p.m. - 8:00 p.m.

SOCW 554-002  SOCW 554 002 Mental Health and Mental Illness W1 Explores relevant mental health issues to social work practice in a broad range of settings. Critically examines social work's role in providing effective, evidence-based, theoretically sound interventions and treatments. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person LearningWed 11:00 a.m. - 2:00 p.m.

SOCW 554-005  SOCW 554 005 Mental Health and Mental Illness W1 Explores relevant mental health issues to social work practice in a broad range of settings. Critically examines social work's role in providing effective, evidence-based, theoretically sound interventions and treatments. Prerequisite: Restricted to students in the M.S.W. program. Lecture In Person LearningThu 2:00 p.m. - 5:00 p.m.

SOCW 559-003  SOCW 559 P03 Social Work Field Education II W1-2 A scholarly paper in an area of interest that conforms to the demands of a peer-reviewed social work journal. Pass/Fail. Prerequisite: Restricted to students in the M.S.W. program. Independent Study In Person Learning Arranged Arranged

SOCW 568-001  SOCW 568 W1 Graduating Paper W1-2 A scholarly paper in an area of interest that conforms to the demands of a peer-reviewed social work journal. Pass/Fail. In Person Learning Arranged Arranged

SOCW 598-001  SOCW 598 001 Thesis W1-2 An independent research or scholarly project which aims to develop knowledge and practice implications for clinical social work practice. Pass/Fail. Thesis In Person Learning Arranged Arranged

SOCW 599-002  SOCW 599 002 Thesis W1-2 An independent research or scholarly project which aims to develop knowledge and practice implications for clinical social work practice. Pass/Fail. Thesis In Person Learning Arranged Arranged

SPAN 301-001  SPAN 301 001 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.

SPAN 301-002  SPAN 301 002 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

SPAN 301-003  SPAN 301 003 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 9:00 a.m. - 10:00 a.m.

SPAN 301-004  SPAN 301 004 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

SPAN 301-005  SPAN 301 005 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 4:00 p.m. - 5:00 p.m.

SPAN 301-006  SPAN 301 006 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.

SPAN 301-007  SPAN 301 007 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 3:00 p.m. - 4:00 p.m.

SPAN 301-008  SPAN 301 008 Beginners' Spanish I W1 Development of listening, speaking, reading, and writing in Spanish. Corresponds to the first half of level A1 of the Common European Framework of Reference for Languages (CEFR). Lecture In Person Learning Mon Wed Fri 9:00 a.m. - 10:00 a.m.

SPAN 301-009  SPAN 301 009 Advanced Beginners' Spanish I W1 Grammar, introduction to composition, oral practice, and reading. Corresponds to the first half of level A2 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: Either: (a) a score of 70% or higher in Spanish 12, or (b) SPAN 102. Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.

SPAN 301-010  SPAN 301 010 Advanced Beginners' Spanish I W1 Grammar, introduction to composition, oral practice, and reading. Corresponds to the first half of level A2 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: Either: (a) a score of 70% or higher in Spanish 12, or (b) SPAN 102. Lecture In Person Learning Mon Wed Fri 10:00 a.m. - 11:00 a.m.
**SPAN 201-001** | **SPAN 201** | 001 | **Advanced Beginners’ Spanish I** | W1 | Lecture | In Person Learning | Mon Wed | 11:00 a.m. - 12:00 p.m.

**SPAN 203-001** | **SPAN 203** | 001 | **Intermediate Spanish I** | W1 | Lecture | In Person Learning | Mon Wed | 11:00 a.m. - 12:00 p.m.

**SPAN 303-001** | **SPAN 303** | 001 | **Conversational Spanish** | W1 | Lecture | In Person Learning | Tue Thu | 9:30 a.m. - 11:00 a.m.

**STAT 205-001** | **STAT 205** | 001 | **Introduction to Probability** | W1 | Lecture | In Person Learning | Wed Fri | 11:00 a.m. - 12:30 p.m.

**STAT 230-001** | **STAT 230** | 001 | **Introductory Statistics** | W1 | Lecture | In Person Learning | Mon Wed | 2:00 p.m. - 3:30 p.m.

**STAT 303-001** | **STAT 303** | 001 | **Intermediate Probability** | W1 | Lecture | In Person Learning | Mon Wed | 12:30 p.m. - 2:00 p.m.

**STAT 400-001** | **STAT 400** | 001 | **Statistical Communication and Consulting** | W1 | Lecture | In Person Learning | Tue Thu | 9:30 a.m. - 11:00 a.m.

**STAT 406-001** | **STAT 406** | 001 | **Environmetrics** | W1 | Lecture | In Person Learning | Tue Thu | 9:30 a.m. - 11:00 a.m.

**STAT 547-I-001** | **STAT 547-I** | I | **Topics in Statistics** | I | Lecture | In Person Learning | Mon Wed | 9:30 a.m. - 11:00 a.m.

**STMC 433** | **STMC 433** | 001 | **Special Topics in Language Practice and Pedagogy** | W1 | Lecture | Online Learning | Arranged | Arranged

**SUST 100-001** | **SUST 100** | 001 | **Sustainability: People, Place, and Process** | W1 | Lecture | In Person Learning | Mon Wed | 11:00 a.m. - 12:30 p.m.

**SUST 104-101** | **SUST 104** | 101 | **Introduction to Environmental Humanities** | W1 | Lecture | In Person Learning | Tue Thu | 3:30 p.m. - 5:00 p.m.

**SUST 104-001** | **SUST 104** | 001 | **Introduction to Environmental Humanities** | W1 | Discussion | In Person Learning | Arranged | Arranged

**SUST 200-001** | **SUST 200** | 001 | **Application, Practice and Management Approach** | W1 | Lecture | In Person Learning | Mon Wed | 5:30 p.m. - 6:30 p.m.

**SUST 201-001** | **SUST 201** | 001 | **Introduction to Research in Sustainability and Geo** | W1 | Lecture | In Person Learning | Mon | 12:00 p.m. - 2:00 p.m.

**SUST 201-001** | **SUST 201** | 001 | **Introduction to Research in Sustainability and Geo** | W1 | Discussion | In Person Learning | Fri | 10:00 a.m. - 11:00 a.m.
**Community Service Learning**

**SUST 101-002**
**W1 001**
**Community Service Learning**

Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Develops research skills from problem definition through to design and execution of research projects, including how to identify and analyze scholar articles, identify research questions, and, collect, analyze, and present data and research findings. Credit will be granted for only one of SUST 205, GEOG 201, or GEOG 373. [3-0-0] Equivalency: GEOG 201

Discussion
In Person Learning
Wed
12:00 p.m. - 1:00 p.m.

**SUST 102**
**W1 001**
**Community Service Learning**

Apply sustainability learning and knowledge to the broader community by preparing to undertake a project with a community partner. Skills development for work with community and other organizations, communication styles, managing workplace challenges. Restricted to students in the Bachelor of Sustainability program. [0-0-3]

Discussion
In Person Learning
Tue (Alternate weeks)
12:00 p.m. - 2:00 p.m.

**SUST 102-001**
**W1 001**
**Community Service Learning**

Apply sustainability learning and knowledge to the broader community through a self-directed project involving at least 30 hours of community service. Development of personal sustainability goals. Restricted to students in the Bachelor of Sustainability program. [0-1-0] Equivalency: SUST 205

Discussion
In Person Learning
Arranged
Arranged

**SUST 201-001**
**W1 004**
**Place-based Methods for Interdisciplinary Research**

A practice-led methods course that draws on interdisciplinary sustainability literatures on place. Includes a focus on ethics, values, social equity, accessibility and inclusion in addressing multi-scale, multi-stakeholder problems related to sustainability. Restricted to students in the Bachelor of Sustainability program. [3-0-0] Equivalency: SUST 200

Lecture
In Person Learning
Mon
8:00 a.m. - 9:30 a.m.

**THTR 101-001**
**W1 003**
**Performance Improvisation**

An introduction to acting techniques pertaining to the style of psychological realism for stage and screen. Credit will be granted for only one of THTR 101 or FILM 101. [3 hours/week studio] Equivalency: FILM 101

Studio
In Person Learning
Tue
12:00 p.m. - 1:00 p.m.

**THTR 102-001**
**W1 001**
**Acting for Stage and Screen**

Verbal and nonverbal communication skills as well as knowledge of basic communication technologies. Well-suited to students who wish to build skill and confidence in public presentation.

Studio
In Person Learning
Mon
11:00 a.m. - 2:00 p.m.

**THTR 103-001**
**W1 004**
**Performance Art: Global Perspectives**

Equivalency: CULT 309, WRLD 309. Prerequisite: Third-year standing.

Lecture
In Person Learning
Arranged
Arranged

**THTR 104-001**
**W1 004**
**The Art of Public Speaking**

Pass/Fail.

Studio
In Person Learning
Wed
1:00 p.m. - 5:00 p.m.

**THTR 180-001**
**W1 001**
**Theatre Appreciation: The Power of Live Performance**

Pass/Fail.

Studio
In Person Learning
Fri
2:00 p.m. - 5:00 p.m.

**THTR 303-001**
**W1 008**
**Narative Film Production**

The theory and practice of producing a short narrative motion picture for the purpose of developing narrative film library. Credit will be granted for only one of THTR 303, CULT 315, FILM 303 or FILM 201. [3-0-0] Equivalency: FILM 303

Lecture
In Person Learning
Arranged
Arranged

**THTR 309-001**
**W1 001**
**Performance Art: Global Perspectives**

Develops students' competence in using the tools in the woodshop and metalshop through demonstrations and the completion of a small project. This non-credit course is required in order to work in these facilities.

Lecture
In Person Learning
Mon
9:00 a.m. - 1:00 p.m.

**THTR 411-001**
**W1 001**
**Performance Studies**

Seminar in the interdisciplinary field of performance studies, broadly conceived as the investigation of aesthetic, ritual, and everyday life performance practices. Credit will be granted for only one of THTR 411, CULT 411, or WRLD 411. [3-0-0] Equivalency: CULT 411, WRLD 411

Lecture
In Person Learning
Arranged
Arranged

**VISA 090-001**
**W1 001**
**Safety Training**

Develops students' competence in using the tools in the woodshop and metalshop through demonstrations and the completion of a small project. This non-credit course is required in order to work in these facilities.

Pass/Fail.

Lecture
In Person Learning
Mon
1:00 p.m. - 5:00 p.m.

**VISA 090-002**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Wed
9:00 a.m. - 1:00 p.m.

**VISA 090-003**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Fri
1:00 p.m. - 5:00 p.m.

**VISA 090-004**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Mon (Alternate weeks)
9:00 a.m. - 1:00 p.m.

**VISA 090-005**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Wed
9:00 a.m. - 1:00 p.m.

**VISA 090-006**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Fri
9:00 a.m. - 1:00 p.m.

**VISA 090-007**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Mon
9:00 a.m. - 1:00 p.m.

**VISA 090-008**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Wed
9:00 a.m. - 1:00 p.m.

**VISA 090-009**
**W1 001**
**Safety Training**

Pass/Fail.

Lecture
In Person Learning
Thu
9:00 a.m. - 1:00 p.m.

**VISA 101-001**
**W1 001**
**Drawing and Two-Dimensional Art Practices I**

This foundation course will introduce the principles, practices, and concepts central to drawing and two-dimensional art. [2-2-0]

Studio
In Person Learning
Wed
2:00 p.m. - 6:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISA 103-003</td>
<td>Drawing and Two-Dimensional Art Practices I</td>
<td>0.08</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Tue 1:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>VISA 104-001</td>
<td>Three-Dimensional Art Practices I</td>
<td>0.02</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Wed 9:10 a.m. - 1:00 p.m.</td>
</tr>
<tr>
<td>VISA 104-002</td>
<td>Three-Dimensional Art Practices I</td>
<td>0.02</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Fri 9:10 a.m. - 1:00 p.m.</td>
</tr>
<tr>
<td>VISA 106-001</td>
<td>Introduction to Digital Media I</td>
<td>0.01</td>
<td></td>
<td>Laboratory</td>
<td>In Person Learning Wed 1:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>VISA 106-002</td>
<td>Introduction to Digital Media I</td>
<td>0.01</td>
<td></td>
<td>Laboratory</td>
<td>In Person Learning Fri 9:00 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>VISA 106-003</td>
<td>Introduction to Digital Media I</td>
<td>0.01</td>
<td></td>
<td>Laboratory</td>
<td>In Person Learning Fri 2:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>VISA 106-004</td>
<td>Introduction to Digital Media I</td>
<td>0.01</td>
<td></td>
<td>Laboratory</td>
<td>In Person Learning Wed 2:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>VISA 106-005</td>
<td>Introduction to Digital Media I</td>
<td>0.01</td>
<td></td>
<td>Laboratory</td>
<td>In Person Learning Thu 5:00 p.m. - 8:00 p.m.</td>
</tr>
<tr>
<td>VISA 106-006</td>
<td>Introduction to Digital Media I</td>
<td>0.01</td>
<td></td>
<td>Laboratory</td>
<td>In Person Learning Mon 2:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>VISA 137-001</td>
<td>Introduction to Art I</td>
<td>0.01</td>
<td></td>
<td>Lecture</td>
<td>Online Learning Tue 11:00 a.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>VISA 215-001</td>
<td>Painting I</td>
<td>0.02</td>
<td>VISA 103</td>
<td>Studio</td>
<td>In Person Learning Tue 9:00 a.m. - 1:00 p.m.</td>
</tr>
<tr>
<td>VISA 215-002</td>
<td>Painting I</td>
<td>0.02</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Fri 9:00 a.m. - 1:00 p.m.</td>
</tr>
<tr>
<td>VISA 233-001</td>
<td>Printmaking: Screenprinting I</td>
<td>0.01</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Thu 2:00 p.m. - 6:00 p.m.</td>
</tr>
<tr>
<td>VISA 235-001</td>
<td>Sculpture I</td>
<td>0.01</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Tue 1:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>VISA 244-001</td>
<td>Photography I</td>
<td>0.01</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Thu 2:00 p.m. - 6:00 p.m.</td>
</tr>
<tr>
<td>VISA 255-001</td>
<td>Introduction to Printmaking: Linocut and Letterpress Printing</td>
<td>0.01</td>
<td></td>
<td>Studio</td>
<td>In Person Learning Fri 9:00 a.m. - 1:00 p.m.</td>
</tr>
<tr>
<td>VISA 261-001</td>
<td>Video I</td>
<td>0.01</td>
<td>VISA 103</td>
<td>Studio</td>
<td>In Person Learning Wed 8:00 a.m. - 12:00 p.m</td>
</tr>
<tr>
<td>VISA 268-001</td>
<td>Strategies in Digital Art: Visual Communication</td>
<td>0.02</td>
<td>VISA 108</td>
<td>Studio</td>
<td>In Person Learning Mon 8:00 a.m. - 12:00 p.m</td>
</tr>
<tr>
<td>VISA 268-002</td>
<td>Strategies in Digital Art: Visual Communication</td>
<td>0.02</td>
<td>VISA 108</td>
<td>Studio</td>
<td>In Person Learning Thu 8:00 a.m. - 12:00 p.m</td>
</tr>
<tr>
<td>VISA 283-001</td>
<td>Drawing III</td>
<td>0.01</td>
<td>VISA 108</td>
<td>Studio</td>
<td>In Person Learning Thu 8:00 a.m. - 12:00 p.m</td>
</tr>
<tr>
<td>VISA 300-W-01</td>
<td>Advanced Practice in Drawing</td>
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<td>VISA 108</td>
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<td>In Person Learning Fri 2:00 p.m. - 6:00 p.m.</td>
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<td>VISA 312-A-001</td>
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