
Course Section: ANTH_O 400-011
Course Title: Introduction to Cultural Anthropology
In Person Learning
Mon Wed
5:30 p.m. - 7:00 p.m.
Prerequisite: Second-year standing.

- Online Learning Thu 4:00 p.m. - 6:00 p.m.
- Discussion Thu 6:00 p.m. - 8:00 p.m.

Cross-cultural exploration of grammar focusing on the structure of words, organization of words into phrases and sentences, coding of meaning in grammar, methods used in grammatical analysis, and history of grammatical theory. [3-0-2] Prerequisite: ANTH 100. Third-year standing.

- Online Learning Mon Wed Thu Fri 9:00 a.m. - 11:00 a.m.
- In Person Learning Thu 11:00 a.m. - 12:30 p.m.

An examination and critique of the social and cultural foundations of development, as both discourse and practice, and the close relationship of development aid and ideologies with contemporary forms of global capitalism. [3-0-0] Prerequisite: ANTH 100. Third-year standing.

- Online Learning Mon Wed Thu Fri 9:00 a.m. - 11:00 a.m.
- In Person Learning Thu 9:30 a.m. - 11:00 a.m.

The contemporary global art scene with an emphasis on strategies for understanding the complexity of art production from 1985 to the present. Credit will be granted for only one of ARTH 103 or ARTH 102. [3-0-0]

- Lecture Online Learning Thu 9:30 a.m. - 11:00 a.m.
- Online Learning Fri 2:00 p.m. - 5:00 p.m.

Prerequisite: All of APSC 173, APSC 180, APSC 259.

- Online Learning Thu 11:00 a.m. - 12:30 p.m.
- In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.
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.

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.

Survey of contemporary anthropological thinking about how the construction of history and tradition shapes present cultural practices. Critical look at history-making by social scientists and by people themselves. [3-0-3] Prerequisite: ANTH 100; 6 credits of ANTH at the 200-level or beyond; and third-year standing.

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.

A critical examination of selected topics in the field of tourism, migration and mobility studies drawing on contemporary ethnography and current issues. [3-0-2] Prerequisite: ANTH 100 and third-year standing. ANTH 218 is recommended.

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 dipole and polarization; magnetostatics fields; magnetic dipoles and magnetization; boundary conditions; electromagnetic induction; Maxwell's equations. Credit will be granted for only one of APSC 279 or ENGR 365. [3-0-1] Prerequisite: All of APSC 172, APSC 248.

Intensive examination of selected topics in anthropology. Consult the department for this year's offerings and prerequisites. [3-0-0] Prerequisite: ANTH 100. 6 credits of ANTH at the 300 or 400 level; and third-year standing.

Surveys contemporary anthropological thinking about how the construction of history and tradition shapes present cultural practices. Critical look at history-making by social scientists and by people themselves. [3-0-3] Prerequisite: ANTH 100; 6 credits of ANTH at the 200-level or beyond; and third-year standing.

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.

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.

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<td>Formal co-op assignments required.</td>
<td>Restricted to students meeting the requirements of the Faculty of Applied Science and the Co-operative Education Program. Prerequisite: APSC 107. and 30 credits M.Eng. coursework. Pass/Fail.</td>
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<td>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.</td>
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**Course Descriptions**

- **APSC_O 171-201**: Engineering Drawing and CAD/CAM
  - Time: W2

- **APSC_O 173-201**: Engineering Analysis II
  - Time: W2

- **APSC_O 177-201**: Engineering Computation and Instrumentation
  - Time: W2
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] Prerequisite: All of APSC 180, APSC 181, APSC 248. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

APSC 255-102 APSC 201 Electric Circuits and Power

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178. Lecture In Person Learning Tue Thu 6:30 p.m. - 8:00 p.m.

APSC 211-102 APSC 202 Engineering Drawing and CAD/CAM

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.

APSC 218-201 APSC 201 Electricity, Magnetism, and Waves

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.

APSC 218-202 APSC 201 Dynamics

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.

APSC 218-202 APSC 202 Dynamics

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178. Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

APSC 219-201 APSC 101 Electric Circuits and Power

AC power systems. [3-2*-1] Prerequisite: APSC 178. Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

APSC 220-201 APSC 201 Mechanics of Materials I

Concepts of stress and strain. Axial, shear forces and bending moment diagrams for statically determinate structures, tension in shafts. Axial and shear stresses and deformations. Transformation of plane stress, Mohr's circle. [3.0-1] Prerequisite: APSC 178. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

APSC 221-11A APSC 21A Engineering Drawing and CAD/CAM

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.

APSC 221-11B APSC 21B Engineering Drawing and CAD/CAM

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.

APSC 221-11C APSC 21C Engineering Drawing and CAD/CAM

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.

APSC 221-11D APSC 21D Engineering Drawing and CAD/CAM

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.

APSC 221-11E APSC 21E Engineering Drawing and CAD/CAM

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.

APSC 221-11F APSC 21F Engineering Drawing and CAD/CAM

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.

APSC 221-11G APSC 21G Engineering Drawing and CAD/CAM

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.

APSC 221-11H APSC 21H Engineering Drawing and CAD/CAM

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.

APSC 221-11I APSC 21I Engineering Drawing and CAD/CAM

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.

APSC 221-11J APSC 21J Engineering Drawing and CAD/CAM

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.

APSC 221-11K APSC 21K Engineering Drawing and CAD/CAM

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.

APSC 221-11L APSC 21L Engineering Drawing and CAD/CAM

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.

APSC 222-11A APSC 22A Engineering Computation and Instrumentation

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 Tue (Alternate weeks) 10:00 a.m. - 12:00 p.m.

APSC 222-11B APSC 22B Engineering Computation and Instrumentation

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 Tue (Alternate weeks) 10:00 a.m. - 12:00 p.m.

APSC 222-11C APSC 22C Engineering Computation and Instrumentation

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 Thu (Alternate weeks) 12:00 p.m. - 2:00 p.m.
<table>
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<tr>
<th>Course</th>
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<td>APSC 177-L1D</td>
<td>APSC_O</td>
<td>L1D</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>APSC 177-L1E</td>
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<td>APSC 177-L1F</td>
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<tr>
<td>APSC 177-L1G</td>
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<td>L1G</td>
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<td>Laboratory</td>
<td>In Person Learning Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>APSC 177-L1H</td>
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<td>APSC 177-L1J</td>
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<tr>
<td>APSC 177-L1K</td>
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<td>APSC 177-L1L</td>
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<td>Laboratory</td>
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<td>APSC 172-201</td>
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<td>201</td>
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<td>Lecture</td>
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<td>APSC 173-T2B</td>
<td>APSC_O</td>
<td>T2B</td>
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<td>Discussion</td>
<td>In Person Learning Tue 1:00 p.m. - 2:00 p.m.</td>
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<tr>
<td>APSC 173-T2F</td>
<td>APSC_O</td>
<td>T2F</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>Discussion</td>
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<tr>
<td>APSC 203-T0B</td>
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<td>T0B</td>
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<td>Discussion</td>
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<td>APSC 203-T0F</td>
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<td>Discussion</td>
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<td>APSC 203-T0H</td>
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<td>APSC 203-T0I</td>
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<td>T0I</td>
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<td>Discussion</td>
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<tr>
<td>APSC 215-T1A</td>
<td>APSC_O</td>
<td>T1A</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<td>APSC 215-T1G</td>
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<td>9:30 a.m. - 11:00 a.m.</td>
<td>Discussion</td>
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<tr>
<td>APSC 172-72A</td>
<td>APSC_O</td>
<td>T2A</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>Discussion</td>
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<tr>
<td>APSC 173-72A</td>
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<td>9:30 a.m. - 11:00 a.m.</td>
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<td>APSC 215-T1B</td>
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<td>Discussion</td>
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<tr>
<td>APSC 215-T1F</td>
<td>APSC_O</td>
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<td>9:30 a.m. - 11:00 a.m.</td>
<td>Discussion</td>
<td>In Person Learning Thu 5:00 p.m. - 6:00 p.m.</td>
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</tbody>
</table>
Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

APSC_O 173-T2C APSC_O T2C Engineering Analysis II W2 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: APSC 172.

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

APSC_O 173-T2H APSC_O T2H Engineering Analysis II W2 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: APSC 172.

Discussion In Person Learning Wed 8:00 a.m. - 9:00 a.m.

APSC_O 255-T1C APSC_O T1C Electric Circuits and Power W2 Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

APSC_O 255-T1E APSC_O T1E Electric Circuits and Power W2 Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Discussion In Person Learning Wed 10:00 a.m. - 11:00 a.m.

APSC_O 257-10A APSC_O T1A Fluid Mechanics I W2 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] Prerequisite: All of APSC 180, APSC 181, APSC 248.

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

APSC_O 257-10D APSC_O T1D Fluid Mechanics I W2 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] Prerequisite: All of APSC 180, APSC 181, APSC 248.

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

APSC_O 257-10E APSC_O T1E Fluid Mechanics I W2 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] Prerequisite: All of APSC 180, APSC 181, APSC 248.

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

APSC_O 257-10I APSC_O T1I Fluid Mechanics I W2 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] Prerequisite: All of APSC 180, APSC 181, APSC 248.

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

APSC_O 257-10O APSC_O T1O Fluid Mechanics I W2 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] Prerequisite: All of APSC 180, APSC 181, APSC 248.

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

ASTR_O 120-101 ASTR_O I01 Astrophysics II W2 Modern stellar, galactic, and extragalactic astrophysics, emphasizing stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale structure of the Universe and cosmology; special and general relativity. Three-hour biweekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122; [3-3*-1] Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 11, Principles of Mathematics 11; and Physics 11.

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

ASTR_O 121-101 ASTR_O I01 Astronomy II W2 Emphasizes modern stellar, galactic, and extragalactic astronomy; stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale structure of the Universe and cosmology. Three-hour biweekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, ASTR 121, ASTR 122; [3-3*-0] Prerequisite: Foundations of Mathematics 11 is strongly recommended.

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

ASTR_O 122-101 ASTR_O I01 Astronomy II (Non Lab) W2 Emphasizes modern stellar, galactic, and extragalactic astronomy; stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale structure of the Universe and cosmology. Does not satisfy science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122; [3-0-0] Prerequisite: Foundations of Mathematics 11 is strongly recommended.

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

APSC_O 173-T2G APSC_O T2G Engineering Analysis II W2 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: APSC 172.

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

APSC_O 253-10C APSC_O T1C Fluid Mechanics I W2 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] Prerequisite: All of APSC 180, APSC 181, APSC 248.

Discussion In Person Learning Fri 9:00 a.m. - 10:00 a.m.

APSC_O 177-202 APSC_O 202 Engineering Computation and Instrumentation W2 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 Thu 2:00 p.m. - 3:30 p.m.
**APSC_O 258-201** APSC_O 201 Applications of Engineering Design W2 Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: All of APSC 169, APSC 177, APSC 179, APSC 254. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

**Biol_O 125-101** BIOL_O 101 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 behavioral ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-0-3] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Lecture In Person Learning Tue Thu 1:00 p.m. - 2:30 p.m.

**Biol_O 125-102** BIOL_O 102 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 behavioral ecology are discussed. Credit will be granted for only one of BIOL 116/125 or BIOL 117/122. [3-0-3] Prerequisite: BIOL 116. Corequisite: One of CHEM 113, CHEM 123 is recommended. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

**APSC_O 201-203** APSC_O 203 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

**APSC_O 201-207** APSC_O 207 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

**APSC_O 201-208** APSC_O 208 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

**APSC_O 504-001** APSC_O 001 Solar Cell Engineering W2 Climate change and renewable energy sources, operational principles of solar cells and review of leading technologies, deposition and characterization tools for thin film layers, environmental and economic considerations of solar energy, and latest developments in academic research. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

**APSC_O 181-72D** APSC_O T20 Dynamics W2 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. Discussion In Person Learning Fri 12:00 p.m. - 2:00 p.m.

**APSC_O 181-72H** APSC_O T2H Dynamics W2 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. Discussion In Person Learning Fri 2:00 p.m. - 4:00 p.m.

**APSC_O 181-72J** APSC_O T2J Dynamics W2 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. Discussion In Person Learning Mon 2:00 p.m. - 4:00 p.m.

**APSC_O 201-206** APSC_O 206 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

**APSC_O 278-72A** APSC_O T2A Electric and Magnetic Fields W2 Review of vector calculus and coordinate systems; electrostatic fields; electric dipole and polarization; magnetostatics fields; magnetic dipole and magnetization; boundary conditions; electromotive induction; Maxwell’s equations. Credit will be granted for only one of APSC 278 or ENGR 365. [3-0-1] Prerequisite: All of APSC 172, APSC 180. Discussion In Person Learning Thu 11:00 a.m. - 12:00 p.m.

**APSC_O 201-209** APSC_O 209 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

**Biol_O 310-001** BIOL_O 001 Plant Chemistry W2 Chemical constituents of plants, their synthesis, their contribution to key metabolic processes, and the regulation of their biosynthesis. Synthesis of alkaloids, secondary metabolites, nutrients, and bioactive compounds. Discovery of new phytocarbohydrates and human uses of plants. [3-0-0] Prerequisite: One of CHEM 204, CHEM 214 and one of BIOL 200, BIOL 210, BIOL 319, BIOL 305. Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

**APSC_O 181-72K** APSC_O T2K Dynamics W2 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. Discussion In Person Learning Tue 4:00 p.m. - 6:00 p.m.

**APSC_O 201-201** APSC_O 201 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

**APSC_O 201-205** APSC_O 205 Technical Communication W2 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] Prerequisite: APSC 176. Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

**APSC_O 278-72C** APSC_O T2C Electric and Magnetic Fields W2 Review of vector calculus and coordinate systems; electrostatic fields; electric dipole and polarization; magnetostatics fields; magnetic dipole and magnetization; boundary conditions; electromotive induction; Maxwell’s equations. Credit will be granted for only one of APSC 278 or ENGR 365. [3-0-1] Prerequisite: All of APSC 172, APSC 248. Discussion In Person Learning Thu 11:00 a.m. - 12:00 p.m.

**APSC_O 519-001** APSC_O 001 System Identification W2 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 Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

**APSC_O 181-72G** APSC_O T2G Dynamics W2 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. Discussion In Person Learning Tue 8:00 a.m. - 10:00 a.m.
Matter and Energy II

Thu (Alternate weeks)
In Person Learning
12:00 p.m. - 2:00 p.m.
Discussion
In Person Learning
Thu
8:00 a.m. - 9:00 a.m.

Tue (Alternate weeks)
In Person Learning
5:00 p.m. - 7:00 p.m.

Fri (Alternate weeks)
Laboratory
9:00 a.m. - 11:00 a.m.

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

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

Laboratory
3:30 p.m. - 5:30 p.m.

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Laboratory
3:30 p.m. - 5:30 p.m.
APSC_O 270-001  APSC_O 001Signals and Communication Systems W2
Fourier series and Fourier transform analysis of signals; sampling theorem; amplitude; phase; and frequency modulation; baseband digital transmission; pulse code modulation and quantization; Nyquist pulses; inter-symbol interference. Credit will be granted for only one of APSC 270 or ENGR 361. [3-2*-1] Prerequisite: APSC 248.
Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

BIOC_O 305-101  BIOC_O 101 Molecular Biochemistry II W2
Metabolic pathways with a mechanistic perspective including regulation and control of carbohydrate, lipid, amino acid, and nucleotide catalysis and anabolism. Oxidative- and photo-phosphorylation. The biochemistry and molecular biology of signal transduction, replication, DNA repair, transcription, translation, and gene regulation. Credit will only be granted for one of BIOC 305 or BIOC 319. [3-0-0] Prerequisite: All of BIOC 304, BIOC 200.
Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

ASTR_O 120-001  ASTR_O 101 Astrophysics II W2
Modern stellar, galactic, and extragalactic astrophysics, emphasizing stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale Universe and cosmology structure; special and general relativity. Three-hour weekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122. [3-3*-1] Prerequisite: One of Foundations of Mathematics 12, Pre-Calc Math 11, Principles of Mathematics 11; and Physics 11.
Seminar In Person Learning Fri 12:00 p.m. - 1:00 p.m.

ARTH_O 102-101  ARTH_O 101 Art and Visual Cultures of the World II W2
Introduction to art and visual cultures of major world regions from the early modern period to the present. [3-0-0] Prerequisite: Three-year standing.
Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

ARTH_O 315-101  ARTH_O 101 History of 20th-Century Art W2
Examination of the visual arts of North America and Europe from 1980-1990: pivotal artists and artistic movements, theoretical and critical study of the relationship between art production and consumption since the advent of modernism; the changing role of the artist as the bearer of cultural values. [3-0-0]
Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

ARTH_O 375-101  ARTH_O 101 Encountering India: The Age of the Moghuls W2
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 Mughal Empire, the roles of Hindus, Islam, and Sikhism, 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 ARTH 375, ARTH 375-201, or WRDL 375. Prerequisite: Third-year standing. Equivalency: DHUM 375, WRDL 375. Lecture In Person Learning Mon Wed 6:00 p.m. - 7:30 p.m.

ARTH_O 385-101  ARTH_O 101 African Dress and Fashion W2
An examination of historical and contemporary African dress and fashion emphasizing sociocultural and political contexts, transculturation, and global identities. [3-0-0] Prerequisite: Third-year standing.
Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

ARTH_O 451-101  ARTH_O 101 Politics of Exhibition and Representation W2
Politics of exhibition and representation of world arts and visual cultures in contexts of colonialism and postcolonial action. Prerequisite: Third-year standing.
Lecture In Person Learning Tue Thu 12:30 p.m. - 2:30 p.m.

APSC_O 253-11A  APSC_O 11A Fluid Mechanics I W2
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] 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_O 253-11B  APSC_O 11B Fluid Mechanics I W2
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] 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_O 253-11C  APSC_O 11C Fluid Mechanics I W2
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] 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_O 253-11D  APSC_O 11D Fluid Mechanics I W2
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] 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_O 253-11E  APSC_O 11E Fluid Mechanics I W2
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] 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_O 253-11F  APSC_O 11F Fluid Mechanics I W2
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] 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_O 253-11G  APSC_O 11G Fluid Mechanics I W2
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] 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_O 253-11H  APSC_O 11H Fluid Mechanics I W2
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] 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_O 253-11I  APSC_O 11I Fluid Mechanics I W2
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] 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_O 253-11J  APSC_O 11J Fluid Mechanics I W2
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] 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_O 253-11K  APSC_O 11K Fluid Mechanics I W2
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] Prerequisite: All of APSC 180, APSC 181, APSC 248.
Laboratory In Person Learning Wed (Alternate weeks) 12:00 p.m. - 2:00 p.m.

APSC_O 253-11L  APSC_O 11L Fluid Mechanics I W2
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] Prerequisite: All of APSC 180, APSC 181, APSC 248.
Laboratory In Person Learning Wed (Alternate weeks) 12:00 p.m. - 2:00 p.m.

APSC_O 253-11M  APSC_O 11M Fluid Mechanics I W2
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] 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_O 253-11N  APSC_O 11N Fluid Mechanics I W2
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] Prerequisite: All of APSC 180, APSC 181, APSC 248.
Laboratory In Person Learning Mon (Alternate weeks) 12:00 p.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Section</th>
<th>Location</th>
<th>Instructor</th>
<th>Days</th>
<th>Time</th>
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<tr>
<td>BIOL 125-L01</td>
<td>L01</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
<td>12:30 p.m. - 3:30 p.m.</td>
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<td>BIOL 125-L02</td>
<td>L02</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<td>BIOL 125-L03</td>
<td>L03</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<td>BIOL 125-L04</td>
<td>L04</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
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<td>BIOL 125-L05</td>
<td>L05</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
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<td>BIOL 125-L06</td>
<td>L06</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
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<td>BIOL 125-L07</td>
<td>L07</td>
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<td>W2</td>
<td>Wed</td>
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<td>BIOL 125-L08</td>
<td>L08</td>
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<td>W2</td>
<td>Wed</td>
<td>9:30 a.m. - 12:30 p.m.</td>
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<td>BIOL 125-L09</td>
<td>L09</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
<td>12:30 p.m. - 3:30 p.m.</td>
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<td>BIOL 125-L10</td>
<td>L10</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<td>BIOL 125-L11</td>
<td>L11</td>
<td>Biology for Science Majors II</td>
<td>W2</td>
<td>Wed</td>
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<td>L12</td>
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<td>Wed</td>
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<tr>
<td>BIOL 125-L13</td>
<td>L13</td>
<td>Tue</td>
<td>12:30 p.m. - 3:30 p.m.</td>
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<tr>
<td>BIOL 125-L14</td>
<td>L14</td>
<td>Tue</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<tr>
<td>BIOL 125-L15</td>
<td>L15</td>
<td>Thu</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>BIOL 125-L16</td>
<td>L16</td>
<td>Fri</td>
<td>9:30 a.m. - 12:30 p.m.</td>
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<tr>
<td>BIOL 125-L17</td>
<td>L17</td>
<td>Mon</td>
<td>12:30 p.m. - 3:30 p.m.</td>
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<tr>
<td>BIOL 125-L18</td>
<td>L18</td>
<td>Mon</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<tr>
<td>BIOL 125-L19</td>
<td>L19</td>
<td>Mon</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>BIOL 125-L20</td>
<td>L20</td>
<td>Tue</td>
<td>9:30 a.m. - 12:30 p.m.</td>
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<tr>
<td>BIOL 125-L21</td>
<td>L21</td>
<td>Tue</td>
<td>12:30 p.m. - 3:30 p.m.</td>
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<tr>
<td>BIOL 125-L22</td>
<td>L22</td>
<td>Tue</td>
<td>3:30 p.m. - 6:30 p.m.</td>
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<tr>
<td>BIOL 125-L23</td>
<td>L23</td>
<td>Tue</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>BIOL 125-L24</td>
<td>L24</td>
<td>Wed</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>Laboratory</td>
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</table>

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 behavioral 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.

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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 behavioral 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 12:30 p.m. - 3:30 p.m.

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Laboratory In Person Learning Tue (Alternate weeks) 5:00 p.m. - 7:00 p.m.

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Laboratory In Person Learning Tue (Alternate weeks) 5:00 p.m. - 7:00 p.m.

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Laboratory In Person Learning Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Laboratory In Person Learning Mon (Alternate weeks) 8:00 a.m. - 10:00 a.m.

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

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

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Laboratory In Person Learning Thu (Alternate weeks) 6:00 p.m. - 8:00 p.m.

Circuit analysis techniques for steady-state AC and DC circuits containing independent and dependent voltage and current sources, resistance, capacitance and inductance. DC maximum power transfer. AC power including real, reactive, apparent and complex power and power factor. AC power analysis using phasors. Three-phase AC power systems. [3-2*-1] Prerequisite: APSC 178.

Laboratory In Person Learning Thu (Alternate weeks) 6:00 p.m. - 8:00 p.m.
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<th>Course Code</th>
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<tr>
<td>APSC 262-L2A</td>
<td>L2A</td>
<td>Digital Logic Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178. <strong>Laboratory In Person Learning Mon (Alternate weeks)</strong> 2:00 p.m. - 4:00 p.m.</td>
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<tr>
<td>APSC 262-L2B</td>
<td>L2B</td>
<td>Digital Logic Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178. <strong>Laboratory In Person Learning Mon (Alternate weeks)</strong> 2:00 p.m. - 4:00 p.m.</td>
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<tr>
<td>APSC 262-L2C</td>
<td>L2C</td>
<td>Digital Logic Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178. <strong>Laboratory In Person Learning Mon (Alternate weeks)</strong> 2:00 p.m. - 4:00 p.m.</td>
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<tr>
<td>APSC 262-L2D</td>
<td>L2D</td>
<td>Digital Logic Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178. <strong>Laboratory In Person Learning Mon (Alternate weeks)</strong> 2:00 p.m. - 4:00 p.m.</td>
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<tr>
<td>APSC 262-L2E</td>
<td>L2E</td>
<td>Digital Logic Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178. <strong>Laboratory In Person Learning Mon (Alternate weeks)</strong> 2:00 p.m. - 4:00 p.m.</td>
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<tr>
<td>APSC 258-L2A</td>
<td>L2A</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Wed</strong> 3:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>APSC 258-L2B</td>
<td>L2B</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Wed</strong> 3:30 p.m. - 4:30 p.m.</td>
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<tr>
<td>APSC 258-L2C</td>
<td>L2C</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Wed</strong> 3:30 p.m. - 4:30 p.m.</td>
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<tr>
<td>APSC 258-L2D</td>
<td>L2D</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Tue</strong> 3:30 p.m. - 4:30 p.m.</td>
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<tr>
<td>APSC 258-L2E</td>
<td>L2E</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Tue</strong> 3:30 p.m. - 4:30 p.m.</td>
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<tr>
<td>APSC 258-L2F</td>
<td>L2F</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Tue</strong> 3:30 p.m. - 4:30 p.m.</td>
</tr>
<tr>
<td>APSC 258-L2G</td>
<td>L2G</td>
<td>Applications of Engineering Design</td>
<td>Wed</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>W2</td>
<td>Principles of engineering design, applied to a team-based design project. Use of probability, programming, decision making, economic principles, systems theory, and technical communication in design projects. [3-1-0] Prerequisite: APSC 178, APSC 179, APSC 254. <strong>Laboratory In Person Learning Tue</strong> 3:30 p.m. - 4:30 p.m.</td>
</tr>
</tbody>
</table>
Fourier series and Fourier transform analysis of signals; sampling theorem; amplitude; phase; and frequency modulation; baseband digital transmission; pulse code modulation and quantization; Nyquist pulses; inter-symbol interference. Credit will be granted for only one of APSC 270 or ENGR 361. [3-2*-0] Prerequisite: APSC 246.

Laboratory In Person Learning Wed (Alternate weeks) 8:00 a.m. - 10:00 a.m.

APSC_O 270-11D APSC_O 11D Signals and Communication Systems W2
Fourier series and Fourier transform analysis of signals; sampling theorem; amplitude; phase; and frequency modulation; baseband digital transmission; pulse code modulation and quantization; Nyquist pulses; inter-symbol interference. Credit will be granted for only one of APSC 270 or ENGR 361. [3-2*-0] Prerequisite: APSC 246.

Laboratory In Person Learning Wed (Alternate weeks) 8:00 a.m. - 10:00 a.m.

APSC_O 270-11E APSC_O 11E Signals and Communication Systems W2
Fourier series and Fourier transform analysis of signals; sampling theorem; amplitude; phase; and frequency modulation; baseband digital transmission; pulse code modulation and quantization; Nyquist pulses; inter-symbol interference. Credit will be granted for only one of APSC 270 or ENGR 361. [3-2*-0] Prerequisite: APSC 246.

Laboratory In Person Learning Fri (Alternate weeks) 12:30 p.m. - 2:30 p.m.

APSC_O 270-11F APSC_O 11F Signals and Communication Systems W2
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 278 or ENGR 365. [3-0-1] Prerequisite: All of APSC 178, APSC 248.

Laboratory Fri (Alternate weeks) 12:30 p.m. - 2:30 p.m.

APSC_O 278-001 APSC_O 001 Electric and Magnetic Fields W2
Artistic practice in Canada from the beginning of the twentieth century to 1970. Developments in film, video, photography, performance, painting, and sculpture are considered. Emphasis on art’s relationship to the changing political, economic, and social arenas in Canada during this time. [3-0-0] Prerequisite: Third-year standing.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

ARTH_O 320-001 ARTH_O 001 Art in Canada 1900-1970 W2
Physiological adaptations of plants and animals to their environments. Structure/function relationships of human organ systems. Recommended for Arts or Education students, in conjunction with BIOL 117. BIOL 117/122 cannot be used in place of BIOL 116/125 for those degree programs that require BIOL 116/125. Credit will be granted for either BIOL 117/122 or BIOL 116/125. Credit will be granted for only one of BIOL 112, both of HES 101 and HES 111, or both of HMKN 190 and HMKN 191. [16-0]

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

BIOC_O 122-101 BIOC_O 101 Physiological Adaptations of Multicellular Organisms W2
Modern stellar, galactic, and extragalactic astrophysics, emphasizing stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale Universe and cosmology structure; special and general relativity. Three-hour biweekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122. [3-3*-1] Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 11, Principles of Mathematics 11; and Physics 11.

Laboratory In Person Learning Thu (Alternate weeks) 2:30 p.m. - 5:30 p.m.

ASTR_O 120-L01 ASTR_O 01 Astrophysics II W2
Modern stellar, galactic, and extragalactic astrophysics, emphasizing stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale Universe and cosmology structure; special and general relativity. Three-hour biweekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122. [3-3*-1] Prerequisite: One of Foundations of Mathematics 12, Pre-Calculus 11, Principles of Mathematics 11; and Physics 11.

Laboratory In Person Learning Thu (Alternate weeks) 6:30 p.m. - 9:30 p.m.

ASTR_O 121-L01 ASTR_O 01 Astronomy II W2
Emphasizes modern stellar, galactic, and extragalactic astronomy; stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale structure of the Universe and cosmology. Three-hour biweekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122. [3-2*-0] Prerequisite: Foundations of Mathematics 11 is strongly recommended.

Laboratory In Person Learning Thu (Alternate weeks) 2:30 p.m. - 5:30 p.m.

ASTR_O 121-L02 ASTR_O 02 Astronomy II W2
Emphasizes modern stellar, galactic, and extragalactic astronomy; stars and stellar evolution from protostars to black holes; galaxies, clusters of galaxies, and quasars; large-scale structure of the Universe and cosmology. Three-hour biweekly lab; satisfies 3 credits of science lab requirement for B.A. graduation. Credit will be granted for only one of ASTR 120, 121, 122. [3-2*-0] Prerequisite: Foundations of Mathematics 11 is strongly recommended.

Laboratory In Person Learning Thu (Alternate weeks) 6:30 p.m. - 9:30 p.m.

BIOL_O 393-101 BIOL_O 01 Biochemistry Laboratory W2
Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP 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: BIOL 304 and one of BIOL 200, BIOL 228, CHEM 204, CHEM 214. Corequisite: BIOL 366. Equivalency: BIOL393.

Laboratory In Person Learning Mon 2:30 p.m. - 6:30 p.m.

BIOL_O 393-102 BIOL_O 02 Biochemistry Laboratory W2
Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP 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: BIOL 304 and one of BIOL 200, BIOL 228, CHEM 204, CHEM 214. Corequisite: BIOL 366. Equivalency: BIOL393.

Laboratory In Person Learning Tue 2:30 p.m. - 6:30 p.m.

BIOL_O 393-103 BIOL_O 03 Biochemistry Laboratory W2
Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP 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: BIOL 304 and one of BIOL 200, BIOL 228, CHEM 204, CHEM 214. Corequisite: BIOL 366. Equivalency: BIOL393.

Laboratory In Person Learning Wed 2:30 p.m. - 6:30 p.m.

BIOL_O 393-104 BIOL_O 04 Biochemistry Laboratory W2
Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP 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: BIOL 304 and one of BIOL 200, BIOL 228, CHEM 204, CHEM 214. Corequisite: BIOL 366. Equivalency: BIOL393.

Laboratory In Person Learning Thu 2:30 p.m. - 6:30 p.m.

BIOL_O 393-105 BIOL_O 05 Biochemistry Laboratory W2
Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP 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: BIOL 304 and one of BIOL 200, BIOL 228, CHEM 204, CHEM 214. Corequisite: BIOL 366. Equivalency: BIOL393.

Laboratory In Person Learning Fri 2:30 p.m. - 6:30 p.m.

BIOL_O 393-108 BIOL_O 08 Biochemistry Laboratory W2
Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP 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: BIOL 304 and one of BIOL 200, BIOL 228, CHEM 204, CHEM 214. Corequisite: BIOL 366. Equivalency: BIOL393.

Laboratory In Person Learning Fri 8:30 a.m. - 12:30 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 116/125</td>
<td>Introduction to Biological Concepts Necessary for Second-Year Biology</td>
<td>3-3-0</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
</tr>
<tr>
<td>BIOL 117/122</td>
<td>Introduction to Biological Concepts Necessary for Second-Year Biology</td>
<td>3-3-0</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
</tr>
<tr>
<td>BIOL 125 L26</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
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<tr>
<td>BIOL 125 L27</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
</tr>
<tr>
<td>BIOL 125 L28</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
</tr>
<tr>
<td>BIOL 125 L29</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
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<tr>
<td>BIOL 125 L30</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
</tr>
<tr>
<td>BIOL 125 L31</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
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<tr>
<td>BIOL 125 L32</td>
<td>Biology for Science Majors II</td>
<td>2</td>
<td>Continuation of BIOL 116. Introduction to biological concepts necessary for second-year biology. Physiology of reproduction, gas exchange, inter-organ transport, and excretion and movement in animals. Ecosystem, population, community, and behavioral 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.</td>
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</tbody>
</table>
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 BIOL 117, BIOL 122.

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 excitation and movement in animals. Ecosystem, population, community, and behavioral 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.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Lecture In Person Learning Mon 8:00 a.m. - 11:00 a.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Mon 2:00 p.m. - 5:00 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Mon 5:00 p.m. - 8:00 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Tue 8:00 a.m. - 11:00 a.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Wed 12:30 p.m. - 3:30 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Wed 5:00 p.m. - 8:00 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Thu 12:30 p.m. - 3:30 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Thu 5:00 p.m. - 8:00 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Fri 8:00 a.m. - 11:00 a.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Laboratory In Person Learning Fri 12:30 p.m. - 3:30 p.m.

Continuation and completion of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. 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 excitation and movement in animals. Ecosystem, population, community, and behavioral 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.

Comparative study of bryophytes, pteridophytes, gymnosperms, and angiosperms, integrating form, function, and ecology. [3-3-0] Prerequisite: BIOL 125.

Continuation of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

Continuation of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Lecture In Person Learning Tue Thu 7:00 p.m. - 9:00 p.m.

Continuation of the comprehensive survey of human structures and functions started in BIOL 131. Credit will be granted for only one of BIOL 133, HES 111, or HMKN 191. [3-3-0] Prerequisite: BIOL 131. Lecture In Person Learning Tue Thu 9:00 p.m. - 11:00 p.m.
BIOL 232-101  BIOL O  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 BIOL 232 or BIOL 114. [3-0-0] Prerequisite: Either (a) BIOL 235 or (b) HINT 231.
Lecture  In Person Learning  Mon  2:00 p.m. - 5:00 p.m.

BIOL 265-101  BIOL O  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 BIOL 265 or BIOL 365. [3-0-0] Prerequisite: BIOL 125.
Lecture  In Person Learning  Tue Thu  5:00 p.m. - 6:30 p.m.

BIOL 306-101  BIOL O  101  Ecology of Animals  W2

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

BIOL 312-101  BIOL O  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, epidemiology, 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: BIOL 228.
Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

BIOL 318-002  BIOL O  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: BIOL 228.
Lecture  In Person Learning  Tue Thu  12:30 p.m. - 2:00 p.m.

BIOL 319-101  BIOL O  101  Biochemistry II  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 BIOL 210, BIOL 341, PSYO 230, PSYO 331.
Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

BIOL 350-101  BIOL O  101  Clinical Neuroscience  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: BIOL 354.
Lecture  In Person Learning  Wed Fri  11:00 a.m. - 12:30 p.m.

BIOL 363-101  BIOL O  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 363 or BIOL 263. [3-3-0] Prerequisite: BIOL 200.
Lecture  In Person Learning  Mon Wed  12:30 p.m. - 2:00 p.m.

BIOL 363-L01  BIOL O  L01  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 363 or BIOL 263. [3-3-0] Prerequisite: BIOL 200.
Laboratory  In Person Learning  Wed  2:00 p.m. - 5:00 p.m.

BIOL 363-L02  BIOL O  L02  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 363 or BIOL 263. [3-3-0] Prerequisite: BIOL 200.
Laboratory  In Person Learning  Wed  6:30 p.m. - 9:30 p.m.

BIOL 363-L03  BIOL O  L03  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 363 or BIOL 263. [3-3-0] Prerequisite: BIOL 200.
Laboratory  In Person Learning  Thu  9:30 a.m. - 12:30 p.m.

BIOL 363-L04  BIOL O  L04  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 363 or BIOL 263. [3-3-0] Prerequisite: BIOL 200.
Laboratory  In Person Learning  Thu  2:00 p.m. - 5:00 p.m.

BIOL 363-L05  BIOL O  L05  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 363 or BIOL 263. [3-3-0] Prerequisite: BIOL 200.
Laboratory  In Person Learning  Thu  6:30 p.m. - 9:30 p.m.

BIOL 363-XMT  BIOL O  XMT  Developmental 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: BIOL 201.
Laboratory  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

BIOL 370-001  BIOL O  001  African Savannah Biology  W2

Introduction to the diverse roles of microbes in natural and artificial environments. Topics range from community interactions to biogeochemical cycles to biodegradation and will introduce principles, practical applications such as waste water treatment, and implications of environmental microbiology. [3-0-0] Prerequisite: BIOL 228 and one of CHEM 203, CHEM 213.
Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.
Biol_O 383-101  Biology O 101  Prokaryotic Physiology  W2  Physiology and molecular biology of prokaryotic organisms. Molecular structure and functional aspects of prokaryotic cells including: bacterial and archeal metabolism; energy production and use by aerobes and anaerobes; cellular growth and biosynthesis; and molecular genetics. Credit will be granted for only one of BIOL 382 or BIOL 420V when the subject matter is of the same nature. [3-0-0] Prerequisite: BIOL 228 and one of CHEM 204, CHEM 214. Lecture  In Person Learning  Tue Thu  4:00 p.m. - 5:00 p.m.

Biol_O 393-L01  Biology O 101  Biochemistry Laboratory  W2  Advanced survey of the field of evolutionary ecology: the study of the ecological basis for the evolution of life histories, sex, mating strategies, and foraging strategies. Credit will only be granted for one of BIOL 417 or BIOL 517. [3-0-0] Prerequisite: BIOL 311 and one of BIOL 202, STAT 230. Lecture  In Person Learning  Mon Wed  6:00 p.m. - 7:30 p.m.  

Biol_O 393-L02  Biology O 102  Biochemistry Laboratory  W2  Scientific basis of conservation biology. Obtain and analyze demographic data, develop population models, and apply them to conservation. Characteristics of molecular markers, associated analytical approaches, emerging genomic techniques for collecting molecular and population genetic data. Applications in ecology, evolution, and conservation. Credit will only be granted for one of BIOL 393 or BIOL 393. [3-0-0] Prerequisite: BIOL 311. Lecture  In Person Learning  Mon  2:30 p.m. - 6:30 p.m.

Biol_O 393-L03  Biology O 103  Biochemistry Laboratory  W2  Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOL 393 or BIOL 393. [0-4-0] Prerequisite: BIOL 311. Lecture  Bioclinic  W2  2:30 p.m. - 6:30 p.m.

Biol_O 393-L04  Biology O 104  Biochemistry Laboratory  W2  Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOL 393 or BIOL 393. [3-0-0] Prerequisite: BIOL 311. Lecture  Bioclinic  W2  2:30 p.m. - 6:30 p.m.

Biol_O 393-L05  Biology O 105  Biochemistry Laboratory  W2  Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOL 393 or BIOL 393. [3-0-0] Prerequisite: BIOL 311. Lecture  Bioclinic  W2  2:30 p.m. - 6:30 p.m.

Biol_O 393-L06  Biology O 106  Biochemistry Laboratory  W2  Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOL 393 or BIOL 393. [3-0-0] Prerequisite: BIOL 311. Lecture  Bioclinic  W2  2:30 p.m. - 6:30 p.m.

Biol_O 393-L07  Biology O 107  Biochemistry Laboratory  W2  Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOL 393 or BIOL 393. [3-0-0] Prerequisite: BIOL 311. Lecture  Bioclinic  W2  2:30 p.m. - 6:30 p.m.

Biol_O 393-L08  Biology O 108  Biochemistry Laboratory  W2  Advanced survey of the field of evolutionary ecology: the study of the ecological basis for the evolution of life histories, sex, mating strategies, and foraging strategies. Credit will only be granted for one of BIOL 417 or BIOL 517. [3-0-0] Prerequisite: BIOL 311 and one of BIOL 202, STAT 230. Lecture  In Person Learning  Mon Wed  8:00 a.m. - 9:00 a.m.

Biol_O 417-101  Biology O 101  Evolutionary Ecology  W2  Topics include protein separation, enzyme kinetics, ELISA, DNA Ligation and Transformation, PCR, RFLP analysis, Agarose gel electrophoresis, STR and VNTR analysis, and gene regulation. Credit will be granted for only one of BIOL 393 or BIOL 393. [3-0-0] Prerequisite: BIOL 311. Lecture  Bioclinic  W2  2:30 p.m. - 6:30 p.m.

Biol_O 422-101  Biology O 101  Conservation Biology  W2  Conservation approaches including habitat planning, reserve design, surrogacy, and policy. Credit will be granted for only one of BIOL 422 or BIOL 513. [3-0-0] Prerequisite: BIOL 310. Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

Biol_O 424-001  Biology O 001  Global Food Systems: Society, Ecology, Sustaining  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 efficient allocation. Credit will be granted for only one of BIOL 424 or MGMT 470. [3-0-0] Prerequisite: Third-year standing. Equivalency: MGMT 470. Lecture  In Person Learning  Tue Thu  3:30 p.m. - 5:00 p.m.

Biol_O 426-101  Biology O 101  Cancer Biology  W2  The molecular and cellular basis of cancer. Introduction to principles of oncology including prevention, diagnosis and treatment. [3-0-0] Prerequisite: One of BIOL 311, BIOL 304 and all of BIOL 200, BIOL 265, BIOL 310. Lecture  In Person Learning  Tue Thu  11:00 a.m. - 12:30 p.m.

Biol_O 430-C_001  Biology O C C_001  Special Topics in Biology, Lecture Format  W2  With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOL 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. Lecture  In Person Learning  Tue Thu  12:30 p.m. - 2:00 p.m.

Biol_O 430-N_001  Biology O N N_001  Special Topics in Biology, Lecture Format  W2  With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOL 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. Lecture  In Person Learning  Mon Wed  2:00 p.m. - 3:30 p.m.

Biol_O 430-W_001  Biology O W W_001  Special Topics in Biology, Lecture Format  W2  With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOL 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. Lecture  In Person Learning  Tue Thu  11:00 a.m. - 12:30 p.m.

Biol_O 461-101  Biology O 001  Cell Signaling  W2  Techniques for collecting molecular and population genetic data. Applications in ecology, evolution, and conservation. Characteristics of molecular markers, associated analytical approaches, emerging genomic technologies, and case studies. Credit will be granted for only one of BIOL 468 or BIOL 568. [3-0-0] Prerequisite: BIOL 201. Lecture  In Person Learning  Mon Wed  2:00 p.m. - 3:30 p.m.

Biol_O 468-001  Biology O 001  Molecular Approaches in Ecology and Evolution  W2  Signal transduction mechanisms of cells as mediators of responses to their environments. Interplay between signaling pathways, and relationships between signaling defects, disease, and therapeutic agents, with a focus on eukaryotic cells. Credit will be granted for only one of BIOL 461 or BIOL 420A when the subject matter is of the same nature. [3-0-0] Prerequisite: BIOL 200 and one of BIOL 311, BIOL 304. Lecture  In Person Learning  Wed Fri  11:00 a.m. - 12:30 p.m.

Biol_O 513-101  Biology O 101  Conservation Biology  W2  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 BIOL 422 or BIOL 513. [3-0-0] Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.
BIOL_O 517-001  
**Evolutionary Ecology**  
W2  
Advanced survey of the field of evolutionary ecology: the study of the ecological basis for the evolution of life histories, sex, mating strategies, and foraging strategies. Credit will only be granted for one of BIOL 417 or BIOL 517. [3-0-0]  
Lecture  
In Person Learning  
Mon Wed Fri  
8:00 a.m. - 9:00 a.m.

BIOL_O 568-001  
**Molecular Approaches in Evolution and Conservation**  
W2  
Techniques for collecting molecular and population genetic data. Applications in ecology, evolution, and conservation. Characteristics of molecular markers, associated analytical approaches, emerging genomic technologies, and case studies. Credit will be granted for only one of BIOL 568 or BIOL 468. [3-0-0]  
Lecture  
In Person Learning  
Wed Fri  
11:00 a.m. - 12:30 p.m.

BIOL_O 599-002  
**M.Sc. Thesis**  
W2  
Pass/Fail.  
Thesis  
In Person Learning  
Arranged  
Arranged

BIOL_O 699-002  
**Ph.D. Thesis**  
W2  
Pass/Fail.  
Thesis  
In Person Learning  
Arranged  
Arranged

CCS_O 150-001  
**Creative and Critical Art Theory I**  
W2  
Introduction to Western, Indigenous, and global art practices and theoretical discourses through the discussion and examination of forms, content, and ideas that contribute to cultural and contemporary art practices. [3-0-1]  
Lecture  
In Person Learning  
Mon  
2:00 p.m. - 6:00 p.m.

CCS_O 507-001  
**Creative and Critical Art Theory II**  
W2  
Multi-disciplinary seminar dealing with various approaches and issues in contemporary creative research methods as relating to the disciplines of Visual Arts, Media Arts, Creative Performance, and Curation. Students will be expected to develop creative work and a thesis plan. Prerequisite: CCS 506 or permission of the Department of Creative Studies.  
Seminar  
In Person Learning  
Fri  
11:00 a.m. - 2:00 p.m.

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

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

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

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

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

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

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

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

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

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

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

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

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

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.  
Lecture  
In Person Learning  
Wed  
1:30 p.m. - 4:30 p.m.
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. [3-3-1] Prerequisite: CHEM 121.

Laboratory In Person Learning Wed 5:30 p.m. - 6:30 p.m.

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. [3-3-1] Prerequisite: CHEM 121.

Laboratory In Person Learning Wed 5:30 p.m. - 6:30 p.m.

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Laboratory In Person Learning Wed 5:30 p.m. - 6:30 p.m.

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

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. [3-3-1] Prerequisite: CHEM 121.

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

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

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.

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 Fri 9:30 a.m. - 12:30 p.m.
CHEM 201-107 CHEM_O L07 Introduction to Physical Chemistry W2 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 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

CHEM 201-108 CHEM_O L08 Introduction to Physical Chemistry W2 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 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended. Laboratory In Person Learning Thu 1:30 p.m. - 4:30 p.m.

CHEM 201-109 CHEM_O L09 Introduction to Physical Chemistry W2 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 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended. Laboratory In Person Learning Thu 5:30 p.m. - 8:30 p.m.

CHEM 201-110 CHEM_O L10 Introduction to Physical Chemistry W2 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 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended. Laboratory In Person Learning Fri 11:00 a.m. - 2:00 p.m.

CHEM 201-501 CHEM_O S01 Introduction to Physical Chemistry W2 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 113, CHEM 123. 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.

CHEM 201-502 CHEM_O S02 Introduction to Physical Chemistry W2 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 113, CHEM 123. 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.

CHEM 201-XMT CHEM_O XMT Introduction to Physical Chemistry W2 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 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended. MATH 200 is also strongly recommended. Laboratory In Person Learning Arranged Arranged

CHEM 204-001 CHEM_O L06 Organic Chemistry W2 Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromacity 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 205. 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.

CHEM 204-004 CHEM_O L04 Organic Chemistry W2 Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromacity 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 205. 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.

CHEM 204-005 CHEM_O L05 Organic Chemistry W2 Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromacity 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 205. 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.

CHEM 204-007 CHEM_O L07 Organic Chemistry W2 Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromacity 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 205. 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.

CHEM 204-XMT CHEM_O XMT Organic Chemistry W2 Mechanistic analysis of chemical reactivity of common functional groups, with focus on carbonyl chemistry; aromacity 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 205. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enrol in CHEM 214. Laboratory In Person Learning Arranged Arranged

CHEM 210-001 CHEM_O L01 Physical Chemistry for Earth, Environmental, an W2 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 113, CHEM 123. A minimum grade of 65% 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. [3-3-*] 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 Mon (Alternate weeks) 10:00 a.m. - 1:00 p.m.

Mechanistic description of aromatic substitution, reactions of carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 204. Lecture In Person Learning Mon (Alternate weeks) 10:00 a.m. - 11:00 a.m.

Mechanistic description of aromatic substitution, reactions of carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 204. Laboratory In Person Learning Wed (Alternate weeks) 1:30 p.m. - 4:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 204. Laboratory In Person Learning Wed (Alternate weeks) 1:30 p.m. - 4:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll 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 carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll 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 carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll 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 carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll 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 carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll 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 carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll 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 carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 5:30 p.m. - 8:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 5:30 p.m. - 8:30 p.m.

Mechanistic description of aromatic substitution, reactions of carbonyl 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-*] Prerequisite: One of CHEM 203, CHEM 213. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enroll in CHEM 204. Laboratory In Person Learning Thu (Alternate weeks) 5:30 p.m. - 8:30 p.m.
CHEM_O 301-001 CHEM_O 001 Aqueous Environmental Chemistry W2 Properties of natural waters, including gas and solid equilibria, pH, redox, complexation analysis, corrosion treatment, ion exchange, colloids, and microbial transformations. [3-0-0] Prerequisite: One of MATH 101, MATH 103 and one of CHEM 201, CHEM 210. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

CHEM_O 311-001 CHEM_O 001 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectroscopic methods, mass spectrometry, electrophoresis and chromatography. [3-4] Prerequisite: CHEM 211. One of BIOL 202, STAT 230 is strongly recommended. Lecture In Person Learning Mon Wed Fri 3:00 p.m. - 4:00 p.m.

CHEM_O 311-021 CHEM_O L01 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectroscopic methods, mass spectrometry, electrophoresis and chromatography. [3-4] Prerequisite: CHEM 211. One of BIOL 202, STAT 230 is strongly recommended. Laboratory In Person Learning Wed 4:00 p.m. - 8:00 p.m.

CHEM_O 311-022 CHEM_O L02 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectroscopic methods, mass spectrometry, electrophoresis and chromatography. [3-4] Prerequisite: CHEM 211. One of BIOL 202, STAT 230 is strongly recommended. Laboratory In Person Learning Thu 9:30 a.m. - 1:30 p.m.

CHEM_O 311-023 CHEM_O L03 Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectroscopic methods, mass spectrometry, electrophoresis and chromatography. [3-4] Prerequisite: CHEM 211. One of BIOL 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 XMT Instrumental Analytical Chemistry W2 Overview of instrumental methods of chemical analysis, including spectroscopic methods, mass spectrometry, electrophoresis and chromatography. [3-4] Prerequisite: CHEM 211. One of BIOL 202, STAT 230 is strongly recommended. Laboratory In Person Learning Arranged Arranged

CHEM_O 312-001 CHEM_O 001 Introduction to Quantum Mechanics and Spectroscopy W2 Principles of quantum mechanics, atomic wavefunctions, angular momentum, spin, atomic term symbols. [3-4*] 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 312-021 CHEM_O L01 Introduction to Quantum Mechanics and Spectroscopy W2 Principles of quantum mechanics, atomic wavefunctions, angular momentum, spin, atomic term symbols. [3-4*] 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 312-022 CHEM_O L02 Introduction to Quantum Mechanics and Spectroscopy W2 Principles of quantum mechanics, atomic wavefunctions, angular momentum, spin, atomic term symbols. [3-4*] 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 XMT Introduction to Quantum Mechanics and Spectroscopy W2 Principles of quantum mechanics, atomic wavefunctions, angular momentum, spin, atomic term symbols. [3-4*] Prerequisite: CHEM 201. Corequisite: MATH 200 is strongly recommended. Laboratory In Person Learning Arranged Arranged

CHEM_O 317-001 CHEM_O 001 Environmental Physical Organic Chemistry W2 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 relationships, detection, toxicology, remediation, and social impact of such compounds. [3-5] Prerequisite: One of MATH 103, 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_O 317-021 CHEM_O L01 Environmental Physical Organic Chemistry W2 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 relationships, detection, toxicology, remediation, and social impact of such compounds. [3-5] Prerequisite: One of MATH 103, MATH 103 and one of CHEM 204, CHEM 214 and one of PHYS 121, PHYS 122. Lecture In Person Learning Arranged Arranged

CHEM_O 319-010 CHEM_O 101 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. [3-3-0] Prerequisite: All of CHEM 201, MATH 200. Lecture In Person Learning Mon Wed Fri 3:30 p.m. - 5:00 p.m.

CHEM_O 319-021 CHEM_O 101 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. [3-3-0] Prerequisite: All of CHEM 201, MATH 200. Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

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

CHEM_O 330-021 CHEM_O L01 Advanced Organic Chemistry W2 Application of carbon= group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*] Prerequisite: One of CHEM 204, CHEM 214. Laboratory In Person Learning Tue (Alternate weeks) 11:00 a.m. - 3:00 p.m.

CHEM_O 330-022 CHEM_O L02 Advanced Organic Chemistry W2 Application of carbon= group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*] Prerequisite: One of CHEM 204, CHEM 214. Laboratory In Person Learning Mon (Alternate weeks) 11:00 a.m. - 3:00 p.m.

CHEM_O 330-023 CHEM_O L03 Advanced Organic Chemistry W2 Application of carbon= group chemistry, cyclisation reactions, conformational analysis, and rearrangement reactions in organic synthesis. [3-4*] 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 001 Bioinorganic Chemistry W2 Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoelectro catalysis, solar fuels. [3-4*] 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 336-001 CHEM_O 001 Green Inorganic Chemistry W2 Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoelectro catalysis, solar fuels. [3-4*] 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 336-011 CHEM_O L01 Green Inorganic Chemistry W2 Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoelectro catalysis, solar fuels. [3-4*] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214. Lecture In Person Learning Tue (Alternate weeks) 8:00 a.m. - 12:00 p.m.

CHEM_O 336-021 CHEM_O L02 Green Inorganic Chemistry W2 Use of inorganic and organometallic catalysts for sustainable synthesis. Renewable feedstock conversion, selective carbon-hydrogen bond functionalization, biodegradable polymer synthesis, photoelectro catalysis, solar fuels. [3-4*] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214. Lecture In Person Learning Tue (Alternate weeks) 8:00 a.m. - 12:00 p.m.

CHEM_O 403-101 CHEM_O 101 Enzymology W2 BIOC403 Lecture In Person Learning Mon Wed Fri 9:00 a.m. - 10:00 a.m.
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<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
<th>Lecture Hours</th>
<th>Laboratory</th>
<th>Co-op Education Work Experience</th>
<th>Thesis</th>
<th>In Person Learning</th>
<th>Independent Study</th>
<th>Required Pre-requisites</th>
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<td>Special Topics in Chemistry, Lecture Format</td>
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<td>CHEM 448A 102</td>
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<td>CMPE 246 12A</td>
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<td>10.00 a.m. - 12.00 p.m.</td>
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<td>CMPE 246 12B</td>
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<td>CMPE 246 12C</td>
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<td>In Person Learning</td>
<td>Thu</td>
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<td>CMPE 401 001</td>
<td>Deep Learning for Engineers 1</td>
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<td>In Person Learning</td>
<td>Wed</td>
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<td>Co-op Education Work Experience II</td>
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<td>COOP 405 201</td>
<td>Co-op Education Work Experience V</td>
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<td>CORH_O 203-101</td>
<td>Communication in the Sciences</td>
<td>W2</td>
<td>Practice-based course that develops intermediate level communication skills in the sciences. Emphasis on analysis of scientific literacy and communicating science to experts in the discipline and lay audiences, in written, visual, oral, and digital modes. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENGL 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
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<tr>
<td>CORH_O 203-102</td>
<td>Communication in the Sciences</td>
<td>W2</td>
<td>Practice-based course that develops intermediate level communication skills in the sciences. Emphasis on analysis of scientific literacy and communicating science to experts in the discipline and lay audiences, in written, visual, oral, and digital modes. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENGL 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
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<tr>
<td>CORH_O 203-103</td>
<td>Communication in the Sciences</td>
<td>W2</td>
<td>Practice-based course that develops intermediate level communication skills in the sciences. Emphasis on analysis of scientific literacy and communicating science to experts in the discipline and lay audiences, in written, visual, oral, and digital modes. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENGL 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
<td>Tue Thu</td>
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<tr>
<td>CORH_O 204-101</td>
<td>Communications in the Humanities</td>
<td>W2</td>
<td>Practice-based course that develops intermediate level communication skills in the humanities. Emphasis on analysis of humanities literature and communicating the humanities to experts in the discipline and lay audiences, in written, visual, oral, and digital modes. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENGL 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>CORH_O 205-101</td>
<td>Communication in the Social Sciences</td>
<td>W2</td>
<td>Practice-based course that develops intermediate level communication skills in the social sciences. Emphasis on analysis of social science literature and communicating the social sciences to experts in the discipline and lay audiences, in written, visual, oral, and digital modes. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENGL 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>CORH_O 205-102</td>
<td>Communication in the Social Sciences</td>
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<td>Practice-based course that develops intermediate level communication skills in the social sciences. Emphasis on analysis of social science literature and communicating the social sciences to experts in the discipline and lay audiences, in written, visual, oral, and digital modes. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENGL 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>CORH_O 216-101</td>
<td>Communication and Media</td>
<td>W2</td>
<td>Theory and practice of communication about, in and for various media, including digital, textual, audio and/or visual forms. Prerequisite: One of ENG 109, ENG 112, ENG 114, ENG 150, ENG 151, ENGL 153, ENG 155, ENG 156, APSC 176.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>CORH_O 304-001</td>
<td>Persuasive Rhetoric, Public Speaking, and Advocacy</td>
<td>W2</td>
<td>Advanced public speaking, persuasive rhetoric, and advocacy to generate social and community change. Recommended prerequisite: THTR 104. Prerequisite: Third-year standing or permission of the instructor.</td>
<td>Lecture</td>
<td>Hybrid Learning</td>
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<tr>
<td>CORH_O 360-101</td>
<td>Public Memory, Commemoration, and Identity</td>
<td>W2</td>
<td>Critical examination of commemoration 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 CORH 360 OR CULT 360. Prerequisite: 3 credits of 200 level CULT, CORH 204, or CORH 205. Equivalency: CULT 376D.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>CORH_O 499-101</td>
<td>Communication Capstone</td>
<td>W2</td>
<td>Team-conducted project that identifies and addresses a professional, community, or academic topic, demonstrating an awareness of audience and context. Integrates knowledge and skills acquired throughout the certificate program. Prerequisite: 3 credits of CORH certificate courses and third-year standing.</td>
<td>Lecture</td>
<td>Multi-access Learning</td>
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<td>COSC_O 101-101</td>
<td>Digital Citizenshp</td>
<td>W2</td>
<td>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]</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Wed Fri</td>
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<tr>
<td>COSC_O 101-102</td>
<td>Digital Citizenshp</td>
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<td>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]</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<td>COSC_O 101-103</td>
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<td>COSC_O 101-104</td>
<td>Digital Citizenshp</td>
<td>W2</td>
<td>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]</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<td>COSC_O 101-105</td>
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<tr>
<td>COSC_O 101-106</td>
<td>Digital Citizenshp</td>
<td>W2</td>
<td>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]</td>
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<td>COSC 121</td>
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<td>Tue</td>
<td>4:00 p.m. - 6:00 p.m.</td>
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<tr>
<td>COSC 121</td>
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<td>Computer Programming I</td>
<td>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 design of working programs. This course should be followed by COSC 121. [3-2-0]</td>
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<td>Computer Programming II</td>
<td>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 design of working programs. This course should be followed by COSC 121. [3-2-0]</td>
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<td>In Person Learning</td>
<td>Wed</td>
<td>10:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>COSC 121</td>
<td>3</td>
<td>Advanced Programming in the Application of Software Engineering Techniques to the Design and Implementation of Programs Manipulating Complex Data Structures</td>
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<td>Laboratory</td>
<td>In Person Learning</td>
<td>Thu</td>
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<td>COSC 121</td>
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<td>Knowledge and Skills to Navigate the Digital Society</td>
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<td>Laboratory</td>
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<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<td>COSC 121</td>
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<td>COSC 121-1X</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 121-2L</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 121-5M</td>
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<td>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.</td>
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<td>COSC 121-7N</td>
<td>Computer Programming II</td>
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<td>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.</td>
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<td>COSC 122-1O</td>
<td>Computer Programming II</td>
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<td>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.</td>
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<td>COSC 122-2J</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-3P</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-4Q</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-5S</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-6T</td>
<td>Computer Programming II</td>
<td>4</td>
<td>A hands-on introduction to programming and computer-based problem solving and creativity. Experience with application development including storytelling, graphics, games, and networking. [3-2-0] Prerequisite: One of COSC 111, COSC 122.</td>
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<tr>
<td>COSC 122-8U</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<tr>
<td>COSC 122-9V</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<tr>
<td>COSC 122-10W</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<tr>
<td>COSC 122-11X</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-12Y</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-13Z</td>
<td>Computer Programming II</td>
<td>4</td>
<td>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.</td>
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<td>COSC 122-14A</td>
<td>Computer Programming II</td>
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<td>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.</td>
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<td>COSC 122-15B</td>
<td>Computer Programming II</td>
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<td>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.</td>
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<td>COSC 122-16C</td>
<td>Computer Programming II</td>
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<td>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.</td>
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<td>COSC 322-L02</td>
<td>Numerical Analysis</td>
<td>3-2-0</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will be only granted for one of COSC 210 or COSC 222. [1-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<td>COSC 305-L03</td>
<td>Project Management</td>
<td>3-2-0</td>
<td>Numerical techniques for basic mathematical processes and their analysis. Taylor polynomials, root-finding, linear systems, eigenvalues, approximating derivatives, locating minimizers, approximating integrals, solving differential equations. Credit will be granted for only one of COSC 305 or MATH 305. [3-1-0] Prerequisite: All of MATH 200, MATH 221 and either (a) COSC 111 or (b) DATA 301. Equivalency: MATH 305.</td>
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<td>COSC 305-L01</td>
<td>Project Management</td>
<td>3-2-0</td>
<td>Numerical techniques for basic mathematical processes and their analysis. Taylor polynomials, root-finding, linear systems, eigenvalues, approximating derivatives, locating minimizers, approximating integrals, solving differential equations. Credit will be granted for only one of COSC 305 or MATH 305. [3-1-0] Prerequisite: All of MATH 200, MATH 221 and either (a) COSC 111 or (b) DATA 301. Equivalency: MATH 305.</td>
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<td>COSC 310-L01</td>
<td>Software Engineering</td>
<td>3-2-0</td>
<td>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.</td>
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<tr>
<td>COSC 310-L03</td>
<td>Software Engineering</td>
<td>3-2-0</td>
<td>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.</td>
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<td>COSC 310-L04</td>
<td>Software Engineering</td>
<td>3-2-0</td>
<td>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.</td>
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<td>COSC 322-L01</td>
<td>Introduction to Artificial Intelligence</td>
<td>3-2-0</td>
<td>Introduction to artificial intelligence. Credit will be granted for only one of COSC 322 or COSC 522. [3-2-0] Prerequisite: All of COSC 221, COSC 222.</td>
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<td>COSC 322-L02</td>
<td>Introduction to Artificial Intelligence</td>
<td>3-2-0</td>
<td>AI and intelligent agents; state space search; game playing agents; logic and knowledge-based agents; constraint programming; planning; reasoning and decision-making under uncertainty; machine learning; natural language understanding. Credit will be granted for only one of COSC 322 or COSC 522. [3-2-0] Prerequisite: All of COSC 221, COSC 222.</td>
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<tr>
<td>COSC 322-L03</td>
<td>Introduction to Artificial Intelligence</td>
<td>3-2-0</td>
<td>AI and intelligent agents; state space search; game playing agents; logic and knowledge-based agents; constraint programming; planning; reasoning and decision-making under uncertainty; machine learning; natural language understanding. Credit will be granted for only one of COSC 322 or COSC 522. [3-2-0] Prerequisite: All of COSC 221, COSC 222.</td>
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<td>COSC 322-L04</td>
<td>Introduction to Artificial Intelligence</td>
<td>3-2-0</td>
<td>AI and intelligent agents; state space search; game playing agents; logic and knowledge-based agents; constraint programming; planning; reasoning and decision-making under uncertainty; machine learning; natural language understanding. Credit will be granted for only one of COSC 322 or COSC 522. [3-2-0] Prerequisite: All of COSC 221, COSC 222.</td>
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<td>COSC 322-L05</td>
<td>Introduction to Artificial Intelligence</td>
<td>3-2-0</td>
<td>AI and intelligent agents; state space search; game playing agents; logic and knowledge-based agents; constraint programming; planning; reasoning and decision-making under uncertainty; machine learning; natural language understanding. Credit will be granted for only one of COSC 322 or COSC 522. [3-2-0] Prerequisite: All of COSC 221, COSC 222.</td>
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Laboratory: In Person Learning
Mon 8:00 a.m. - 10:00 a.m.

Laboratory: In Person Learning
Mon 9:30 a.m. - 11:00 a.m.

Laboratory: In Person Learning
Mon 11:00 a.m. - 12:00 p.m.

Laboratory: In Person Learning
Fri 11:00 a.m. - 12:00 p.m.

Laboratory: In Person Learning
Mon Thu 9:30 a.m. - 11:00 a.m.

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

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

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

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

Laboratory: In Person Learning
Tue Thrs 3:30 p.m. - 5:00 p.m.
COSC_O 328-001  COSC_O 001  Introduction to Networks  W2  
The five-layer Internet architecture using TCP/IP: application, transport, network, link, and physical. Topics include web protocols, network programming, routing, addressing, congestion control, error handling. Ethernet, wireless networks, security, multimedia transmission, and network management. [3-0-0]  
Prerequisite: All of COSC 211, COSC 222. Lecture  In Person Learning  Wed Fri  2:00 p.m. - 3:30 p.m.

COSC_O 341-101  COSC_O 101  Human Computer Interaction  W2  
History of human-computer interaction. Basic design principles, user-centered design, user task analysis, interaction models, input and output devices, graphical interface design, prototyping, and evaluation. [3-0-0]  
Prerequisite: One of COSC 111, COSC 121, COSC 123, DATA 301. Lecture  In Person Learning  Mon Wed  9:30 a.m. - 11:00 a.m.

COSC_O 360-001  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Lecture  In Person Learning  Wed Fri  8:00 a.m. - 9:30 a.m.

COSC_O 360-L01  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Fri  10:00 a.m. - 12:00 p.m.

COSC_O 360-L02  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Tue  8:00 a.m. - 10:00 a.m.

COSC_O 360-L03  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Wed  12:00 p.m. - 2:00 p.m.

COSC_O 360-L04  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Fri  10:00 a.m. - 12:00 p.m.

COSC_O 360-L05  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Mon  4:00 p.m. - 6:00 p.m.

COSC_O 360-L06  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Mon  4:00 p.m. - 6:00 p.m.

COSC_O 360-L07  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Thu  10:00 a.m. - 12:00 p.m.

COSC_O 360-L08  COSC_O 001  Web Programming  W2  
Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries. [3-2-0]  
Prerequisite: All of COSC 121, COSC 304. and third-year standing. Laboratory  In Person Learning  Thu  10:00 a.m. - 12:00 p.m.

COSC_O 360-L09  COSC_O 001  Web Programming  W2  
Fundamental concepts in constructing database systems including file organizations, storage management, system architectures, query processing/optimization, transaction management, recovery, and concurrency control. Additional topics may include distributed databases, mobile databases, and integration. Credit will be granted for only one of COSC 404 or COSC 504. [3-0-0]  
Prerequisite: COSC 304. and third-year standing. Lecture  In Person Learning  Tue Thu  8:00 a.m. - 9:30 a.m.

COSC_O 407-101  COSC_O 101  Introduction to Parallel Computing  W2  
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: One of COSC 222, COSC 230. Lecture  In Person Learning  Tue Thu  6:30 p.m. - 8:00 p.m.

COSC_O 407-L01  COSC_O 101  Introduction to Parallel Computing  W2  
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: One of COSC 222, COSC 230. Laboratory  In Person Learning  Tue  10:00 a.m. - 12:00 p.m.

COSC_O 407-L02  COSC_O 101  Introduction to Parallel Computing  W2  
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: One of COSC 222, COSC 230. Laboratory  In Person Learning  Wed  2:00 p.m. - 4:00 p.m.

COSC_O 407-L03  COSC_O 101  Introduction to Parallel Computing  W2  
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: One of COSC 222, COSC 230. Laboratory  In Person Learning  Thu  12:00 p.m. - 2:00 p.m.
Topics in Computer Science
- Database System Implementation: Constructing database systems: file organizations, storage management, system architectures, querying processing, optimization, transaction management, recovery, and concurrency control. Credit will be granted for only one of COSC 404 or COSC 514.

- Computer Vision: 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.

- Advanced Algorithms: Algorithm design, analysis, and application. Algorithms: graph theory, parameterization, approximation, and randomized techniques. Algorithms for computational-hard problems and problems involving large-scale networks and/or massive datasets. Credit will be granted for only one of COSC 320 or COSC 520.

- Algorithm Design and Implementation of Parallel Programs including Theoretical Models: Design and implementation of parallel programs including theoretical models, parallel architectures (distributed, multicore, GPU), and standard parallel libraries. Credit will be granted for only one of COSC 407 or COSC 507. [3-0-2] Prerequisite: One of COSC 222, COSC 230.

- Introduction to Parallel Computing: 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.
CRWR_O 260-001  CRWR_O  001  Theory and Practice of Creative Writing  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 CRWR 384, CRWR 384, THTR 384 or CULT 308. [3-0-0] Prerequisite: 6 credits of Creative Writing and/or Theatre. For students without prerequisites, portfolio submission is also required. Equivalency: THTR 384, CULT 384

CRWR_O 384-101  CRWR_O  101  Spoken Word  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. [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 385-101  CRWR_O  101  Writing for Children  W2

CRWR_O 470-B_101  CRWR_O  B_101 Portfolio  W2

CRWR_O 472-101  CRWR_O  101  Editing and Publishing  W2

For Creative Writing majors, develops specialized skills in editing and publishing for success in professional practice. Coursework includes experiential learning with solo and group projects. [3-2-2] Prerequisite: Third-year standing.

CRWR_O 473-001  CRWR_O  001  Writing and Community Learning  W2

Applied community learning aspects of creative writing. Develops specialized skills for success in professional practice by working in interdisciplinary and collaborative teams with community partners. Field trips will be required. [0-2-2] Prerequisite: Third-year standing.

CRWR_O 475-001  CRWR_O  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. [2-2-0]

CULT_O 100-101  CULT_O  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]

CULT_O 100-102  CULT_O  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]

CULT_O 100-103  CULT_O  103 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]


Key concepts and methods across the History of cultural studies including analysis of consumer society, identity, space, and memory. [3-0-0]

CULT_O 101-102  CULT_O  102 Cultural Studies Practices  W2

Key concepts and methods across the History of cultural studies including analysis of consumer society, identity, space, and memory. [3-0-0]

CULT_O 101-103  CULT_O  103 Cultural Studies Practices  W2

Key concepts and methods across the History of cultural studies including analysis of consumer society, identity, space, and memory. [3-0-0]

CULT_O 210-101  CULT_O  101 Reading Screens  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 215. [3-0-3] Prerequisite: 3 credits of first-year CULT and 3 credits of first-year ENGL. Equivalency: ENGL215

CULT_O 272-001  CULT_O  001 Feminism and Environment  W2

Examines 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 SUS104. Equivalency: GWST272

CULT_O 272-001  CULT_O  001 Feminism and Environment  W2

Examines 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 SUS104. Equivalency: GWST272


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 250. [3-0-0] Prerequisite: 3 credits of first-year CULT and 3 credits of first-year ENGL. Equivalency: ENGL250

CULT_O 312-A_002  CULT_O  A_002 Internet Culture  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 312, DHU 312, or any combination thereof. Credit will be granted for only one of CULT 312 and DHU 312 when the subject matter is of the same nature. Prerequisite: Third-year standing. Equivalency: DHU312

CULT_O 317-001  CULT_O  001 Digital Documentary Production  W2

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 VISA 106, VISA 261, FILM 261 and third-year standing or permission of the instructor. Equivalency: FILM 371

CULT_O 351-001  CULT_O  001 Settler Studies, Literature, and Culture  W2

Approaches to the interdisciplinary field of settler colonial studies as Canadian and comparative contexts in relation to literature, film, and other forms of cultural production. Examines the role of representation, narrative, and discourse in settlement, colonization, and decolonization. Credit will be granted for only one of ENGL 385 or CULT 351. Prerequisite: 3 credits of 200-level CULT. CULT 250 or ENGL 234 is recommended. Equivalency: ENGL 385

CRWR_O 380-101  CRWR_O  101  Public Memory, Commemoration, and Identity  W2

CRWR Majors except with permission from instructor. [3-3-0] Prerequisite: Two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors, non-minors, and non-portfolio submission is also required.

CRWR_O 386-101  CRWR_O  101 Public Memory, Commemoration, and Identity  W2

Critical examination of commemoration 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 360 or CORH 360. Prerequisite: Third-year standing. CULT 215, CULT 230, CULT 250, or CULT 275 recommended. Equivalency: CORH360

CULT_O 380-101  CULT_O  101 Public Memory, Commemoration, and Identity  W2

CRWR Majors except with permission from instructor. [3-3-0] Prerequisite: Two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors, non-minors, and non-portfolio submission is also required.

CRWR_O 386-101  CRWR_O  101 Public Memory, Commemoration, and Identity  W2

CRWR Majors except with permission from instructor. [3-3-0] Prerequisite: Two of CRWR 210, CRWR 216, CRWR 217, CRWR 218, CRWR 219, CRWR 250, CRWR 260. For non-majors, non-minors, and non-portfolio submission is also required.
CULT_362-B_002  CULT_O  B  B_002  Advanced Practice in Photography  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, VISA 362, or any combination thereof to their degree. Prerequisite: All of VISA 244, VISA 256. Or permission of the instructor. Note: for VISA 244, CULT students require permission of instructor. Equivalency: VISA 362  Lecture  In Person Learning  Tue  5:00 p.m. - 9:00 p.m.

CULT_382-B_002  CULT_O  B  B_002  Advanced Practice in Media Arts  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, VISA 382, or any combination thereof to their degree. Prerequisite: One of VISA 206, VISA 266, VISA 268, VISA 269, VISA 271, or permission of the instructor. Equivalency: VISA 382  Lecture  In Person Learning  Fri  10:00 a.m. - 2:00 p.m.

CULT_384-101  CULT_O  101  Spoken Word  W2  

Advanced workshop in writing and performing Spoken Word texts. Credit will be granted for only one of CULT 384, CULT 308, CRWR 384 or THTR 384. [3-0-0] Prerequisite: 6 credits of Creative Writing and/or Theatre. Third-year standing. Equivalency: THTR 384, CRWR 384  Lecture  In Person Learning  Wed  11:00 a.m. - 2:00 p.m.

CULT_400-L_101  CULT_O  L  L_101  Topics in Popular Culture  W2  

Focus on media such as music, film, music video, 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 200-level CULT. CULT 210, CULT 211, and/or CULT 270 recommended. Equivalency: ENGL493  Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

CULT_400-M_101  CULT_O  M  M_101  Topics in Popular Culture  W2  

Focus on media such as music, film, music video, 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 200-level CULT. CULT 210, CULT 211, and/or CULT 270 recommended. Equivalency: ENGL493  Lecture  In Person Learning  Fri  8:00 a.m. - 11:00 a.m.

CULT_400-N_101  CULT_O  N  N_101  Topics in Popular Culture  W2  

Focus on media such as music, film, music video, 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 200-level CULT. CULT 210, CULT 211, and/or CULT 270 recommended. Equivalency: ENGL493  Lecture  In Person Learning  Wed  11:00 a.m. - 2:00 p.m.

CULT_401-A_101  CULT_O  A  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. 

CULT_460-101  CULT_O  101  Posthumanism and Critical Animal 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. 

CULT_491-101  CULT_O  101  Black Intellectual Traditions  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 own transportation to/from Kelowna-area required off-campus meetings. 65 contact hours of class and community partner interaction. Prerequisite: Third-year standing; students must complete an application; permission granted by the Cultural Studies program. Preference will be given to students enrolled as Major, Combined Major, or Minor in CULT. 

CULT_499-101  CULT_O  101  Community-Engaged Research in Cultural Studi 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. Independent Study  Hybrid Learning  Fri  2:00 p.m. - 5:00 p.m.

DATA_101-101  DATA_O  101  Making Predictions with Data  W2  

Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

DATA_101-102  DATA_O  101  Making Predictions with Data  W2  

Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Lecture  In Person Learning  Wed Fri  2:00 p.m. - 3:30 p.m.

DATA_101-L2A  DATA_O  L2A  Making Predictions with Data  W2  

Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Laboratory  In Person Learning  Thu  8:00 a.m. - 9:00 a.m.

DATA_101-L2B  DATA_O  L2B  Making Predictions with Data  W2  

Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Laboratory  In Person Learning  Mon  9:00 a.m. - 10:00 a.m.

DATA_101-L2C  DATA_O  L2C  Making Predictions with Data  W2  

Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Laboratory  In Person Learning  Fri  1:00 p.m. - 2:00 p.m.

DATA_101-L2D  DATA_O  L2D  Making Predictions with Data  W2  

Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Laboratory  In Person Learning  Wed  12:00 p.m. - 1:00 p.m.

DATA_301-101  DATA_O  101  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 301. [3-2-0] Prerequisite: Third-year standing. 

Laboratory  In Person Learning  Wed Fri  12:30 p.m. - 2:00 p.m.

DATA_301-L2A  DATA_O  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 301. [3-2-0] Prerequisite: Third-year standing. 

Laboratory  In Person Learning  Fri  10:00 a.m. - 12:00 p.m.
DATA O 301-L2B DATA O 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 CSCS 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Laboratory In Person Learning Tue 12:00 p.m. - 2:00 p.m.

DATA O 301-L2C DATA O 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 CSCS 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Laboratory In Person Learning Fri 8:00 a.m. - 10:00 a.m.

DATA O 301-L2D DATA O L2D 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 CSCS 301, DATA 301 or DATA 501. [3-2-0] Prerequisite: Third-year standing. Laboratory In Person Learning Thu 8:00 a.m. - 10:00 a.m.

DATA O 315-101 DATA O 101 Applied Time Series and Forecasting W2 Trends, stationarity and nonstationary time series models, forecasting, seasonal models. [3-0-0] Prerequisite: One of STAT 205, STAT 230. Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

DATA O 407-101 DATA O 101 Sampling and Design W2 Planning/practice of data collection. Pros/cons of both observational and experimental data. Survey samples: random sampling; bias and variance; unequal probability sampling; systematic, multistage, and stratified sampling; ratio and regression estimators. Experimental design: simple one-way comparisons; designs with randomization restrictions including blocking, split-plots, nested and repeated measures designs. Credit will be granted for only one of DATA 407 or STAT 507. [3-1-0] Prerequisite: One of STAT 205, 230, PSY 372, BOL 202. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

DATA O 410-101 DATA O 101 Regression and Generalized Linear Models W2 Regression, linear models, generalized linear models, additive models, generalized additive models, mixed models, theory and numerical performance. Credit will be granted for only one of DATA 410 or STAT 538. [3-0-0] Prerequisite: DATA 310. Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

DATA O 448-A 102 DATA O A A 102 Directed Studies in Data Science W2 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

DATA O 448-B 101 DATA O C C 101 Directed Studies in Data Science W2 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

DATA O 534-101 DATA O 101 Web and Cloud Computing W2 Parallel and cloud computing architectures and program deployment. Restricted to students in the MDS program. Parallel and cloud computing architectures and program deployment. Restricted to students in the MDS program. Laboratory In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

DATA O 534-104 DATA O 101 Web and Cloud Computing W2 Parallel and cloud computing architectures and program deployment. Restricted to students in the MDS program. Laboratory In Person Learning Mon 12:30 p.m. - 4:30 p.m.

DATA O 534-T1A DATA O T1A Web and Cloud Computing W2 Parallel and cloud computing architectures and program deployment. Restricted to students in the MDS program. Discussion In Person Learning Mon 8:30 a.m. - 9:30 a.m.

DATA O 542-101 DATA O 101 Data Wrangling W2 Manipulation of data using software tools. Data conversion, filtering, sorting, grouping, cleaning, parsing. Automation. Restricted to students in the MDS program. Prerequisite: All of DATA 532, DATA 540, DATA 541. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

DATA O 542-L01 DATA O L01 Data Wrangling W2 Manipulation of data using software tools. Data conversion, filtering, sorting, grouping, cleaning, parsing. Automation. Restricted to students in the MDS program. Prerequisite: All of DATA 532, DATA 540, DATA 541. Laboratory In Person Learning Thu 12:30 p.m. - 4:30 p.m.

DATA O 542-T1A DATA O T1A Data Wrangling W2 Manipulation of data using software tools. Data conversion, filtering, sorting, grouping, cleaning, parsing. Automation. Restricted to students in the MDS program. Prerequisite: All of DATA 532, DATA 540, DATA 541. Discussion In Person Learning Thu 8:30 a.m. - 9:30 a.m.

DATA O 550-001 DATA O 001 Dataavi I W2 Data visualization to produce graphs and images. Advanced data analysis on spreadsheets. Restricted to students in the MDS program. Prerequisite: All of DATA 530, DATA 531. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

DATA O 550-L01 DATA O L01 Dataavi I W2 Data visualization to produce graphs and images. Advanced data analysis on spreadsheets. Restricted to students in the MDS program. Prerequisite: All of DATA 530, DATA 531. Laboratory In Person Learning Tue Thu 12:30 p.m. - 4:30 p.m.

DATA O 550-T1A DATA O T1A Dataavi I W2 Data visualization to produce graphs and images. Advanced data analysis on spreadsheets. Restricted to students in the MDS program. Prerequisite: All of DATA 530, DATA 531. Discussion In Person Learning Thu 8:30 a.m. - 9:30 a.m.

DATA O 551-101 DATA O 101 Dataavi II W2 Data visualization using business intelligence and data analysis software. Interactive visualization. Production of visualizations for mobile and web. Restricted to students in the MDS program. Prerequisite: All of DATA 534, DATA 543, DATA 550. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

DATA O 551-L01 DATA O L01 Dataavi II W2 Data visualization using business intelligence and data analysis software. Interactive visualization. Production of visualizations for mobile and web. Restricted to students in the MDS program. Prerequisite: All of DATA 534, DATA 543, DATA 550. Laboratory In Person Learning Wed 12:30 p.m. - 4:30 p.m.

DATA O 551-T1A DATA O T1A Dataavi II W2 Data visualization using business intelligence and data analysis software. Interactive visualization. Production of visualizations for mobile and web. Restricted to students in the MDS program. Prerequisite: All of DATA 534, DATA 543, DATA 550. Discussion In Person Learning Wed 8:30 a.m. - 9:30 a.m.

DATA O 552-001 DATA O 001 Communication and Argumentation W2 Interpretation of data. Argumentation: hypothesis, claim, evidence and inference. Model limitations: bias, validity, reliability, sensitivity analysis. Communication of recommendations to decision-makers. Restricted to students in the MDS program. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

DATA O 552-101 DATA O L01 Communication and Argumentation W2 Interpretation of data. Argumentation: hypothesis, claim, evidence and inference. Model limitations: bias, validity, reliability, sensitivity analysis. Communication of recommendations to decision-makers. Restricted to students in the MDS program. Laboratory In Person Learning Mon 12:30 p.m. - 4:30 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>DATA 552</td>
<td>T1A</td>
<td>Communication and Argumentation</td>
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<td>Interpretation of data. Argumentation: hypothesis, claim, evidence and inference. Model limitations: bias, validity, reliability, sensitive analysis. Communication of recommendations to decision-makers. Restricted to students in the MDS program.</td>
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<tr>
<td>DATA 572</td>
<td>001</td>
<td>Supervised Learning</td>
<td>W2</td>
<td>Analysis of data with categorical responses. Logistic regression, k-nearest-neighbours classification, discriminant analysis, decision trees and random forests. Restricted to students in the MDS program.</td>
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<td>DATA 573</td>
<td>T1A</td>
<td>Unsupervised and Semi-supervised Learning</td>
<td>W2</td>
<td>Analyses for data with unknown responses. Distance measures, hierarchical clustering, k-means, mixture models. Restricted to students in the MDS program.</td>
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<td>DATA 573</td>
<td>T1A</td>
<td>Unsupervised and Semi-supervised Learning</td>
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<td>Analyses for data with unknown responses. Distance measures, hierarchical clustering, k-means, mixture models. Restricted to students in the MDS program.</td>
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<td>DATA 582</td>
<td>01</td>
<td>Bayesian Inference</td>
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<td>Introduction to Bayesian paradigm and tools for Data Science. Topics include Bayes theorem, prior, likelihood and posterior. A detailed analysis of the cases of binomial, normal samples, normal linear regression models. A significant focus will be on computational aspects of Bayesian problems using software packages. Restricted to students in the MDS program.</td>
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<td>DATA 583</td>
<td>01</td>
<td>Advanced Predictive Modelling</td>
<td>W2</td>
<td>Splines. Smoothing. Generalized linear models. Generalized additive models. An introduction to mixed models. Restricted to students in the MDS program.</td>
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<td>DATA 583</td>
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<td>DATA 585</td>
<td>01</td>
<td>Optimization</td>
<td>W2</td>
<td>Modelling using mathematical programming. Fundamental continuous and discrete optimization algorithms. Optimization software for small to medium scale problems. Optimization algorithms for data science. Restricted to students in the MDS program.</td>
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<td>Optimization</td>
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<td>Advanced Machine Learning</td>
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<td>Neural networks, backpropagation, deep learning. Restricted to students in the MDS program.</td>
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<td>DATA 589</td>
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<td>Special Topic</td>
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<td>Advanced or specialized topic in Data Science with applications to specific data sets. Restricted to students in the MDS program.</td>
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<td>ENGL 155</td>
<td>01</td>
<td>Writing and Making with Technology in the Humanities</td>
<td>W2</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
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<tr>
<td>ENGL 155</td>
<td>T2A</td>
<td>Writing and Making with Technology in the Humanities</td>
<td>W2</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
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<tr>
<td>DIHU_O 155-T2B</td>
<td>T2B</td>
<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
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<tr>
<td>DIHU_O 155-T2C</td>
<td>T2C</td>
<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
</tr>
<tr>
<td>DIHU_O 155-T2D</td>
<td>T2D</td>
<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
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<tr>
<td>DIHU_O 155-T2E</td>
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<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
</tr>
<tr>
<td>DIHU_O 155-T2F</td>
<td>T2F</td>
<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
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<tr>
<td>DIHU_O 155-T2G</td>
<td>T2G</td>
<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
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<td>DIHU_O 155-T2H</td>
<td>T2H</td>
<td>Discussion</td>
<td>Writing and Making with Technology in the Humanities</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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155</td>
</tr>
<tr>
<td>DIHU_O 312-A_002</td>
<td>A A_002</td>
<td>Lecture</td>
<td>Internet Culture</td>
<td>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 DIHU 312, CULT 312, or any combination thereof. Credit will be granted for only one of DIHU 312 and CULT 312 when the subject matter is the same nature. Prerequisite: Third-year standing. Equivalency: CULT312</td>
</tr>
<tr>
<td>DIHU_O 375-001</td>
<td>001</td>
<td>Lecture</td>
<td>Encountering India: The Age of the Moghuls</td>
<td>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 Mughal Empire, the roles of Hindustan, Islam, and Sikhism, 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 DIHU 375, ARTH 375, or WRLD 375. Prerequisite: Third-year standing. Equivalency: ARTH 375, WRLD 375</td>
</tr>
<tr>
<td>DIHU_O 409_B_101</td>
<td>B B_101</td>
<td>Lecture</td>
<td>Topics in Digital Humanities</td>
<td>Study of a particular topic in digital humanities. With different topics this course may be taken more than once for credit. Credit will be granted for only one of DIHU 409, CULT 409 and ENGL 409 when the subject matter is of the same nature. Prerequisite: 3 credits of 100-level CULT, DIHU, ENGL, or FILM 100, and third-year standing. Equivalency: ENGL409, CULT409</td>
</tr>
<tr>
<td>EAP_O 104-101</td>
<td>101</td>
<td>Lecture</td>
<td>English for Academic Purposes Level IV</td>
<td>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 (240 hours). Prerequisite: Successful completion of EAP 103 or minimum English language competence level (see English Language Proficiency Tests at <a href="https://okanagan.calendar.sbc.ca/admissions/english-language-admission-standards/english-language-proficiency-tests-and-programs">https://okanagan.calendar.sbc.ca/admissions/english-language-admission-standards/english-language-proficiency-tests-and-programs</a>). Registration limited to students in the English Foundation Program. Equivalency: ENGL104, CULT104</td>
</tr>
<tr>
<td>ECON_O 101-101</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Principles of Microeconomics</td>
<td>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. [3-0-0]</td>
</tr>
<tr>
<td>ECON_O 102-101</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Principles of Macroeconomics</td>
<td>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]</td>
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<td>ECON_O 102-102</td>
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<tr>
<td>ECON_O 204-101</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Intermediate Microeconomic Analysis</td>
<td>Microtheory 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</td>
</tr>
<tr>
<td>ECON_O 204-104</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Intermediate Microeconomic Analysis</td>
<td>Microtheory 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</td>
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<td>ECON_O 204-107</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Intermediate Microeconomic Analysis</td>
<td>Microtheory 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</td>
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<tr>
<td>ECON_O 204-110</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Intermediate Microeconomic Analysis</td>
<td>Microtheory 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</td>
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<tr>
<td>ECON_O 205-101</td>
<td>ECON_O</td>
<td>Lecture</td>
<td>Intermediate Macroeconomic Analysis</td>
<td>Macroeconomic 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</td>
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<td>ECON O 205-T2B</td>
<td>Intermediate Macroeconomic Analysis</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[2-0-0] Prerequisite: ECON 102 and one of MATH 100, MATH 116. Credit will be granted for only one of ECON 225 or ECON 391D.</td>
</tr>
<tr>
<td>ECON O 221-101</td>
<td>Introduction to Strategic Thinking</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
</tr>
<tr>
<td>ECON O 225-T2B</td>
<td>Data and Statistics for Economics</td>
<td>Online Learning Discussion</td>
<td>Lecture</td>
<td>[2-0-0] Prerequisite: One of ECON 101, ECON 102.</td>
</tr>
<tr>
<td>ECON O 295-101</td>
<td>Managerial Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
</tr>
<tr>
<td>ECON O 308-101</td>
<td>Intermediate Microeconomics II</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[3-0-0] Prerequisite: ECON 204.</td>
</tr>
<tr>
<td>ECON O 319-101</td>
<td>Introduction to Mathematical Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[3-0-0] Prerequisite: All of ECON 101, ECON 102 and one of MATH 101, MATH 142.</td>
</tr>
<tr>
<td>ECON O 328-101</td>
<td>Methods of Empirical Research</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
</tr>
<tr>
<td>ECON O 328-T2A</td>
<td>Methods of Empirical Research</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>[3-0-0] Prerequisite: All of ECON 101, ECON 102.</td>
</tr>
<tr>
<td>ECON O 329-101</td>
<td>World Economy since 1800</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>Development of the world economy, from the onset of the Industrial Revolution around 1800 to the present.</td>
</tr>
<tr>
<td>ECON O 339-101</td>
<td>Economics of Technological Change</td>
<td>In Person Learning 101</td>
<td>Lecture</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.</td>
</tr>
<tr>
<td>ECON O 345-101</td>
<td>Money and Banking</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>The government plays a pervasive role in the Canadian economy. The powerful tools of government policy - taxation, spending, borrowing, and regulation - affect the economic life of every Canadian.</td>
</tr>
<tr>
<td>ECON O 352-101</td>
<td>Public Sector Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>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.</td>
</tr>
<tr>
<td>ECON O 355-101</td>
<td>International Trade</td>
<td>In Person Learning 101</td>
<td>Lecture</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.</td>
</tr>
<tr>
<td>ECON O 356-101</td>
<td>International Finance</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>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.</td>
</tr>
<tr>
<td>ECON O 360-101</td>
<td>Labour Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</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.</td>
</tr>
<tr>
<td>ECON O 363-101</td>
<td>Health Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>The system of social security, insurance, health risk behaviours, and public policy and health outcomes. Credit will be granted for only one of ECON 363 or ECON 391V.</td>
</tr>
<tr>
<td>ECON O 391-A,101</td>
<td>Topics in Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>Examination of selected topics in current economic theory and/or policy. Topics vary each time the course is offered.</td>
</tr>
<tr>
<td>ECON O 391-C,101</td>
<td>Topics in Economics</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>Examination of selected topics in current economic theory and/or policy. Topics vary each time the course is offered.</td>
</tr>
<tr>
<td>EDLL O 006-001</td>
<td>Culturally Responsive Leadership in a Diverse So</td>
<td>Online Learning Seminar</td>
<td>Lecture</td>
<td>Theoretical understandings 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.</td>
</tr>
<tr>
<td>EDUC O 100-101</td>
<td>Issues in Education</td>
<td>In Person Learning 101</td>
<td>Lecture</td>
<td>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 equality, community, and individual rights and freedoms.</td>
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</tbody>
</table>
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 equality, 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) 5 on the UPL; c) a passing grade (c) in ENG 090; d) an acceptable equivalent. For a list of equivalent options consult the Current Students website at students.ok.ubc.ca/courses-money-enrolment/registration/first-year-english/. Lecture In Person Mon Wed 9:30 a.m. - 11:00 a.m.

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 160 or EDUC 160. 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 Mon Wed 2:00 p.m. - 3:30 p.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. - 8:00 p.m.

Examines the nature of curriculum focusing on the humanities and languages. Opportunities and challenges of developing curriculum for schools are considered within contemporary political, legal, moral, administrative, and policy contexts. Pass/Fail. Prerequisite: All of EDUC 431, EDUC 440. Lecture In Person Learning Mon Tue Wed Thu Fri 8:00 a.m. - 5:30 p.m.

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.

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 constructs practices in particular ways, using specific strategies, resources, and lesson sequences. Pass/Fail. Prerequisite: All of EDUC 440, EDUC 431. Corequisite: EDUC 436. Experiential Lecture In Person Learning Arranged Arranged

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 inquiry. Lecture In Person Learning Sat (Alternate weeks) 9:00 a.m. - 4:00 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 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 Lecture In Person Learning Arranged Arranged

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

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.

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.

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

Earth systems and environment: atmosphere, climate, water cycle, oceans, surface water, groundwater, earth surface processes, soils, and biogeochemical cycling. Applications of environmental science to solving modern environmental problems. [3-0-0] Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

Earth systems and environment: atmosphere, climate, water cycle, oceans, surface water, groundwater, earth surface processes, soils, and biogeochemical cycling. Applications of environmental science to solving modern environmental problems. [3-0-0] Lecture In Person Learning Wed 11:00 a.m. - 2:00 p.m.

Earth systems and environment: atmosphere, climate, water cycle, oceans, surface water, groundwater, earth surface processes, soils, and biogeochemical cycling. Applications of environmental science to solving modern environmental problems. [3-0-0] Lecture In Person Learning Wed 11:00 a.m. - 2:00 p.m.

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. - 3:30 p.m.

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 Wed 8:00 a.m. - 10:00 a.m.

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 Lecture In Person Learning Mon 12:00 p.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>EESC_O 201</td>
<td>In Person Learning</td>
<td>101</td>
<td>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.</td>
</tr>
<tr>
<td>EESC_O 201</td>
<td>In Person Learning</td>
<td>101</td>
<td>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 8:00 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>EESC_O 201</td>
<td>In Person Learning</td>
<td>102</td>
<td>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.</td>
</tr>
<tr>
<td>EESC_O 205</td>
<td>In Person Learning</td>
<td>001</td>
<td>Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasizes 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 112, EESC 121 or (b) all of GEOG 108, GEOG 209 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.</td>
</tr>
<tr>
<td>EESC_O 205</td>
<td>In Person Learning</td>
<td>001</td>
<td>Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasizes 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 121 or (b) all of GEOG 108, GEOG 209 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.</td>
</tr>
<tr>
<td>EESC_O 205</td>
<td>In Person Learning</td>
<td>002</td>
<td>Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasizes 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 121 or (b) all of GEOG 108, GEOG 209 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.</td>
</tr>
<tr>
<td>EESC_O 212</td>
<td>Introduction to Hydrology</td>
<td>101</td>
<td>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 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: GEOG200 Lecture In Person Learning Mon Wed 11:00 a.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>EESC_O 212</td>
<td>Introduction to Hydrology</td>
<td>102</td>
<td>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 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: GEOG200 Laboratory In Person Learning Wed 6:30 p.m. - 9:30 p.m.</td>
</tr>
<tr>
<td>EESC_O 212</td>
<td>Introduction to Hydrology</td>
<td>101</td>
<td>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 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: GEOG200 Laboratory In Person Learning Fri 2:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>EESC_O 213</td>
<td>Introductory Forest Science and Management</td>
<td>001</td>
<td>Global forests, classification, silviculture, forest tenure systems, forest policy evolution, forest regulations, and the profession. Overview of forest disturbance impacts, eco-facility, sustainable forest management, eco-certification, the role of information technologies and research. [3-0-0] Prerequisite: Either (a) two of BIOL 125, 126, 201, EESC 101, EESC 111, EESC 112, EESC 114, GEOG 108, GEOG 209 or (b) two of BIOI 125, EESC 111, EESC 112, GEOG 108, GEOG 209, SST 200 or (c) one of BIOI 201, BIOI 210, GEOG 207. Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>EESC_O 304</td>
<td>Anthropogenic Climate Change</td>
<td>101</td>
<td>Functional processes and reactions of our living planet. Cycles of materials and energy among the atmosphere, lithosphere, and terrestrial aquatic ecosystems. Case studies on the degradation of ecosystem function from anthropogenic alterations of natural cycles. [3-0-0] Prerequisite: One of CHEM 113, CHEM 123 and either (a) two of EESC 101, EESC 111, EESC 112, EESC 121 or (b) all of GEOG 108, GEOG 109 or (c) one of BIOI 201, BIOI 203 or (d) one of CHEM 301, CHEM 302. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.</td>
</tr>
<tr>
<td>EESC_O 309</td>
<td>Global Biogeochemistry</td>
<td>101</td>
<td>Functional processes and reactions of our living planet. Cycles of materials and energy among the atmosphere, lithosphere, and terrestrial aquatic ecosystems. Case studies on the degradation of ecosystem function from anthropogenic alterations of natural cycles. [3-0-0] Prerequisite: One of EESC 212 or GEOG 200. [3-3-0] Prerequisite: Either (a) two of EESC 111, EESC 200. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>EESC_O 315</td>
<td>Environmental Impact Assessment: Techniques</td>
<td>101</td>
<td>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: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. EESC/GEOG 314 is recommended. Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.</td>
</tr>
<tr>
<td>EESC_O 315</td>
<td>Environmental Impact Assessment: Techniques</td>
<td>101</td>
<td>Practical techniques and methods for environmental impact assessment. Technical approaches, evaluation and estimation tools, and project management skills used for environmental assessment work. [3-2-0] 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 Mon Wed 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>EESC_O 315</td>
<td>Environmental Impact Assessment: Techniques</td>
<td>102</td>
<td>Practical techniques and methods for environmental impact assessment. Technical approaches, evaluation and estimation tools, and project management skills used for environmental assessment work. [3-2-0] Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. EESC/GEOG 314 is recommended. Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.</td>
</tr>
<tr>
<td>EESC_O 350</td>
<td>Geophysics</td>
<td>001</td>
<td>Instrumentation, application, and developments of gravity, magnetic, electromagnetic, electrical and seismic methods in the exploration for mineral and energy resources and in environmental and engineering applications. [3-3-0] Prerequisite: Either (a) one of MATH 101, MATH 103 and one of EESC 111, EESC 121 and one of PHYS 121, PHYS 122; or (b) ENGR 340. Third-year standing. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.</td>
</tr>
<tr>
<td>EESC_O 350</td>
<td>Geophysics</td>
<td>012</td>
<td>Instrumentation, application, and developments of gravity, magnetic, electromagnetic, electrical and seismic methods in the exploration for mineral and energy resources and in environmental and engineering applications. [3-3-0] Prerequisite: Either (a) one of MATH 101, MATH 103 and one of EESC 111, EESC 121 and one of PHYS 121, PHYS 122; or (b) ENGR 340. Third-year standing. Laboratory In Person Learning Wed 3:30 p.m. - 6:30 p.m.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<td>EESC_356-001</td>
<td>Stratigraphy and Sedimentology</td>
<td>W2</td>
<td>Lecture</td>
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<td>EESC_356-01</td>
<td>Stratigraphy and Sedimentology</td>
<td>W3</td>
<td>Laboratory</td>
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<tr>
<td>EESC_356-02</td>
<td>Stratigraphy and Sedimentology</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>EESC_360-101</td>
<td>Geologic Resources</td>
<td>101</td>
<td>Lecture</td>
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<tr>
<td>EESC_360-102</td>
<td>Geologic Resources</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>EESC_367-001</td>
<td>Energy Resources Management</td>
<td>W2</td>
<td>Lecture</td>
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<td>EESC_367-01</td>
<td>Freshwater Resources</td>
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<td>Lecture</td>
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<tr>
<td>EESC_367-02</td>
<td>Freshwater Resources</td>
<td>W2</td>
<td>Laboratory</td>
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<tr>
<td>EESC_425-101</td>
<td>Tectonics and Orogenesis</td>
<td>W2</td>
<td>Lecture</td>
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<td>ENGL_112-101</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-102</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-103</td>
<td>Studies in Composition</td>
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<td>Lecture</td>
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<tr>
<td>ENGL_112-104</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-105</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-106</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-107</td>
<td>Studies in Composition</td>
<td>W2</td>
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<td>ENGL_112-108</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-109</td>
<td>Studies in Composition</td>
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<td>Lecture</td>
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<tr>
<td>ENGL_112-110</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<tr>
<td>ENGL_112-111</td>
<td>Studies in Composition</td>
<td>W2</td>
<td>Lecture</td>
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<td>ENGL 112-112</td>
<td>Studies in Composition</td>
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<tr>
<td>ENGL 112-113</td>
<td>Studies in Composition</td>
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<td>ENGL 112-114</td>
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<td>ENGL 150-101</td>
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<tr>
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<td>Introduction to Literary Genre</td>
<td>102</td>
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<tr>
<td>ENGL 150-103</td>
<td>Introduction to Literary Genre</td>
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<td>ENGL 150-104</td>
<td>Introduction to Literary Genre</td>
<td>104</td>
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<td>Introduction to Literary Genre</td>
<td>105</td>
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<td>Introduction to Literary Genre</td>
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<tr>
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<td>Introduction to Literary Genre</td>
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<td>W2</td>
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<tr>
<td>ENGL 150-108</td>
<td>Introduction to Literary Genre</td>
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<td>ENGL 153-101</td>
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<tr>
<td>ENGL 153-134</td>
<td>Readings in Narrative</td>
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</table>
ENGL 155-T2B ENGL O T2B Writing and Making Technology in the Humanities 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 155-101 ENGL O 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: DHU 155 Lecture In Person Learning Fri 2:00 p.m. - 4:00 p.m.

ENGL 155-T2A ENGL O T2A 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: DHU 155 Discussion In Person Learning Fri 10:00 a.m. - 11:00 a.m.

ENGL 155-T2B ENGL O 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: DHU 155 Discussion In Person Learning Mon 8:00 a.m. - 9:00 a.m.

ENGL 155-T2C ENGL O 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: DHU 155 Discussion In Person Learning Wed 1:00 p.m. - 2:00 p.m.

ENGL 155-T2D ENGL O 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: DHU 155 Discussion In Person Learning Tue 5:00 p.m. - 6:00 p.m.

ENGL 155-T2E ENGL O 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: DHU 155 Discussion In Person Learning Fri 4:00 p.m. - 5:00 p.m.

ENGL 155-T2F ENGL O 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: DHU 155 Discussion In Person Learning Mon 9:00 a.m. - 10:00 a.m.

ENGL 155-T2G ENGL O 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: DHU 155 Discussion In Person Learning Wed 10:00 a.m. - 11:00 a.m.

ENGL 155-T2H ENGL O T2H Writing and Making Technology in the Humanities 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 100, INDG 102. Equivalency: INDG202 Lecture Online Learning Arranged Arranged

ENGL 202-101 ENGL O 101 Okanagan Syilx Literatures: Concepts 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 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 Mon Wed 11:00 a.m. - 12:30 p.m.

ENGL 203-A_101 ENGL O A A_101 Topics in Composition 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 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 Mon Wed 11:00 a.m. - 12:30 p.m.

ENGL 203-A_102 ENGL O A A_102 Topics in Composition 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 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 203-A_103 ENGL O A A_103 Topics in Composition 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 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 101 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 35% 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 Tue Thu 9:30 a.m. - 11:00 a.m.

ENGL 215-101 ENGL O 101 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: CULT210 Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

ENGL 221-101 ENGL O 101 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 221-102 ENGL O 102 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.
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<td>ENGL 350-101</td>
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<td>ENGL 353-E 101</td>
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<td>ENGL 357-101</td>
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<td>ENGL 344-B 101</td>
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<td>ENGL 385-001</td>
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<td>ENGL 394-J 101</td>
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<td>ENGL 395-H 101</td>
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<td>ENGL 423-A 101</td>
<td>ENGL A 101: Approaches to 16th- and/or 17th-Century Literature</td>
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<td>ENGL 457-101</td>
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<td>ENGL 491-101</td>
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<tr>
<td>ENGL 493-N 101</td>
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<tr>
<td>ENGR 605-201</td>
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Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Laboratory In Person Learning Wed (Alternate weeks) 8:00 a.m. - 10:00 a.m.

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Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Discussion Online Learning Mon 4:00 p.m. - 5:00 p.m.

Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Discussion Online Learning Thu 11:00 a.m. - 12:00 p.m.

Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Discussion Online Learning Fri 5:00 p.m. - 6:00 p.m.

Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Discussion Online Learning Wed 11:00 a.m. - 12:00 p.m.

Dynamic systems, linear systems, control concepts, block diagrams, transient response, root locus, frequency response, Bode and Nyquist plots, and controller design. Discussion Online Learning Mon 4:00 p.m. - 5:00 p.m.

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. Lecture In Person Learning Wed Mon 6:30 p.m. - 8:00 p.m.

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

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. Lecture In Person Learning Wed (Alternate weeks) 4:00 p.m. - 6:00 p.m.

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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. Lecture In Person Learning Wed (Alternate weeks) 12:00 p.m. - 2:00 p.m.

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. Lecture In Person Learning Wed (Alternate weeks) 12:00 p.m. - 2:00 p.m.
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.

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.

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.

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.

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.

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.

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.

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]

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

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 4:00 p.m. - 5:00 p.m.

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 4:00 p.m. - 5:00 p.m.

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

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

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

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

Applied probability and simulation for civil engineering infrastructure. Methods for probabilistic risk and reliability analysis. Risk-based decision making. [3-0-0]

Prerequisite: APSC 254.

Corequisite: APSC 258

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

Introduction to asset management, municipal infrastructure systems, performance and prioritization measures, data management, life cycle costing, decision support tools, integrated approach. [3-0-0]

Corequisite: All of ENGR 305, ENGR 330

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

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. [3-0-0]

Prerequisite: All of APSC 169, APSC 254.

Lecture In Person Learning Mon Wed 6:30 p.m. - 8:00 p.m.

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 169, APSC 254.

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

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 169, APSC 254.

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

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 169, APSC 254.

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

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 169, APSC 254.

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

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 169, APSC 254.

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

Analysis, planning, design, and operation of transportation systems, including: governance, economics, land use, transport modes, users, roads, freeways, end-of-trip facilities, public transit, and intersection controls. [3-0-0]

Prerequisite: APSC 254.

Lecture In Person Learning Tue Thrs 2:00 p.m. - 3:30 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
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<td>ENGR 352-T2A</td>
<td>ENGR_O</td>
<td>L2A</td>
<td>Transportation Engineering</td>
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<td>ENGR 340-T01</td>
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<td>ENGR 340-L1A</td>
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<td>ENGR 340-L1G</td>
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<td>ENGR 352-L2D</td>
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<td>L2D</td>
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<td>T02</td>
<td>Digital Signal Processing I</td>
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<td>ENGR 362-T2A</td>
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<td>ENGR 362-T2B</td>
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<td>ENGR 362-T2C</td>
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<td>T2C</td>
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<tr>
<td>ENGR_O 375-201</td>
<td>Energy System Design</td>
<td>W2</td>
<td>Lecture</td>
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<td></td>
<td>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.</td>
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<tr>
<td>ENGR_O 375-T2A</td>
<td>Energy System Design</td>
<td>W2</td>
<td>Discussion</td>
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<tr>
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<td>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.</td>
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<tr>
<td>ENGR_O 375-T2B</td>
<td>Energy System Design</td>
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<td>Discussion</td>
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<td>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.</td>
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<td>ENGR_O 375-T2C</td>
<td>Energy System Design</td>
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<td>Discussion</td>
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<td></td>
<td>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.</td>
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<td>ENGR_O 375-T2D</td>
<td>Energy System Design</td>
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<td>Discussion</td>
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<td>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.</td>
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<tr>
<td>ENGR_O 375-T2E</td>
<td>Energy System Design</td>
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<td>Discussion</td>
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<td>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.</td>
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<tr>
<td>ENGR_O 378-001</td>
<td>Electromagnetics for Engineers</td>
<td>W2</td>
<td>Lecture</td>
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<td>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.</td>
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<tr>
<td>ENGR_O 378-T2A</td>
<td>Electromagnetics for Engineers</td>
<td>W2</td>
<td>Discussion</td>
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<td>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.</td>
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<td>ENGR_O 378-T2B</td>
<td>Electromagnetics for Engineers</td>
<td>W2</td>
<td>Discussion</td>
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<td>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.</td>
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<td>ENGR_O 378-T2C</td>
<td>Electromagnetics for Engineers</td>
<td>W2</td>
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<td>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.</td>
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<td>ENGR_O 380-201</td>
<td>Design of Machine Elements</td>
<td>W2</td>
<td>Lecture</td>
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<td>Product design methodology: static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.</td>
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<td>ENGR_O 380-T2A</td>
<td>Design of Machine Elements</td>
<td>W2</td>
<td>Discussion</td>
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<td>Product design methodology: static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.</td>
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<td>ENGR_O 380-T2B</td>
<td>Design of Machine Elements</td>
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<td>Discussion</td>
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<td>Product design methodology: static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.</td>
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<td>ENGR_O 380-T2C</td>
<td>Design of Machine Elements</td>
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<td>Discussion</td>
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<td>Product design methodology: static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.</td>
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<td>ENGR_O 380-T2D</td>
<td>Design of Machine Elements</td>
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<td>Discussion</td>
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<td>Product design methodology: static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.</td>
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<td>ENGR_O 380-T2E</td>
<td>Design of Machine Elements</td>
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<td>Discussion</td>
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<td>Product design methodology: static and fatigue failure theory; design/selection of components including shafts, springs, bearings, gears, and clutches; design of bolted joints, power screws, and welds; design evaluation and optimization. [3-0-1] Prerequisite: APSC 260.</td>
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<td>ENGR_O 380-T2F</td>
<td>Design of Machine Elements</td>
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<td>Lecture</td>
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<td>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.</td>
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<td>In Person Learning</td>
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<td>ENGR_O 381-102</td>
<td>Heat Transfer Applications</td>
<td>W2</td>
<td>Lecture</td>
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<td>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.</td>
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<td>Heat Transfer Applications</td>
<td>W2</td>
<td>Lecture</td>
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<td>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.</td>
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<td>ENGR_O 381-L2B</td>
<td>Heat Transfer Applications</td>
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<td>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.</td>
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<td>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.</td>
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<td>ENGR_O 381-L2D</td>
<td>Heat Transfer Applications</td>
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<td>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.</td>
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<td>ENGR_O 381-L2E</td>
<td>Heat Transfer Applications</td>
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<td>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.</td>
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<td>Heat Transfer Applications</td>
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<td>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.</td>
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<td>ENGR_O 381-L2G</td>
<td>Heat Transfer Applications</td>
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<td>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.</td>
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ENGR_O 385-L2H ENGR_O
L2H Heat Transfer Applications W2
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.

ENGR_O 385-L2I ENGR_O
L2I Heat Transfer Applications W2
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.

ENGR_O 385-L2J ENGR_O
L2J Heat Transfer Applications W2
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.

ENGR_O 385-L2K ENGR_O
L2K Heat Transfer Applications W2
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.

ENGR_O 385-L2L ENGR_O
L2L Heat Transfer Applications W2
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.

ENGR_O 385-T2A ENGR_O
T2A Heat Transfer Applications W2
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 Thu 1:00 p.m. - 2:00 p.m.

ENGR_O 385-T2B ENGR_O
T2B Heat Transfer Applications W2
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.

ENGR_O 385-T2C ENGR_O
T2C Heat Transfer Applications W2
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.

ENGR_O 385-T2D ENGR_O
T2D Heat Transfer Applications W2
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.

ENGR_O 385-T2E ENGR_O
T2E Heat Transfer Applications W2
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.

ENGR_O 385-T2F ENGR_O
T2F Heat Transfer Applications W2
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.

ENGR_O 411-101 ENGR_O
101 Technology Entrepreneurship for Engineers W2
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. CGSC or B.Sc. CGSC standing. Lecture In Person Learning Thu Tu 2:00 p.m. - 3:30 p.m.

ENGR_O 413-201 ENGR_O
201 Law and Ethics for Engineers W2

ENGR_O 424-001 ENGR_O
001 Smart Cities W2
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: Good standing. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

ENGR_O 425-001 ENGR_O
001 Design of Steel and Timber Structures W2
Introduction to limit states design of steel and timber structures: material properties, design of tension and compression members, beams, columns, and connections. [3-0-0] Prerequisite: All of ENGR 325, ENGR 327. Lecture In Person Learning Tue Tu 11:00 a.m. - 12:30 p.m.

ENGR_O 429-101 ENGR_O
101 Rehabilitation of Concrete Structures W2
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 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.

ENGR_O 443-101 ENGR_O
101 Construction Engineering and Management 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 and quality. [3-0-0] Prerequisite: ENGR 447. Lecture In Person Learning Thu Tu 2:00 p.m. - 3:30 p.m.

ENGR_O 444-101 ENGR_O
101 Advanced Water Treatment Processes W2
Identification and evaluation of design solutions for providing a community with adequate water supply, collecting and disposing of stormwater and sewage, and managing excess stormwater flow. [3-0-0] Prerequisite: ENGR 443. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

ENGR_O 445-101 ENGR_O
101 Internet of Things 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: APSC 254. Lecture In Person Learning Wed Mon 12:30 p.m. - 2:00 p.m.

ENGR_O 445-1A1 ENGR_O
1A1 Internet of Things 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: APSC 254. Lecture In Person Learning Mon Alternate weeks 10:00 a.m. - 12:00 p.m.

ENGR_O 445-1A2 ENGR_O
1A2 Internet of Things 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: APSC 254. Lecture In Person Learning Mon Alternate weeks 10:00 a.m. - 12:00 p.m.

ENGR_O 454-101 ENGR_O
001 Motor Drive Systems W2
Three-phase AC/DC PWM inverter, converter modulation techniques, abc/qd 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 2:00 p.m. - 3:30 p.m.

ENGR_O 454-1A1 ENGR_O
1A1 Motor Drive Systems W2
Three-phase AC/DC PWM inverter, converter modulation techniques, abc/qd 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 Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

ENGR_O 454-1A2 ENGR_O
1A2 Motor Drive Systems W2
Three-phase AC/DC PWM inverter, converter modulation techniques, abc/qd 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 Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

ENGR_O 460-001 ENGR_O
001 Tools and Applications in Environmental and Eng W2
Fundamentals of environmental microbiology and DNA sequencing technologies including microbial detection with molecular methods, bioinformatics and computational analysis. [3-0-0] Prerequisite: Either (a) all of APSC 182, APSC 183 or (b) CHEM 113 or (c) CHEM 123. Third-year B.A.Sc. or B.Sc. Standing. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.
ENGR_O 469-101  ENGR_O 101  Polymer Engineering  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 ENGR 259, APSC 260. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

ENGR_O 470-101  ENGR_O 001  Microwave Engineering  W2  Review of electromagnetic principles, waveguides, transmission lines, impedance matching, Smith charts, 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-L2A  ENGR_O 101  Microwave Engineering  W2  Review of electromagnetic principles, waveguides, transmission lines, impedance matching, Smith charts, 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 474-001  ENGR_O 001  Analog Integrated Circuits  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 352. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.


ENGR_O 478-001  ENGR_O 001  Alternative Energy Systems  W2  Description of alternative sources of energy, electric vehicles, thermoelectric energy, generation of electricity by photovoltaic effect, wind power energy, hydropower, geothermal, nuclear power, power plants with fuel cells, aspects of hydrogen as fuels, fuel from biomass, energy storage parameters, integration of alternative sources of energy. [3-0-0] Prerequisite: All of ENGR 375, ENGR 385. Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

ENGR_O 482-001  ENGR_O 001  Biomedical Engineering I  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 Tue Thu 9:30 a.m. - 11:00 a.m.

ENGR_O 487-001  ENGR_O 001  Digital Control  W2  Computer numerical control theory and methods for the numerical simulation of heat and fluid flows. Governing equations, meshing strategies and mesh requirements, finite difference methods, finite volume methods, solution of algebraic systems of equations, compressible flows, turbulence modelling. [3-0-0] Prerequisite: ENGR 310. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

ENGR_O 491-101  ENGR_O 101  Computational Fluid Dynamics  W2  Governing equations, meshing strategies and mesh requirements, finite difference methods, finite volume methods, solution of algebraic systems of equations, compressible flows, turbulence modelling. [3-0-0] Prerequisite: ENGR 310. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

ENGR_O 494-201  ENGR_O 001  Autonomous Vehicle Technology  W2  Autonomous navigation: perception, localization and mapping, motion planning, and motion control; and applications to unmanned aerial vehicles (UAVs), automated vehicles and self-driving cars. Credit will be granted for only one of ENGR 494 or ENGR 535. [3-1-0] Prerequisite: ENGR 480. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

ENGR_O 494-L2A  ENGR_O 101  Autonomous Vehicle Technology  W2  Autonomous navigation: perception, localization and mapping, motion planning, and motion control; and applications to unmanned aerial vehicles (UAVs), automated vehicles and self-driving cars. Credit will be granted for only one of ENGR 494 or ENGR 535. [3-1-0] Prerequisite: ENGR 480. Laboratory In Person Learning Arranged Arranged

ENGR_O 495-001  ENGR_O 001  Tissue Engineering  W2  Fundamentals of cell biology; extracellular matrix, receptors, and cell-cell and cell-matrix interactions at both the theoretical and experimental levels; effects of physical, chemical, and electrical stimuli on cell function; tissue structure and function and the clinical need for tissue repair; scaffold design and processing for tissue engineering. Credit will be granted for only one of ENGR 495 or ENGR 515. [3-0-0] Prerequisite: Fourth-year standing. Lecture In Person Learning Thu 12:30 p.m. - 2:00 p.m.

ENGR_O 499-Q_001  ENGR_O 101  Special Topics in Engineering  W2  Topics in engineering not covered in other technical electives. Students should consult the School of Engineering for the particular topics offered in a given year. This course may not be offered every year. [3-0-0] Prerequisite: Fourth-year standing in the B.A.Sc. Program and approval of the Associate Director of Undergraduate Studies. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

ENGR_O 499-B_001  ENGR_O 001  Special Topics in Engineering  W2  Topics in engineering not covered in other technical electives. Students should consult the School of Engineering for the particular topics offered in a given year. This course may not be offered every year. [3-0-0] Prerequisite: Fourth-year standing in the B.A.Sc. Program and approval of the Associate Director of Undergraduate Studies. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

ENGR_O 501-001  ENGR_O 001  Deep and Reinforcement Learning for Engineers  W2  Foundations of neural networks and deep learning; techniques to improve neural networks; convolutional neural networks recurrent neural networks and their applications; reinforcement learning: basics, Q-learning, actor-critic algorithm; practical engineering applications of deep and reinforcement learning. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

ENGR_O 502-002  ENGR_O 002  Technical Communication for Engineering Resea W2  Strategies for clear, effective, and ethical technical communication (both written and oral). Tools and formatting for graphics, technical reports, proposals, journal papers, theses, Pass/Fail. Lecture In Person Learning 3:30 p.m. - 5:00 p.m.

ENGR_O 511-101  ENGR_O 001  Technology Entrepreneurship for Engineers  W2  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 511 or ENGR 411. [3-0-0] Lecture In Person Learning Thu 2:00 p.m. - 3:30 p.m.

ENGR_O 512-001  ENGR_O 001  Signals, Systems, and Inference  W2  Review of signals and systems basics; LTI state-space models; probabilistic models and estimation of random variable; hypothesis testing rules; random processes and power spectral density; signal estimation based on linear minimum mean square error principle; signal detection in i.i.d. Gaussian noise and colored noise. Credit will be granted for only one of ENGR 412 or ENGR 512. Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.
ENGR_O 519-001 ENGR_O 001 Tissue Engineering W2

Fundamentals of cell biology; extracellular matrix, receptors, and cell-cell and cell-matrix interactions at both the theoretical and experimental levels; effects of physical, chemical, and electrical stimuli on cell function; tissue structure and function and the clinical need for tissue repair; scaffold design and processing for tissue engineering. Credit will be granted for only one of ENGR 495 or ENGR 519. [3-0-0]

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

ENGR_O 522-101 ENGR_O 101 Advanced Design of Steel Structures W2

Behaviour and design of steel structures, members, and cross sections in accordance with limit states principles. Behaviour and design of braced frames and moment resisting frames. Second-order analysis of frames. Load path concepts for detailing connections. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

ENGR_O 523-001 ENGR_O 001 Seismic Design of Buildings W2

Review of structural dynamics and response spectra; seismic design of steel and masonry buildings; seismic design of reinforced concrete structures; design using simplified code procedures and computer tools. Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

ENGR_O 529-001 ENGR_O 101 Rehabilitation of Concrete Structures W2

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. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

ENGR_O 532-001 ENGR_O 001 Project Planning and Control W2

Project planning and alignment, project control standards and deliverables, project selection process, project definition rating indices, and risk management. Analytical hierarchial processes, and Monte-Carlo simulation scheduling and costing. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

ENGR_O 555-201 ENGR_O 201 Autonomous Vehicle Technology W2

Autonomous navigation: perception, localization and mapping, motion planning, and motion control; and applications to unmanned aerial vehicles (UAVs), automated vehicles and self-driving cars. Credit will be granted for only one of ENGR 494 or ENGR 555. Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.

ENGR_O 563-001 ENGR_O 001 Advanced Polymer Science and Engineering W2

Introduction to polymer science, polymer chain architecture and configuration, thermodynamics of polymer solutions, amorphous and crystalline states of polymers, rubber elasticity, networks and gels, polymer viscoelasticity and rheology, mechanical properties of polymers, multicomponent polymer systems, polymer processing and forming. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

EPSE_O 470-6-001 EPSE_O G G_001 Selected Topics in Inclusive Education W2

Course content focuses upon a single topic or competency in inclusive education (e.g., autism, gifted students, ADHD). Topics may differ in each offering to respond to new research or current needs in the field. This course may be repeated with new content. Restricted to students with at least third-year standing. Pass/Fail. [3-0-0]

Lecture Online Learning Arranged Arranged

EXCH_O 380-201 EXCH_O 201 Student Exchange Program, Undergraduate W2

Student Exchange Program, Undergraduate. Lecture In Person Learning Arranged Arranged

EXCH_O 380-212 EXCH_O 212 Student Exchange Program, Undergraduate W2

Student Exchange Program, Undergraduate. Lecture In Person Learning Arranged Arranged

EXCH_O 380-311 EXCH_O 311 Student Exchange Program, Undergraduate W2

Student Exchange Program, Undergraduate. Lecture In Person Learning Arranged Arranged

EXCH_O 380-312 EXCH_O 312 Student Exchange Program, Undergraduate W2

Student Exchange Program, Undergraduate. Lecture In Person Learning Arranged Arranged

EXCH_O 588-R_001 ENGR_O R R_001 Topics in Engineering W2

Lecture In Person Learning Arranged Arranged


Lecture In Person Learning Arranged Arranged


Lecture In Person Learning Arranged Arranged

FILM_O 100-003 FILM_O 003 Introduction to Film Studies W2

Basic aesthetic, economic, sociological, and technological aspects of film. Lecture In Person Learning Fri 8:00 a.m. - 11:00 a.m.

FILM_O 103-101 FILM_O 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 FILM 103 or THTR 103. [5 hours/week study] [5 hours/week studio] Equivalency: THTR 103

Studio In Person Learning Mon 2:00 p.m. - 5:00 p.m.

FILM_O 271-101 FILM_O 101 Video II W2

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 FILM 371 or CULT 317. [2-2-0] Prerequisite: One of USA 261, FILM 261. Equivalency: USA 271

Studio In Person Learning Fri 1:00 p.m. - 5:00 p.m.

FILM_O 371-001 FILM_O 001 Digital Documentary Production W2

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 USA 271.

[2-2-0] Prerequisite: One of USA 261, FILM 261 and third-year standing or permission of the instructor. Equivalency: CULT 317 Studio In Person Learning Thu 8:00 a.m. - 12:00 p.m.

FREN_O 102-102 FREN_O 102 Elementary French II W2

Continuation of Elementary French I. Completes level A1 of the Common European Framework of Reference for Languages (CEF). Not available to students who have completed French 11 and/or students who have a CEF level A1. Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.

FREN_O 102-103 FREN_O 103 Elementary French II W2

Lecture In Person Learning Arranged Arranged

FREN_O 104-101 FREN_O 101 Upper Elementary French II W2

Continuation of Upper Elementary French I. Completes level A2 of the Common European Framework of Reference for Languages (CEF). Not available to students who have completed French 12 and/or students who have a CEF level A2. Lecture In Person Learning Mon Wed Fri 3:00 p.m. - 4:00 p.m.

FREN_O 104-102 FREN_O 102 Upper Elementary French II W2

Lecture Online Learning Arranged Arranged
**FREN 123-101** Intermediate French II W2

Continuation of FREN 122. Not available to students who have completed Français Immersion 12 and/or students who have a CFR Level B1 or higher. The next level course series available is FREN 222-223. Prerequisite: FREN 122, or prior introductory French course at CFRF Level B1.

Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

**FREN 215-001** Oral French Practice II W2

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 Français 12 in a Francophone school and/or students who have a CFR Level B2 or higher. The next level courses available are FREN 344 or FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123, or French 12 immersion.

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

**FREN 215-L01** Oral French Practice II W2

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 Français 12 in a Francophone school and/or students who have a CFR Level B2 or higher. The next level courses available are FREN 344 or FREN 345. [3-1-0] Prerequisite: One of FREN 115, FREN 123, or French 12 immersion.

Laboratory In Person Learning Fri 10:00 a.m. - 11:00 a.m.

**FREN 222-001** French Language and Style II W2

Development of essay writing skills in French. Prerequisite: FREN 353.

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

**FREN 300-001** Advanced Composition W2

Examines works from selected Quebecois poets from the nineteenth century to the present.

Prerequisite: FREN 353 and one of FREN 327, FREN 330, FREN 338, FREN 360, FREN 362, FREN 390.

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

**FREN 400-001** French for Work: Professional Oral Performance W3

Oral expressions, such as academic and professional presentations, debates, and public speaking. Exposure to regional and foreign French accents through a selection of audiovisual material. Of use to students pursing careers in teaching or international relations, or applying for graduate programs in French.

Prerequisite: Either (a) FREN 344 or (b) FREN 345; and one of FREN 327, FREN 330, FREN 358, FREN 360, FREN 362, FREN 390.

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

**FREN 446-101** 18th- and 18th-Century French Comedy W2

Exploring French comedies through a selection of works by authors such as Moliné, Leseau, Mirvieux, and Beaumarchais. Examines the aesthetic and political forces that shaped these plays, as well as the relationships between comedy and the representation of class and gender. Plays will be studied in their socio-historical context and approached using current literary criticism.

Prerequisite: FREN 353 and one of FREN 327, FREN 330, FREN 340, FREN 390, or FREN 362.

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

**GEOG 109-101** Earth Systems: 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] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 130, EESC 170, or (c) second-year standing in the Bachelor of Science. Not for Science credit. [3-0-0]

In Person Learning Thu 5:00 p.m. - 6:30 p.m.

**GEOG 109-L01** Earth Systems: 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] Prerequisite: GEOG 109-L02.

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

**GEOG 109-L02** Earth Systems: 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] Prerequisite: GEOG 109-L01.

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

**GEOG 109-L03** Earth Systems: 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] Prerequisite: GEOG 109-L02.

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

**GEOG 109-L04** Earth Systems: 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] Prerequisite: GEOG 109-L03.

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

**GEOG 109-L05** Earth Systems: 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] Prerequisite: GEOG 109-L04.

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

**GEOG 109-L06** Earth Systems: 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] Prerequisite: GEOG 109-L05.

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

**GEOG 109-XMT** XMT Earth Systems: 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] Prerequisite: GEOG 109-L06.

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

**GEOG 128-101** Human Geography: Space, Place, and Community W2

Critical introduction to the study and application of the major themes of human geography, including historical, regional, urban, social, and cultural geographies. Dares upon a range of geographic research methods to investigate geographic phenomena, especially human-environment relations. Not for Science credit. [3-0-0] Prerequisite: GEOG 109-101.

In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

**GEOG 129-101** Human Geography: Resources, Development, or 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]

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

**GEOG 129-102** Human Geography: Resources, Development, or 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]

In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

**GEOG 200-101** 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] 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: EESC 222.

In Person Learning Mon Wed 6:30 p.m. - 9:30 p.m.
GEOG 200-102

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 GEOG 200 or EESC 212. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC212

Laboratory

In Person Learning

Fri

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

GEOG 205-001

Introduction to Hydrology

W2

Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasizes surface water hydrology of western North America. Credit will be granted for only one of GEOG 205 or EESC 205. [3-3-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC205

Lecture

In Person Learning

Mon Wed

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

GEOG 205-101

Introduction to Hydrology

W2

Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasizes surface water hydrology of western North America. Credit will be granted for only one of GEOG 205 or EESC 205. [3-3-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC205

Laboratory

In Person Learning

Tue

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

GEOG 205-102

Introduction to Hydrology

W2

Principles of hydrology at site, watershed, and regional scales. Techniques of measurement and analysis. Emphasizes surface water hydrology of western North America. Credit will be granted for only one of GEOG 205 or EESC 205. [3-3-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 112, EESC 121 or (c) second-year standing in the Bachelor of Science. Equivalency: EESC205

Laboratory

In Person Learning

Thu

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

GEOG 270-101

Introduction to Cartography and Mapmaking

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] Prerequisite: One of GEOG 108, GEOG 109, GEOG 128, GEOG 129

Lecture

In Person Learning

Tue

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

GEOG 270-101

Introduction to Cartography and Mapmaking

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] Prerequisite: One of GEOG 108, GEOG 200, EESC 212. Third-year standing. Equivalency: EESC304

Lecture

In Person Learning

Wed Fri

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

GEOG 316-001

Geography of Natural Hazards

W2

222. Third-year standing.

Lecture

In Person Learning

Thu

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

GEOG 317-101

The Physical Environment of British Columbia

W2

The biophysical processes that are shaping and have shaped B.C. Characteristic associations between landforms, climate, soil, and vegetation; biophysical constraints on air, land, and water use. [3-0-0] Prerequisite: One of GEOG 200, EESC 212, EESC 222, GEOG 205. GEOG 205. Third-year standing.

Lecture

In Person Learning

Mon Wed

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

GEOG 318-101

Rural Geographies

W2

Introduction to the social geographies of cities. Draws on critical social and cultural theories. Gentrification, transformation, and contrasts between developed and developing nations. [3-0-0] Prerequisite: Either (a) GEOG 108 and GEOG 109; or (b) two of EESC 101, EESC 111, EESC 205, EESC 212, EESC 222, GEOG 200, GEOG 205, GEOG 304.

Lecture

In Person Learning

Mon Wed

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

GEOG 311-101

Urban Social Geography

W2

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

Wed Fri

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

GEOG 316-001

Stratigraphy and Sedimentology

W2

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 GEOG 356 or EESC 356.

Lecture

In Person Learning

Mon Wed

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

GEOG 356-001

Stratigraphy and Sedimentology

W2

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 GEOG 356 or EESC 356.

Lecture

In Person Learning

Fri

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

GEOG 356-101

Stratigraphy and Sedimentology

W2

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 GEOG 356 or EESC 356.

Laboratory

In Person Learning

Mon

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

GEOG 356-102

Stratigraphy and Sedimentology

W2

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 109, EESC 101, EESC 112.

Laboratory

In Person Learning

Wed Fri

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

GEOG 356-200

Development of Environmental Thought

W2

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.
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 426, GWST 426, GEOG 495 and GWST 495 when the subject matter is of the same nature. Prerequisite: Either (a) Two of GEOG 128, GEOG 129, SUST 104, or (b) 6 credits of GWST. Third-year standing. Equivalency: GWST426

Lecture Hybrid Learning Fri 2:00 p.m. - 5:00 p.m.

GEOG_O 426-101 GEOG_O 101 Queer Geographies W2

GIL, remote sensing, GPS, geostatistics, spatial analysis, and neighborhood analysis; visualization, 3D rendering, and animation; principles of geocoding; online mapping and open-source GIS; applied project and workflow management. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISC 381, GEOG 381, or EESC 381. [3-3-0] Prerequisite: One of GISC 380, EESC 380, GEOG 380.

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

GISC_O 381-101 GISC_O 101 Fundamentals of Geographic Information Science: W2

GIL, remote sensing, GPS, geostatistics, spatial analysis, and neighborhood analysis; visualization, 3D rendering, and animation; principles of geocoding; online mapping and open-source GIS, applied project and workflow management. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISC 381, GEOG 381, or EESC 381. [3-3-0] Prerequisite: One of GISC 380, EESC 380, GEOG 380.

Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

GISC_O 381-102 GISC_O 102 Fundamentals of Geographic Information Science: W2

GIL, remote sensing, GPS, geostatistics, spatial analysis, and neighborhood analysis; visualization, 3D rendering, and animation; principles of geocoding; online mapping and open-source GIS; applied project and workflow management. Laboratory exercises require ArcGIS. Credit will be granted for only one of GISC 381, GEOG 381, or EESC 381. [3-3-0] Prerequisite: One of GISC 380, EESC 380, GEOG 380.

Laboratory In Person Learning Tue 8:00 a.m. - 11:00 a.m.

GISC_O 381-103 GISC_O 103 Fundamentals of Geographic Information Science: W2

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. [3-0-0] Prerequisite: One of GISC 381, EESC 381, GEOG 381.

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

GISC_O 480-101 GISC_O 101 Practical Applications in GIS W2

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] Equivalency: CULT 272

Lecture Online Learning Thu Tue 2:00 p.m. - 3:30 p.m.

GWST_O 100-101 GWST_O 101 Gender, Race, Sexuality, and Power I: An Introduction W2

Applying the conceptual frameworks learned in GWST 100, considers how gender, race, sexuality and power shape social inequalities in such realms as health, violence, poverty, and work. GWST 100 recommended. [3-0-0] Prerequisite: 6 credits of GWST, CULT, SUST 104.

Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

GWST_O 110-101 GWST_O 101 Gender, Race, Sexuality, and Power II: Everyday W2

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 155, ENGL 155, ENGL 154, ENGL 155, ENGL 156.

Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

GWST_O 240-101 GWST_O 101 Communication in Gender, Women and Sexuality W2

Feminist theories and practice to understand and address environmental change. Role of decolonial, 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 CULT 272. [3-0-0] Prerequisite: 6 credits of GWST, CULT, SUST 104.

Equivalency: CULT 272

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

GWST_O 272-101 GWST_O 101 Feminism and Environment W2

Feminist theories and practice to understand and address environmental change. Role of decolonial, 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 CULT 272. [3-0-0] Prerequisite: 6 credits of GWST, CULT, SUST 104.

Equivalency: CULT 272

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

GWST_O 272-201 GWST_O 101 Feminism and Environment W2

Examines feminist critiques of the history of Western thought and surveys the development of feminist cultural theory. 6 credits of 100-level GWST recommended. [3-0-0] Prerequisite: Third-year standing.

Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

GWST_O 335-101 GWST_O 101 Feminist Theory in the Humanities W2

Explores the intersections of gender, sexuality, race, and class in popular culture, through a range of genres and media including, but not limited to, film, music, television, genre fiction, advertising, and the internet. [3-0-0] Prerequisite: Third-year standing.

Lecture Online Learning Thu 12:30 p.m. - 2:00 p.m.

GWST_O 415-A_101 GWST_O A_101 Topics in Gender, Sexuality and Popular Culture W2

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 GWST 426, GEOG 426, GEOG 495 and GWST 495 when the subject matter is of the same nature. Prerequisite: Either (a) 6 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.

GWST_O 426-101 GWST_O 101 Queer Geographies W2

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 GWST 426, GEOG 426, GEOG 495 and GWST 495 when the subject matter is of the same nature. Prerequisite: Either (a) 6 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.

GWST_O 426-101 GWST_O 101 Queer Geographies W2

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 GWST 426, GEOG 426, GEOG 495 and GWST 495 when the subject matter is of the same nature. Prerequisite: Either (a) 6 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.

MEAL_O 100-001 MEAL_O 001 Introduction and Principles of Health and WellBeing 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. - 2:00 p.m.

MEAL_O 101-001 MEAL_O 001 Mental Health in Social Contexts W2

Human Kinetics degree: [3-0]

Lecture In Person Learning Thu 2:00 p.m. - 3:30 p.m.
Exercise Physiology I

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 101. Credit will be granted for only one of HES 102 or HMKN 101. [3-0-0] Prerequisite: Registration limited to students in the B.H.E.S. program.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Exercise Physiology I

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 190.

Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

Exercise Physiology I

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 190.

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

Exercise Physiology I

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 190.

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

Exercise Physiology I

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 190.

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

Exercise Physiology I

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 190.

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

Exercise Physiology I

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 190.

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

Exercise Physiology I

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 190.

Laboratory In Person Learning Tue 1:00 p.m. - 3:00 p.m.

Exercise Physiology I

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 190.

Laboratory In Person Learning Tue 5:00 p.m. - 7:00 p.m.

Exercise Physiology I

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 190.

Laboratory In Person Learning Wed 11:00 a.m. - 1:00 p.m.

Exercise Physiology I

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 190.

Laboratory In Person Learning Wed 1:00 p.m. - 3:00 p.m.

Exercise Physiology I

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 190.

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

Exercise Physiology I

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 190.

Laboratory In Person Learning Thu 5:00 p.m. - 7:00 p.m.

Human Physiology II

An introduction to human physiology from the cellular to the systemic level. This course will examine the gastrointestinal system, the neuroendoctrine 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 131. [3-2-0] Prerequisite: HES 101.

Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
<th>Type</th>
<th>Credits</th>
<th>Prerequisites</th>
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<td>HES 111-01</td>
<td>Human Physiology II</td>
<td>3-2-0</td>
<td>Laboratory</td>
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<td>HES 101, HMK 191 or BIOL 133.</td>
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<td>HES 111-02</td>
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<td>HES 111-10</td>
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<td>HES 111-11</td>
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<td>HES 111-12</td>
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<td>HES 131-00</td>
<td>Exercise Physiology</td>
<td>3-0-0</td>
<td>Lecture</td>
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<td>HES 131-01</td>
<td>Exercise Physiology</td>
<td>3-0-0</td>
<td>Lecture</td>
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<td>HES 202-00</td>
<td>Human Motor Behaviour I</td>
<td>3-0-0</td>
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<td>HES 203-00</td>
<td>LifeSpan Physical and Motor Development</td>
<td>3-0-0</td>
<td>Lecture</td>
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<td>HES 212-00</td>
<td>Exercise Training, Conditioning and Rehabilitation</td>
<td>3-0-0</td>
<td>Lecture</td>
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<td>HES 212-01</td>
<td>Exercise Training, Conditioning and Rehabilitation</td>
<td>3-0-0</td>
<td>Lecture</td>
<td>1</td>
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<td>HES 212-02</td>
<td>Exercise Training, Conditioning and Rehabilitation</td>
<td>3-0-0</td>
<td>Lecture</td>
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<td>Either (a) HES 100 or (b) HMK 100.</td>
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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, HMK 191 or BIOL 133. (3-2-0) Prerequisite: HES 101.
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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.

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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Wed 8:00 a.m. - 10:00 a.m.

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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Wed 2:00 p.m. - 4:00 p.m.

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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Thu 10:00 a.m. - 12:00 p.m.

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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Thu 12:00 p.m. - 2:00 p.m.

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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Mon 6:00 p.m. - 8:00 p.m.

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. (3-2-0) Prerequisite: All of HES 101, HES 105, HES 111. Laboratory In Person Learning Wed 6:00 p.m. - 8:00 p.m.

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 336. (3-2-0) Prerequisite: Either (a) HES 131 or (b) HMKN 201. Lecture Online Learning Arranged Arranged

Basic principles and concepts associated with the prevention, recognition and management of athletic injuries. Common athletic injuries will be studied along with the practical skills in basic prophylactic wrapping and taping associated with the care of these injuries. Credit will only be granted for one of HES 312 or HMKN 336. [3-2-0] Prerequisite: HES 120. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

Basic principles and concepts associated with the prevention, recognition and management of athletic injuries. Common athletic injuries will be studied along with the practical skills in basic prophylactic wrapping and taping associated with the care of these injuries. Credit will only be granted for one of HES 312 or HMKN 336. 3-2-0 Prerequisite: HES 120. Laboratory In Person Learning Tue 8:00 a.m. - 10:00 a.m.

Basic principles and concepts associated with the prevention, recognition and management of athletic injuries. Common athletic injuries will be studied along with the practical skills in basic prophylactic wrapping and taping associated with the care of these injuries. Credit will only be granted for one of HES 312 or HMKN 336. (3-2-0) Prerequisite: HES 120. Laboratory In Person Learning Tue 2:30 p.m. - 4:30 p.m.

Basic principles and concepts associated with the prevention, recognition and management of athletic injuries. Common athletic injuries will be studied along with the practical skills in basic prophylactic wrapping and taping associated with the care of these injuries. Credit will only be granted for one of HES 312 or HMKN 336. (3-2-0) Prerequisite: HES 120. Laboratory In Person Learning Thu 8:00 a.m. - 10:00 a.m.

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Basic principles and concepts associated with the prevention, recognition and management of athletic injuries. Common athletic injuries will be studied along with the practical skills in basic prophylactic wrapping and taping associated with the care of these injuries. Credit will only be granted for one of HES 312 or HMKN 336. (3-2-0) Prerequisite: HES 120. Laboratory In Person Learning Fri 10:00 a.m. - 12:00 p.m.

Current methods in exercise science will be demonstrated via modules presented by faculty in their areas of specialization including electrophysiological techniques and methods of assessing blood-flow, respiratory capacity, and muscle function. Formerly offered as HMKN 312. Credit will be granted for only one of HES 321 or HMKN 312. [3-3-0] Prerequisite: One of HES 305, HMKN 310. Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.
HES 331-001 HES_O 001 Motivational Interviewing W2 Advanced theories in health and exercise psychology and their critical evaluation regarding utility for instilling and sustaining health behaviour change. Formerly offered as HMK 421. Credit will be granted for only one of HES 332 or HMK 421. [3-0-0] Prerequisite: HES 311 or (b) HMKN 335. Registration is limited to students in the Health Behaviour Change Concentration in the B.H.E.S. Program. Lecture In Person Learning Mon 2:00 p.m. - 5:00 p.m.

HES 332-001 HES_O 001 Advanced Theories of Health Behaviour Change W2 Introduction to the key concepts and methods used in evaluation of health programs. Formerly offered as HMKN 303. Credit will be granted for only one of HMKN 303 or HES 331. [3-0-0] Prerequisite: HES 231 and HES 330. Registration is limited to students in the Health Behaviour Change Concentration in the B.H.E.S. Program. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

HES 333-001 HES_O 001 Health Program Evaluation W2 Analysis of standard and specialized protocols, recommendations, equipment, personnel and parameters of exercise assessments for individuals living with clinical populations. [3-2-0] Prerequisite: HES 250 and either (a) HES 311 or (b) HMKN 335. Registration is limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S. program. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

HES 352-L01 HES_O L01 Exercise Testing for Clinical Populations W2 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 351. Registration is 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.

HES 353-001 HES_O 001 Clinical Exercise Prescription W2 Advanced exercise prescription considerations for individuals with chronic conditions and special populations (e.g., pediatric, agng). [3-2-0] Prerequisite: HES 352. Registration is limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S. program. Laboratory In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

HES 354-001 HES_O 001 Clinical Exercise Physiology Applications in Chronic W2 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 351. Registration is limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S. program. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

HES 355-001 HES_O 001 Clinical Exercise Physiology Applications in Chronic W2 Laboratory In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

HES 381-001 HES_O 001 Body Composition W2 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 HMKN 314. Credit will be granted for only one of HES 381 or HMKN 314. [3-0-0] Prerequisite: Either (a) HMKN 190 or (b) HES 120. Lecture In Person Learning Tue 8:00 a.m. - 11:00 a.m.

HES 401-002 HES_O 002 Community Placement Experience W2 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 409. Formerly offered as HMKN 401. Credit will be granted for only one of HES 401 or HMKN 401. Pass/Fail. 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
| HIST 320-003 | HINT 003 | Global Health | W2 | 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 HINT 320 and NRSG 330 or HEAL 307. [3-0-0] Prerequisite: Third-year standing. | Lecture | In Person Learning | Tue | 2:00 p.m. - 5:00 p.m. |
| HIST 320-004 | HINT 004 | Global Health | W2 | 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 HINT 320 and NRSG 330 or HEAL 307. [3-0-0] Prerequisite: Third-year standing. | Lecture | In Person Learning | Thu | 2:00 p.m. - 5:00 p.m. |
| HIST 021-001 | HINT 001 | Disabilities Studies and Interprofessional Health | W2 | 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. 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, the university, Religion, family, and warfare in the Middle Ages are examined. [3-0-0] | Lecture | In Person Learning | Thu | 2:00 p.m. - 5:00 p.m. |
| HIST 119-101 | HIST 01 | Medieval Europe | 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 the Civil War. [3-0-0] | Lecture | In Person Learning | Mon Wed | 5:00 p.m. - 6:30 p.m. |
| HIST 126-101 | HIST 010 | Europe from the French Revolution | W2 | Survey of the development of Europe through the political, social, and industrial revolutions that accompanied the age of European imperialism. Examination of the World Wars and their impact on the decline of Europe. [3-0-0] | Lecture | In Person Learning | Tue Thu | 3:30 p.m. - 5:00 p.m. |
| HIST 145-101 | HIST 020 | Contemporary World History | W2 | Events and forces shaping the world since the mid-nineteenth century. [5-0-0] | Lecture | In Person Learning | Mon Wed | 2:00 p.m. - 3:30 p.m. |
| HIST 160-001 | HIST 001 | Introduction to Asian History | W2 | Major economic, political, and social currents in Asian history. [3-0-0] | Lecture | In Person Learning | Wed Fri | 9:30 a.m. - 11:00 a.m. |
| HIST 311-001 | HIST 001 | History of Indigenous Peoples of Canada Since 1500 | W2 | Study of the history of the natural sciences in early modern time. Science transformed from natural philosophy to technology; theories of nature and human nature; science and objectivity; the social role of the scientist; the intellectual authority of science. [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 Fri | 12:30 p.m. - 2:00 p.m. |
| HIST 304-001 | HIST 001 | The Rise and Fall of the Roman Republic | W2 | Roman 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 382G. [3-0-0] Prerequisite: HIST 110 | Lecture | In Person Learning | Tue Thu | 5:00 p.m. - 6:30 p.m. |
| HIST 101 | HIST 010 | The Scientific Revolution | W2 | Study of the history of the natural sciences in early modern time. Science transformed from natural philosophy to technology; theories of nature and human nature; science and objectivity; the social role of the scientist; the intellectual authority of science. [3-0-0] Prerequisite: 3 credits of HIST and HIST 118; or HIST 218 and third-year standing. | Lecture | In Person Learning | Wed | 2:00 p.m. - 5:00 p.m. |
| HIST 320-001 | HIST 001 | Iran: From the Safavid Empire to the Islamic Rev | 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; or HIST 211 and third-year standing. | Lecture | In Person Learning | Mon Wed | 5:00 p.m. - 6:30 p.m. |
| HIST 354-101 | HIST 010 | Social Movements in 20th-Century Latin America | W2 | Social movements of Latin America since 1900 that have challenged the status quo. Role of ideology, culture, and identity in the struggles of marginalized peoples. [3-0-0] Prerequisite: One of HIST 151, or HIST 240, or third-year standing. | Lecture | In Person Learning | Mon Wed | 9:30 a.m. - 11:00 a.m. |
Examines the history of commodity production (agricultural, mineral, oil, and other resources) on the African continent from the late nineteenth century to the present day in relation 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 113, HIST 145 and third-year standing.

Lecture
In Person Learning
Mon Wed
11:00 a.m. - 12:30 p.m.

Study of selected themes in the history of England from the eleventh to the twentieth centuries. [1.5-0.5] Prerequisite: 6 credits of HIST; or HIST 119 and third-year standing.

Lecture
In Person Learning
Mon Wed
5:00 p.m. - 6:30 p.m.

Themes in the History of Migration
[3.0-0] Prerequisite: 6 credits of HIST and third-year standing.

Lecture
In Person Learning
Tue
2:00 p.m. - 5:00 p.m.

International relations of Britain, France, Germany, Russia, and the United States since 1899. Emphasis upon the emergence, course, and end of the Cold War. Great Powers in decolonization and the end of empires. [3.0-0] Prerequisite: 6 credits of HIST; or one of HIST 145, HIST 126 and third-year standing.

Lecture
In Person Learning
Tue Thu
9:30 a.m. - 11:00 a.m.

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

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

Interdisciplinary Topics in Research Methods am W2

Lecture
In Person Learning
Wed
11:00 a.m. - 2:00 p.m.

Lecture
In Person Learning
Mon
2:00 p.m. - 5:00 p.m.

Lecture
In Person Learning
Thu
2:00 p.m. - 5:00 p.m.

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

Seminars
In Person Learning
Fri
8:00 a.m. - 11:00 a.m.

Introduction to interdisciplinary and collaborative approaches to the field of Global Studies. 

Seminars
In Person Learning
Tue
2:00 p.m. - 5:00 p.m.

Seminars
In Person Learning
Tue
11:00 a.m. - 2:00 p.m.

Seminars
In Person Learning
Thu
11:00 a.m. - 2:00 p.m.

Seminars
In Person Learning
Thu
2:00 p.m. - 5:00 p.m.

Seminars
In Person Learning
Thu
8:00 a.m. - 11:00 a.m.

Seminars
In Person Learning
Thu
2:00 p.m. - 5:00 p.m.

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

Seminars
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3:30 p.m. - 5:00 p.m.

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

Seminars
In Person Learning
Thu
3:30 p.m. - 5:00 p.m.
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 arise regarding Indigenous heritage in the colonial and neo-colonial periods such as, customary laws, misappropriation, misrepresentation, replication, and legal protection and regulation. [3-0-0] Prerequisite: One of INDG 100, INDG 102. 100SP 100 recommended.

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

Indigenous Women’s Perspectives: Gender, Nation W2

Focuses on Indigenous worldviews 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 programs. [3-0-0] Prerequisite: One of HEAL 200, HES 100. 100SP recommended.

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

Indigeperspectives on Health and Physical 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. [0-3-3] Prerequisite: One of INDG 101, INDG 303, INDG 104.

Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

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. [0-0-3]

Lecture Online Learning Arranged Arranged

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. [0-0-3]

Lecture Online Learning Arranged Arranged

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. [0-0-3]

Lecture Online Learning Arranged Arranged

Residential Schools and Reconciliation 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.

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

Structures of Endangered Languages: Conserv 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.

Lecture Online Learning Arranged Arranged

Technologies for Endangered Language Docume W2

Continuation of JPST 101 Students who have not completed JPST 101 should consult with the instructor before enrolling in this course. Prerequisite: JPST 100 Minimum grade of 55%

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Beginning Japanese Language II W2

Continuation of JPST 101 Students who have not completed JPST 101 should consult with the instructor before enrolling in this course. Prerequisite: JPST 100 Minimum grade of 55%

Laboratory Online Learning Mon 10:00 a.m. - 11:00 a.m.

Beginning Japanese Language II 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.

Lecture In Person Learning Tue 2:00 p.m. - 5:00 p.m.

Beginning Japanese Language II W2

An introduction to the grammar, syntax, and function of modern spoken andwritten Korean. For absolute beginners; not available to students who have obtained the equivalent of CEFR Level A2 in the language. Prerequisite: language placement are required. Restricted to students with at least third-year standing. Pass/Fail

Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

Introduction to Additional Language Teaching or 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.

Production Systems Management I W2


Lecture 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.

Advanced Manufacturing W2


Lecture Online Learning Arranged Arranged

Advanced Manufacturing 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), Interpret and provide critical feedback on LCA/LCC studies and analyze claims on sustainability. Credit will be granted for only one of MANF450 or ENGR 540. [3-0-0] Prerequisite: Fourth-year standing.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

Life Cycle Analysis and Sustainability W2

Systems integration and data analytics for engineering processes in a digital enterprise with industrial automation systems, production and operations, 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 11:00 a.m. - 12:30 p.m.

Digital Enterprise W2
Vector spaces, linear maps, change of basis, eigenvalues and eigenvectors, Jordan canonical forms, matrix decomposition, inner product spaces, orthogonality, linear operators. [3-0-0] Prerequisite: MATH 221.

Laboratory In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Department</th>
<th>Title</th>
<th>Instructor</th>
<th>Type</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 225-101</td>
<td>MATH_O</td>
<td>Introduction to Differential Equations</td>
<td>W2</td>
<td>Lecture</td>
<td>3-1-0</td>
<td>First-order equations, initial value problems, existence and uniqueness theorems, second-order linear equations, superposition of solutions, independence, general solutions, non-homogeneous equations, phaseplane analysis, numerical methods, matrix methods for linear systems, and applications of differential equations to the physical, biological, and social sciences. (3-1-0) Prerequisite: Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103. Corequisite: MATH 221 is recommended.</td>
</tr>
<tr>
<td>MATH 225-102</td>
<td>MATH_O</td>
<td>Introduction to Differential Equations</td>
<td>W2</td>
<td>Discussion</td>
<td>1-0-0</td>
<td>First-order equations, initial value problems, existence and uniqueness theorems, second-order linear equations, superposition of solutions, independence, general solutions, non-homogeneous equations, phaseplane analysis, numerical methods, matrix methods for linear systems, and applications of differential equations to the physical, biological, and social sciences. (3-0-1) Prerequisite: Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103. Corequisite: MATH 221 is recommended.</td>
</tr>
<tr>
<td>MATH 225-103</td>
<td>MATH_O</td>
<td>Introduction to Differential Equations</td>
<td>W2</td>
<td>Discussion</td>
<td>1-0-0</td>
<td>First-order equations, initial value problems, existence and uniqueness theorems, second-order linear equations, superposition of solutions, independence, general solutions, non-homogeneous equations, phaseplane analysis, numerical methods, matrix methods for linear systems, and applications of differential equations to the physical, biological, and social sciences. (3-0-1) Prerequisite: Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103. Corequisite: MATH 221 is recommended.</td>
</tr>
<tr>
<td>MATH 303-101</td>
<td>MATH_O</td>
<td>Numerical Analysis</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Numerical techniques for basic mathematical processes and their analysis. Taylor polynomials, root-finding, linear systems, eigenvalues, approximating derivatives, locating minima, approximating integrals, solving differential equations. Credit will be granted for only one of MATH 303 or COSC 303. [3-1-0] Prerequisite: All of MATH 200, MATH 221 and either (a) COSC 111 or (b) DATA 301. Equivalency: COSC303</td>
</tr>
<tr>
<td>MATH 303-102</td>
<td>MATH_O</td>
<td>Numerical Analysis</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Numerical techniques for basic mathematical processes and their analysis. Taylor polynomials, root-finding, linear systems, eigenvalues, approximating derivatives, locating minima, approximating integrals, solving differential equations. Credit will be granted for only one of MATH 303 or COSC 303. [3-1-0] Prerequisite: All of MATH 200, MATH 221 and either (a) COSC 111 or (b) DATA 301. Equivalency: COSC303</td>
</tr>
<tr>
<td>MATH 317-001</td>
<td>MATH_O</td>
<td>Calculus IV</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Parametrizations, inverse and implicit functions, integrals with respect to length and area, grad, div, and curl and theorems of Green, Gauss, and Stokes. [3-0-1] Prerequisite: MATH 200.</td>
</tr>
<tr>
<td>MATH 340-001</td>
<td>MATH_O</td>
<td>Introduction to Linear Programming</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Linear programming problems, dual problems, the simplex algorithm, solution of primal and dual problems, sensitivity analysis. Additional topics chosen from: Karmarkar's algorithm, non-linear programming, game theory, applications. [3-0-0] Prerequisite: MATH 221.</td>
</tr>
<tr>
<td>MATH 350-001</td>
<td>MATH_O</td>
<td>Complex Variables and Applications</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Covers analytic functions, Cauchy-Riemann equations, power series, Laurent series, elementary functions, contour integrals, and poles and residues. Introduction to conformal mapping and applications of analysis to problems in physics and engineering. [3-0-0] Prerequisite: MATH 200.</td>
</tr>
<tr>
<td>MATH 432-I, 101</td>
<td>MATH_O</td>
<td>Special Topics in Algebra and Number Theory</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Students should consult the department for the particular topics offered in a given year. [3-0-0] Prerequisite: MATH 221. Third-year standing and permission of the department head.</td>
</tr>
<tr>
<td>MATH 448-A, 101</td>
<td>MATH_O</td>
<td>Directed Studies in Mathematics</td>
<td>W2</td>
<td>independently</td>
<td>Arranged</td>
<td>Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Students will be expected to complete a project and make an oral presentation. Prerequisite: 15 credits of 300- or 400-level MATH and STAT courses and permission of the department head and faculty supervisor.</td>
</tr>
<tr>
<td>MATH 448-C, 101</td>
<td>MATH_O</td>
<td>Directed Studies in Mathematics</td>
<td>W2</td>
<td>independently</td>
<td>Arranged</td>
<td>Mathematical modelling in biological disciplines such as population dynamics, ecology, pattern formation, tumour growth, immune response, biomechanics, and epidemiology. Theory of such models formulated as difference equations, ordinary differential equations, and partial differential equations. [3-0-0] Prerequisite: MATH 225, MATH 319 is recommended.</td>
</tr>
<tr>
<td>MATH 459-101</td>
<td>MATH_O</td>
<td>Mathematical Biology</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>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 464 or MATH 564. [3-0-0] Prerequisite: MATH 327.</td>
</tr>
<tr>
<td>MATH 464-101</td>
<td>MATH_O</td>
<td>Nonconvex Optimization</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>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 464 or MATH 564. [3-0-0] Prerequisite: MATH 327.</td>
</tr>
<tr>
<td>MATH 559-101</td>
<td>MATH_O</td>
<td>Mathematical Biology</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>Mathematical methods in modelling biological processes at levels from cell biochemistry to community ecology. [3-0-0]</td>
</tr>
<tr>
<td>MATH 564-101</td>
<td>MATH_O</td>
<td>Nonconvex Optimization</td>
<td>W2</td>
<td>Lecture</td>
<td>3-0-0</td>
<td>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 464 or MATH 564. [3-0-0] Prerequisite: MATH 327.</td>
</tr>
<tr>
<td>MATH 590-E, S01</td>
<td>MATH_O</td>
<td>Graduate Seminar</td>
<td>W2</td>
<td>Seminar</td>
<td>1-0-0</td>
<td>Presentation and discussion of recent results in the mathematical, statistical, or related literature. Credit may be obtained more than once. Pass/Fail. [0-0-1]</td>
</tr>
</tbody>
</table>

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

Thu

L07
9:30 a.m. - 11:00 a.m.

In Person Learning

Lecture

101
102
2:00 p.m. - 3:00 p.m.

W1A

In Person Learning

Laboratory

Sustainability and Business

Tue

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

W2

In Person Learning

Workshop

101

Laboratory

Sustainability and Business

Mon Wed

Laboratory

Workshop

101
9:00 a.m. - 10:00 a.m.

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

Tue

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

W2

In Person Learning

Workshop

L06

In Person Learning

W03
Business Conditions Analysis

Introduction to the Faculty of Management and traditional areas of business including accounting, economics, finance, marketing, organisational 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

W1A

Introduction to Business

In Person Learning

9:00 a.m. - 10:00 a.m.

MGMT_O 110-102

MGMT_O

102
Introduction to Management Thought and Social 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 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Fri 2:00 p.m. - 5:00 p.m.

MGMT_O 240-001

MGMT_O

001
Introduction to Management Communications. W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

MGMT_O 250-101

MGMT_O

101
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

MGMT_O 250-102

MGMT_O

102
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Wed 4:00 p.m. - 5:00 p.m.

MGMT_O 250-104

MGMT_O

04
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Thu 2:00 p.m. - 3:00 p.m.

MGMT_O 250-105

MGMT_O

05
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Mon 1:00 p.m. - 2:00 p.m.

MGMT_O 250-106

MGMT_O

06
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Tue 2:00 p.m. - 3:00 p.m.

MGMT_O 250-107

MGMT_O

07
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Wed 9:00 a.m. - 10:00 a.m.

MGMT_O 250-108

MGMT_O

08
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Thu 3:00 p.m. - 4:00 p.m.

MGMT_O 250-109

MGMT_O

09
Introduction to Information Technology Manage W2

If managerial issues and their impact on small and medium enterprises and their people. [3-1-0] Prerequisite: MGMT 100. Second-year standing and 3 credits of ENGL. Corequisite: MGMT 110. Lecture In Person Learning Fri 4:00 p.m. - 5:00 p.m.

MGMT_O 304-001

MGMT_O

001
Intermediate Financial Accounting II W2

Basic tools and concepts of macroeconomics; review of the non-market factors that influence the effective performance of organizations. [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 Tue Thu 11:00 a.m. - 12:30 p.m.

MGMT_O 360-001

MGMT_O

001
Business Conditions Analysis W2

Basic tools and concepts of macroeconomics; review of the non-market factors that influence the effective performance of organizations. [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 380-W01

MGMT_O

W01

Business Conditions Analysis W2

Basic tools and concepts of macroeconomics; review of the non-market factors that influence the effective performance of organizations. [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 380-101

MGMT_O

101
Sustainability and Business W2

Sustainable development issues and current thinking regarding sustainability and its implications for businesses and their managers. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Fri 12:00 p.m. - 2:00 p.m.

MGMT_O 380-W01

MGMT_O

W01

Sustainability and Business W2

Sustainable development issues and current thinking regarding sustainability and its implications for businesses and their managers. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Thu 11:00 a.m. - 12:00 p.m.

MGMT_O 380-W02

MGMT_O

W02

Sustainability and Business W2

Sustainable development issues and current thinking regarding sustainability and its implications for businesses and their managers. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Fri 8:00 a.m. - 9:00 a.m.

MGMT_O 380-W03

MGMT_O

W03

Sustainability and Business W2

Sustainable development issues and current thinking regarding sustainability and its implications for businesses and their managers. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Mon 4:00 p.m. - 5:00 p.m.

MGMT_O 380-W04

MGMT_O

W04

Sustainability and Business W2

Sustainable development issues and current thinking regarding sustainability and its implications for businesses and their managers. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Mon 11:00 a.m. - 12:00 p.m.

MGMT_O 380-W05

MGMT_O

W05

Sustainability and Business W2

Sustainable development issues and current thinking regarding sustainability and its implications for businesses and their managers. [3-0-0] Prerequisite: Two of MGMT 201, MGMT 202, MGMT 220, MGMT 230, MGMT 240, MGMT 250. Lecture In Person Learning Wed 1:00 p.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
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<tr>
<td>MGMT_O 403-001</td>
<td>Auditing and Assurance Services</td>
<td>W2</td>
<td></td>
<td>Focuses on the external auditor’s provision of assurance services on financial information. Topics include: society’s demand for assurance services; the role, profession, ethics, independence, and liability of the assurance provider; assurance risk and strategy; assurance planning, operations, and reports; computerization and internal control; and emerging assurance services. [3-0-0] Prerequisite: MGMT 304. Corequisite: Either (a) DATA 301 or (b) COSC 301.</td>
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<tr>
<td>MGMT_O 405-101</td>
<td>Advanced Managerial Accounting</td>
<td>W2</td>
<td></td>
<td>Examines the integrative and interdisciplinary role of managerial accounting and its contribution in the strategic management process, including analysis and managerial control. Focuses on cases that deal with management’s need for information planning and decision making. Develops analytical, communication, and presentation skills using contemporary management issues. [3-0-0] Prerequisite: MGMT 401. Corequisite: Either (a) DATA 301 or (b) COSC 301.</td>
</tr>
<tr>
<td>MGMT_O 410-002</td>
<td>Leadership in Complex Environments</td>
<td>W2</td>
<td></td>
<td>Examines of theoretical and practical approaches to leadership and conflict resolution. Topics covered include distinguishing between authority and leadership, technical problems and adaptive challenges, power and progress, diagnostic frameworks for assessment and strategies, and tactics of intervention to mobilize progress. Also explores the nature of conflict, its role in human social systems, and ways to address its negative impacts and harness its positive possibilities. [3-0-0] Prerequisite: MGMT 230 and third-year standing.</td>
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<tr>
<td>MGMT_O 412-101</td>
<td>Negotiations</td>
<td>W2</td>
<td></td>
<td>Explores, from a strategic perspective, Canadian and global businesses and their wider economic environment. Special emphasis on the impact of information technology used to enable outsourcing, offshoring and joint ventures in the conduct of global trade. Topics further include: government policy, global value chain analysis, and the benefits and demerits of outsourcing and/or offshoring. [3-0-0] Prerequisite: MGMT 290 and MGMT 355. Third-year standing.</td>
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<tr>
<td>MGMT_O 420-001</td>
<td>Project Management</td>
<td>W2</td>
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<td>Provides the knowledge and skills to successfully initiate, plan, manage, control, and report on projects. Conveys the importance of proper planning, documentation, scope and change control, and quality and risk management. Also covers the people skills required in the areas of team selection, structure, motivation, interviewing, presentation, conflict resolution, and leadership, all of which are critical factors in project management: [3-1-0] Prerequisite: One of MGMT 230, MGMT 250. Third-year standing.</td>
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<tr>
<td>MGMT_O 420-L01</td>
<td>Project Management</td>
<td>W2</td>
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<td>Provides the knowledge and skills to successfully initiate, plan, manage, control, and report on projects. Conveys the importance of proper planning, documentation, scope and change control, and quality and risk management. Also covers the people skills required in the areas of team selection, structure, motivation, interviewing, presentation, conflict resolution, and leadership, all of which are critical factors in project management: [3-1-0] Prerequisite: One of MGMT 230, MGMT 250. Third-year standing.</td>
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<tr>
<td>MGMT_O 422-L02</td>
<td>Project Management</td>
<td>W2</td>
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<td>Provides the knowledge and skills to successfully initiate, plan, manage, control, and report on projects. Conveys the importance of proper planning, documentation, scope and change control, and quality and risk management. Also covers the people skills required in the areas of team selection, structure, motivation, interviewing, presentation, conflict resolution, and leadership, all of which are critical factors in project management: [3-1-0] Prerequisite: One of MGMT 230, MGMT 250. Third-year standing.</td>
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<tr>
<td>MGMT_O 422-L03</td>
<td>Project Management</td>
<td>W2</td>
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<td>Provides the knowledge and skills to successfully initiate, plan, manage, control, and report on projects. Conveys the importance of proper planning, documentation, scope and change control, and quality and risk management. Also covers the people skills required in the areas of team selection, structure, motivation, interviewing, presentation, conflict resolution, and leadership, all of which are critical factors in project management: [3-1-0] Prerequisite: One of MGMT 230, MGMT 250. Third-year standing.</td>
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<td>MGMT_O 441-001</td>
<td>Marketing Strategy</td>
<td>W2</td>
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<td>Integrates, 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: [3-0-0] Prerequisite: MGMT 220 and third-year standing.</td>
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<tr>
<td>MGMT_O 441-W01</td>
<td>Marketing Strategy</td>
<td>W2</td>
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<td>Integrates, 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: [3-0-0] Prerequisite: MGMT 220 and third-year standing.</td>
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<td>MGMT_O 442-001</td>
<td>Consumer Behaviour</td>
<td>W2</td>
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<td>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: [3-0-0] Prerequisite: MGMT 220 and third-year standing.</td>
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<tr>
<td>MGMT_O 449-A_101</td>
<td>Special Topics in Marketing</td>
<td>W2</td>
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<td>Latest concepts and/or 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 439 when the subject matter is of the same nature. Prerequisite: Fourth-year standing.</td>
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<tr>
<td>MGMT_O 449-A_W01</td>
<td>Special Topics in Marketing</td>
<td>W2</td>
<td></td>
<td>Latest concepts and/or 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 439 when the subject matter is of the same nature. Prerequisite: Fourth-year standing.</td>
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<td>NLEK 331-001</td>
<td>Language Practice and Pedagogy: Praxis in Diff. W2</td>
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<td>NLEK 331-011</td>
<td>Language Practice and Pedagogy: Praxis in Diff. W2</td>
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<td>NLEK 351-001</td>
<td>Language Applications: Numeracy and Math W2</td>
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<td>NLEK 351-011</td>
<td>Language Applications: Numeracy and Math W2</td>
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<td>NLEK 483-001</td>
<td>Special Topics in Language Practice and Pedagogy W2</td>
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<td>NRSG 101-001</td>
<td>Nursing Lab Practice I</td>
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<td>NRSG 101-002</td>
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<td>NRSG 101-004</td>
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<td>NRSG 101-005</td>
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<td>NRSG 101-006</td>
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<td>NRSG 101-L02</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<tr>
<td>NRSG 101-L03</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<tr>
<td>NRSG 101-L04</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<tr>
<td>NRSG 101-L05</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<td>NRSG 101-L06</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<td>NRSG 101-L07</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<td>NRSG 101-L08</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<td>NRSG 101-L09</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<tr>
<td>NRSG 101-L10</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<tr>
<td>NRSG 101-L11</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<tr>
<td>NRSG 101-L12</td>
<td>Nursing Lab Practice I</td>
<td>W2</td>
<td>Corequisite: All of NRSG 126, NRSG 136.</td>
<td>Weekly concepts will align with NRSG 136 intentional learning activities. (0-3-1.5) Corequisite: All of NRSG 126, NRSG 136.</td>
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<td>Course Code</td>
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<td>Type</td>
<td>Date/Time</td>
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<tr>
<td>NRSG 136-P01</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>NRSG 136-P02</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
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<tr>
<td>NRSG 136-P03</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>NRSG 136-P04</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
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<tr>
<td>NRSG 136-P05</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
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<tr>
<td>NRSG 136-P06</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
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<td>NRSG 136-P07</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
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<td>NRSG 136-P08</td>
<td>Nursing Practice I</td>
<td>Experiential</td>
<td>Wed 7:00 a.m. - 1:00 p.m.</td>
<td>In Person Learning</td>
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<td>NRSG 136-P09</td>
<td>Nursing Practice I</td>
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<td>Wed 7:00 a.m. - 1:00 p.m.</td>
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<td>NRSG 101</td>
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<td>Fri</td>
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<tr>
<td>NRSG 102</td>
<td>Nursing Lab Practice III</td>
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<td>Thu</td>
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<tr>
<td>NRSG 103</td>
<td>Seminar</td>
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<td>NRSG 104</td>
<td>Nursing Practice I</td>
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<td>NRSG 105</td>
<td>Nursing Practice I</td>
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<td>Thu</td>
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<tr>
<td>NRSG 106</td>
<td>Seminar</td>
<td>Seminar</td>
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<td>NRSG 107</td>
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<td>NRSG 108</td>
<td>Nursing Lab Practice III</td>
<td>Experiential</td>
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<td>NRSG 109</td>
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<td>NRSG 110</td>
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<td>NRSG 111</td>
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<td>NRSG 112</td>
<td>Seminar</td>
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<td>NRSG 113</td>
<td>Nursing Practice I</td>
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<td>NRSG 114</td>
<td>Nursing Lab Practice III</td>
<td>Experiential</td>
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<td>NRSG 115</td>
<td>Seminar</td>
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<td>NRSG 116</td>
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<td>In Person Learning</td>
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<tr>
<td>NRSG 117</td>
<td>Nursing Lab Practice III</td>
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<td>NRSG 118</td>
<td>Seminar</td>
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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 120. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BIOL 131. Corequisite: All of NRSG 101, NRSG 120, NRSG 122, NRSG 123, NRSG 126.

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 120. The focus is on assessment, clinical reasoning, care planning, and documentation. Pass/Fail. [0-6-0] Prerequisite: All of HINT 110, NRSG 111, NRSG 112, NRSG 113, BIOL 131. Corequisite: All of NRSG 101, NRSG 120, NRSG 122, NRSG 123, NRSG 126.
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<th>Course Title</th>
<th>Units</th>
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<th>Corequisites</th>
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<tr>
<td>NRSG_O 228-002</td>
<td>Community Health</td>
<td>2</td>
<td>Lecture</td>
<td>Mon</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>All of BIOL 131, BIOL 133, and Second-Year BSN-O Standing Corequisite: NRSG 239.</td>
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<tr>
<td>NRSG_O 229-002</td>
<td>Mental Health in Nursing</td>
<td>2</td>
<td>Lecture</td>
<td>Mon</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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 229 intentional learning activities.</td>
<td></td>
</tr>
<tr>
<td>NRSG_O 237-P01</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Tue</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
</tr>
<tr>
<td>NRSG_O 237-P02</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Tue</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
</tr>
<tr>
<td>NRSG_O 237-P03</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Tue</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
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<tr>
<td>NRSG_O 237-P04</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Tue</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
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<tr>
<td>NRSG_O 237-P05</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Tue</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
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<tr>
<td>NRSG_O 237-P06</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Wed</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
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<tr>
<td>NRSG_O 237-P07</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Wed</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
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<tr>
<td>NRSG_O 237-P08</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Wed</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
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<tr>
<td>NRSG_O 237-P09</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Wed</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
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<tr>
<td>NRSG_O 237-P10</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Wed</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
</tr>
<tr>
<td>NRSG_O 237-P11</td>
<td>Nursing Practice III</td>
<td>2</td>
<td>Experiential</td>
<td>Thu</td>
<td>9:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>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. 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, BIOL 232.</td>
<td></td>
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</tbody>
</table>
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, BIOL 232.

NRSG 237-P12 | NRSG 237-P13 | P12 Nursing Practice III | W2 | W2 | Experiential | 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, BIOL 232.

NRSG 237-P14 | NRSG 237-P15 | P14 Nursing Practice III | W2 | W2 | Experiential | 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, BIOL 232.

NRSG 237-P16 | NRSG 237-P17 | P16 Nursing Practice III | W2 | W2 | Experiential | In Person Learning | Fri | 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, BIOL 232.

NRSG 237-P18 | NRSG 237-P19 | P18 Nursing Practice III | W2 | W2 | Experiential | In Person Learning | Fri | 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, BIOL 232.

NRSG 237-P20 | NRSG 238-P21 | P20 Nursing Practice III | W2 | W2 | Experiential | In Person Learning | Fri | 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-D Standing Corequisite: NRSG 228.

NRSG 238-P22 | NRSG 238-P23 | P22 Nursing Practice in Community | W2 | W2 | 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-D Standing Corequisite: NRSG 228.

NRSG 238-P24 | NRSG 238-P25 | P25 Nursing Practice in Community | W2 | W2 | Experiential | In Person Learning | Wed | 8:00 a.m. - 12:00 p.m.
NRSG 238-P15  P15  Nursing Practice in Community  W2
Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care. Health 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. 

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 228.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 228.
Experiential In Person Learning Thu 8:00 a.m. - 12:00 p.m.

NRSG 238-P17  P17  Nursing Practice in Community  W2
Practicum in community health nursing develops knowledge, skills, and abilities needed to provide safe ethical nursing care. Health 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. 

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 228.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 228.
Experiential In Person Learning Fri 8:00 a.m. - 12:00 p.m.

NRSG 238-P18  P18  Nursing Practice in Community  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Fri 8:00 a.m. - 12:00 p.m.

NRSG 239-P11  P11  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Tue 8:00 a.m. - 12:00 p.m.

NRSG 239-P12  P12  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Tue 8:00 a.m. - 12:00 p.m.

NRSG 239-P13  P13  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Wed 8:00 a.m. - 12:00 p.m.

NRSG 239-P14  P14  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Wed 8:00 a.m. - 12:00 p.m.

NRSG 239-P15  P15  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Thu 8:00 a.m. - 12:00 p.m.

NRSG 239-P17  P17  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Fri 8:00 a.m. - 12:00 p.m.

NRSG 239-P18  P18  Nursing Practice in Mental Health  W2
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 NRSU 229.

Corequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Prerequisite: All of BIOL 131, BIOL 133, and Second-Year SBN-O Standing Corequisite: NRSG 229.
Experiential In Person Learning Fri 8:00 a.m. - 12:00 p.m.

NRSG 302-P02  P02  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. 

Corequisite: All of NRSG 321, NRSG 326, NRSG 336, BIOL 231, BIOL 232.
Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 231, BIOL 232.
Experiential Seminar In Person Learning Mon 11:00 a.m. - 12:30 p.m.

NRSG 302-P03  P03  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. 

Corequisite: All of NRSG 321, NRSG 326, NRSG 336, BIOL 231, BIOL 232.
Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 231, BIOL 232.
Experiential Seminar In Person Learning Mon 11:00 a.m. - 12:30 p.m.

NRSG 302-L05  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. 

Corequisite: All of NRSG 301, NRSG 321, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 231, BIOL 232.
Prerequisite: All of NRSG 301, NRSG 321, NRSG 326, NRSG 336, BIOL 131, BIOL 133, HINT 231, BIOL 232.
Laboratory In Person Learning Mon 1:00 p.m. - 3:00 p.m.
<table>
<thead>
<tr>
<th>Course codes</th>
<th>Course title</th>
<th>Description</th>
<th>Days</th>
<th>Times</th>
<th>Location</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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</thead>
<tbody>
<tr>
<td>NRSG 326</td>
<td>Child Health Nursing within a Health Promotion Framework</td>
<td>Focuses on the unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339.</td>
<td>Mon, Wed</td>
<td>8:00 a.m. - 11:00 a.m., 11:00 a.m. - 2:00 p.m.</td>
<td>Lecture</td>
<td>3-0-0 (over 6 weeks)</td>
<td>Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 339.</td>
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<tr>
<td>NRSG 339</td>
<td>Intentional Learning Activities</td>
<td>Focuses on the unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339.</td>
<td>Mon, Wed</td>
<td>8:00 a.m. - 11:00 a.m., 11:00 a.m. - 2:00 p.m.</td>
<td>Lecture</td>
<td>3-0-0 (over 6 weeks)</td>
<td>Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 339.</td>
<td></td>
</tr>
<tr>
<td>NRSG 302-107</td>
<td>Nursing Lab Practice V</td>
<td>Develops evidence-informed nursing practice through seminar, laboratory, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings.</td>
<td>W2</td>
<td>11:00 a.m. - 2:00 p.m., 3:30 p.m. - 5:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>3:30 p.m. - 5:30 p.m.</td>
</tr>
<tr>
<td>NRSG 302-108</td>
<td>Nursing Lab Practice V</td>
<td>Develops evidence-informed nursing practice through seminar, laboratory, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings.</td>
<td>W2</td>
<td>11:00 a.m. - 2:00 p.m., 3:30 p.m. - 5:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>3:30 p.m. - 5:30 p.m.</td>
</tr>
<tr>
<td>NRSG 302-109</td>
<td>Nursing Lab Practice V</td>
<td>Develops evidence-informed nursing practice through seminar, laboratory, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings.</td>
<td>W2</td>
<td>11:00 a.m. - 2:00 p.m., 3:30 p.m. - 5:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>1:00 p.m. - 3:00 p.m.</td>
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<td>NRSG 302-110</td>
<td>Nursing Lab Practice V</td>
<td>Develops evidence-informed nursing practice through seminar, laboratory, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings.</td>
<td>W2</td>
<td>11:00 a.m. - 2:00 p.m., 3:30 p.m. - 5:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>1:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>NRSG 302-111</td>
<td>Nursing Lab Practice V</td>
<td>Develops evidence-informed nursing practice through seminar, laboratory, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings.</td>
<td>W2</td>
<td>11:00 a.m. - 2:00 p.m., 3:30 p.m. - 5:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>3:30 p.m. - 5:30 p.m.</td>
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<tr>
<td>NRSG 302-112</td>
<td>Nursing Lab Practice V</td>
<td>Develops evidence-informed nursing practice through seminar, laboratory, and simulation. Students advance knowledge, skills, and abilities in preparation to practice safe ethical nursing care in acute surgical settings.</td>
<td>W2</td>
<td>11:00 a.m. - 2:00 p.m., 3:30 p.m. - 5:30 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>3:30 p.m. - 5:30 p.m.</td>
</tr>
<tr>
<td>NRSG 301-003</td>
<td>Relational Practice V</td>
<td>Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [3-0-0 (over 6 weeks)] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, HINT 331. Corequisite: All of NRSG 302, NRSG 337.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>NRSG 301-004</td>
<td>Relational Practice V</td>
<td>Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [3-0-0 (over 6 weeks)] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, HINT 331. Corequisite: All of NRSG 302, NRSG 337.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>NRSG 301-005</td>
<td>Relational Practice V</td>
<td>Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [3-0-0 (over 6 weeks)] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, HINT 331. Corequisite: All of NRSG 302, NRSG 337.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Wed</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>NRSG 301-006</td>
<td>Relational Practice V</td>
<td>Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [3-0-0 (over 6 weeks)] Prerequisite: All of NRSG 301, NRSG 326, NRSG 336, HINT 331. Corequisite: All of NRSG 302, NRSG 337.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Fri</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>NRSG 327-002</td>
<td>Health &amp; Healing V</td>
<td>Focuses on the unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>NRSG 327-003</td>
<td>Health &amp; Healing V</td>
<td>Focuses on the unique needs of both children and families to inform holistic, ethical care. Concepts will align with NRSG 339.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<td>NRSG 328-003</td>
<td>Health of the Childbearing Family</td>
<td>Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [3-0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 338.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<td>NRSG 328-004</td>
<td>Health of the Childbearing Family</td>
<td>Continuation of NRSG 326. Evidence-informed assessment and management of complex health challenges in both episodic and chronic illness utilizing a case study approach. [3-0-0 (over 6 weeks)] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 338.</td>
<td>W2</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<td>Course Code</td>
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<tr>
<td>NRSG 337-P25</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Tue Wed</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P24</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Tue Wed</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<tr>
<td>NRSG 337-P23</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P22</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P21</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P20</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P19</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P18</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<tr>
<td>NRSG 337-P17</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<tr>
<td>NRSG 337-P16</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<tr>
<td>NRSG 337-P15</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P14</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P13</td>
<td>All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.</td>
<td>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. Prerequisite:</td>
<td>In Person Learning</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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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. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.
<table>
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<tr>
<th>Course Code</th>
<th>Section</th>
<th>Instructor</th>
<th>Title</th>
<th>Days</th>
<th>Time</th>
<th>Delivery</th>
<th>Prerequisites</th>
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<tr>
<td>NRSG 338-P28</td>
<td>P28</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P29</td>
<td>P29</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P30</td>
<td>P30</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P31</td>
<td>P31</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P32</td>
<td>P32</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P33</td>
<td>P33</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P34</td>
<td>P34</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P35</td>
<td>P35</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P36</td>
<td>P36</td>
<td>NRSG_O</td>
<td>Experiential Nursing Practice in Surgical Settings</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P21</td>
<td>P21</td>
<td>NRSG_O</td>
<td>Nursing Practice with Childbearing Families</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P22</td>
<td>P22</td>
<td>NRSG_O</td>
<td>Nursing Practice with Childbearing Families</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<td>NRSG 338-P23</td>
<td>P23</td>
<td>NRSG_O</td>
<td>Nursing Practice with Childbearing Families</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<td>NRSG 338-P24</td>
<td>P24</td>
<td>NRSG_O</td>
<td>Nursing Practice with Childbearing Families</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P25</td>
<td>P25</td>
<td>NRSG_O</td>
<td>Nursing Practice with Childbearing Families</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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<tr>
<td>NRSG 338-P26</td>
<td>P26</td>
<td>NRSG_O</td>
<td>Nursing Practice with Childbearing Families</td>
<td>Tue</td>
<td>7:00 a.m. - 3:00 p.m.</td>
<td>In Person Learning</td>
<td>Corequisite: NRSG 328. Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing.</td>
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</table>
NRSG_O 338-P17  NRSG_O
P17 Nursing Practice with Childbearing Families W2
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 326. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 328. Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

NRSG_O 338-P18  NRSG_O
P18 Nursing Practice with Childbearing Families W2
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 326. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 328. Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P09  NRSG_O
P09 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Tue 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P10  NRSG_O
P10 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Wed 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P11  NRSG_O
P11 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P12  NRSG_O
P12 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Thu 8:00 a.m. - 4:00 p.m.

NRSG_O 339-P13  NRSG_O
P13 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P14  NRSG_O
P14 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Tue 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P15  NRSG_O
P15 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Wed 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P16  NRSG_O
P16 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P17  NRSG_O
P17 Nursing Practice in Child Health W2
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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329. Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P18  NRSG_O
P18 Nursing Practice in Child Health W2
A comprehensive review of entry-level nursing knowledge, skills, and abilities in preparation for writing the nursing entry to practice regulatory examination. Through simulation and interactive case studies participants will have opportunities to apply previous learning and clinical reasoning to situations commonly seen in the first year of registered nursing practice. [3-0-0] Prerequisite: Fourth-Year BSN-O Standing Corequisite: All of NRSG 421, NRSG 422. Lecture In Person Learning Thu 11:00 a.m. - 2:00 p.m.

NRSG_O 421-002  NRSG_O
002 Capstone Review 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 Corequisite: All of NRSG 421, NRSG 422. Lecture In Person Learning Wed Fri 11:00 a.m. - 2:00 p.m.

NRSG_O 423-002  NRSG_O
002 Advanced Clinical Reasoning for Care of the Crit W2
Theory and research for evidence-informed practice for the assessment and care of the complex, unstable, acutely ill patient. Understanding challenging etiology, pathophysiology, manifestations, diagnostics and intervention to inform advanced clinical reasoning. [3-0-0] Prerequisite: NRSG 421. Fourth-Year BSN-O Standing Lecture In Person Learning Tue Thu 11:00 a.m. - 2:00 p.m.
NRSG 424-001  
NRSG 427-001  
NRSG 431-P07  
NRSG 431-P06  
NRSG 431-P09  
NRSG 431-P10  
NRSG 431-P11  
NRSG 431-P12  
NRSG 432-P03  
NRSG 432-P04  
NRSG 432-P05  
NRSG 434-B_P08  
NRSG 434-B_P09  
NRSG 434-B_P10  
NRSG 434-B_P11  

Primary Care Nursing I  
Advanced Mental Health  
Capstone Acute Care Preceptorship  
Capstone Acute Care Preceptorship  
Capstone Acute Care Preceptorship  
Capstone Acute Care Preceptorship  
Capstone Acute Care Preceptorship  
Capstone Acute Care Preceptorship  
Capstone Community Project  
Capstone Community Project  
Capstone Community Project  
Practice Electives  
Practice Electives  
Practice Electives  
Practice Electives  

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. Interprofessional collaborative care delivery models and modes of care will be examined. Credit will be granted for only one of NRSG 424 or NRSG 524. Prerequisite: Student in final year of a BSN, BScN, or BSNP program in Canada in good standing; or Registered Nurse/Registered Psychiatric Nurse with Baccalaureate Degree in Canada in good standing.

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 229, NRSG 239. Fourth-year BSN-O Standing.

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.

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.

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.

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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.

This practice course provides opportunity to experience evidenced-informed leadership through application of concepts such as influencing and managing change within the context of emerging global health issues and trends. [72 hours of practice and 24 hours of seminar]. Pass/Fail. [0-6-2] Prerequisite: Fourth-Year BSN-O Standing Corequisite: NRSG 422.

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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). Pass/Fail. *Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks]. Prerequisite: All of NRSG 423, NRSG 432, NRSG 432. a min of 3 credits of nursing electives related to practicum context, and recommendation of practice advising committee.

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Mental Health Preceptorship

Preceptored advanced practice experience(s) provides opportunities for evidence-informed practice with the client experiencing challenges with mental health. Application of knowledge, skills, and abilities from related advanced nursing theory course(s). Opportunity to work with interprofessional teams in a variety of settings. [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

Community Health Nursing Preceptorship

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 in a variety of settings. [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

Experiential

Global Health Practicum

Preceptored advanced practice experience(s) 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 is in

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Practice Electives

Preceptored advanced practice experience(s) 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 is in

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Experiential
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Type</th>
<th>Credits</th>
<th>Tuition</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>NRSG_O 439-P04</td>
<td>Global Health Practicum</td>
<td>In Person Learning</td>
<td>W2</td>
<td>Arranged</td>
<td>Program Coordinator</td>
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<td>NRSG_O 439-P14</td>
<td>Global Health Practicum</td>
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<td>W3</td>
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<td>Research Preceptorship</td>
<td>Experiential</td>
<td>W2</td>
<td>In Person Learning</td>
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<td>NRSG_O 507-001</td>
<td>Quantitative Research</td>
<td>Lecture</td>
<td>W2</td>
<td>Online Learning</td>
<td>Arranged</td>
</tr>
<tr>
<td>NRSG_O 513-001</td>
<td>Teaching and Learning in Nursing Practice</td>
<td>Lecture</td>
<td>W2</td>
<td>Online Learning</td>
<td>Arranged</td>
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<tr>
<td>NRSG_O 513-001</td>
<td>Nursing Leadership and Management in Practice</td>
<td>Lecture</td>
<td>W2</td>
<td>Online Learning</td>
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<td>NRSG_O 531-001</td>
<td>Language Practice and Pedagogy: Praxis in Diffuse</td>
<td>Lecture</td>
<td>W2</td>
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<td>NRSG_O 531-001</td>
<td>Language Practice and Pedagogy: Praxis in Diffuse</td>
<td>Laboratory</td>
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<td>NRSG_O 531-001</td>
<td>Language Applications: Numeracy and Math</td>
<td>Lecture</td>
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<td>NSYL_O 351-001</td>
<td>Special Topics in Language Practice and Pedagogy</td>
<td>Lecture</td>
<td>W2</td>
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<td>NSYL_O 351-001</td>
<td>Special Topics in Language Practice and Pedagogy</td>
<td>Laboratory</td>
<td>W2</td>
<td>In Person Learning</td>
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<td>NSYL_O 351-001</td>
<td>Introduction to Philosophy I</td>
<td>Lecture</td>
<td>W2</td>
<td>Online Learning</td>
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<td>NSYL_O 351-001</td>
<td>Introduction to Logic and Critical Thinking</td>
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<td>PHYS 121-102</td>
<td>Introductory Physics for the Physical Sciences II</td>
<td>3</td>
<td>Physics primarily for students majoring in the physical sciences. Simple harmonic motion, sound, and wave physics. Experiments.</td>
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<tr>
<td>PHYS 121-103</td>
<td>Introductory Physics for the Physical Sciences III</td>
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</tbody>
</table>

**PHIL 230-101**

Introduction to Social and Political Philosophy W2

Coursework includes: lectures, discussions, seminars, and written work. The course covers fundamental concepts in political philosophy, social theory, and the philosophy of law. Students will engage with key thinkers and theories in these areas, exploring themes such as the nature of justice, the state, and the role of law in society. The course aims to develop students' analytical and critical thinking skills, and to foster an understanding of the complex and often contentious issues that arise in the study of social and political philosophy.

Course Code: PHIL 230-101

Course Title: Introduction to Social and Political Philosophy

Instructor: [Instructor Name]

Course Schedule: Mon Wed 1:00 p.m. - 4:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, three assignments (25% each), and a research paper (20%).

**PHIL 235-101**

Philosophy in the 18th Century W2

This course examines the philosophy of the eighteenth century, focusing on the works of key thinkers such as Locke, Berkeley, and Hume. Students will explore themes such as mind-body dualism, empiricism, and the concept of personal identity. The course aims to provide a comprehensive understanding of the philosophical landscape of the late 18th century, and to encourage critical thinking and analytical skills.

Course Code: PHIL 235-101

Course Title: Philosophy in the 18th Century

Instructor: [Instructor Name]

Course Schedule: Mon Wed 12:30 p.m. - 2:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 245-101**

Introduction to Metaphysics W2

This course introduces students to the fundamental concepts of metaphysics, including topics such as reality, existence, and the nature of the world. The course covers major figures such as Aristotle, Spinoza, and Whitehead, and explores debates around the nature of the world, reality, and possibilities. The course aims to develop students' critical thinking skills and to foster an understanding of the philosophical landscape of metaphysics.

Course Code: PHIL 245-101

Course Title: Introduction to Metaphysics

Instructor: [Instructor Name]

Course Schedule: Mon Wed 11:00 a.m. - 1:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a group project (20%).

**PHIL 255-101**

The Philosophy of Plato W2

This course introduces students to the philosophy of Plato, focusing on his major works and the development of his thought. Students will explore themes such as Forms, the ideal state, and the relationship between the soul and the body. The course aims to provide a comprehensive understanding of Plato's philosophy and its relevance today.

Course Code: PHIL 255-101

Course Title: The Philosophy of Plato

Instructor: [Instructor Name]

Course Schedule: Mon Wed 3:30 p.m. - 5:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 315-101**

Survey of Eighteenth-Century Philosophy I W2

This course provides an overview of the philosophy of the eighteenth century, focusing on the works of key thinkers such as Locke, Berkeley, and Hume. Students will explore themes such as mind-body dualism, empiricism, and the concept of personal identity. The course aims to provide a comprehensive understanding of the philosophical landscape of the eighteenth century, and to encourage critical thinking and analytical skills.

Course Code: PHIL 315-101

Course Title: Survey of Eighteenth-Century Philosophy I

Instructor: [Instructor Name]

Course Schedule: Mon Wed 1:00 p.m. - 3:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 331-101**

Philosophy of Science I W2

This course introduces students to the philosophy of science, focusing on key concepts such as realism, instrumentalism, and the role of scientific method. Students will explore the relationship between science and philosophy, and the philosophical implications of scientific discoveries. The course aims to provide a comprehensive understanding of the philosophy of science and its relevance today.

Course Code: PHIL 331-101

Course Title: Philosophy of Science I

Instructor: [Instructor Name]

Course Schedule: Mon Wed 12:30 p.m. - 2:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 338-101**

Philosophy of Law W2

This course introduces students to the philosophy of law, focusing on key concepts such as legal realism, positivism, and natural law. Students will explore questions such as the nature of law, the role of law in society, and the relationship between law and morality. The course aims to provide a comprehensive understanding of the philosophy of law and its relevance today.

Course Code: PHIL 338-101

Course Title: Philosophy of Law

Instructor: [Instructor Name]

Course Schedule: Mon Wed 2:00 p.m. - 4:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 391-101**

Biomedical Ethics W2

This course introduces students to the ethical issues surrounding biomedical research, focusing on key concepts such as consent, confidentiality, and the role of the patient. Students will explore questions such as the ethics of research on human subjects, and the relationship between science and ethics. The course aims to provide a comprehensive understanding of the ethics of biomedical research and its relevance today.

Course Code: PHIL 391-101

Course Title: Biomedical Ethics

Instructor: [Instructor Name]

Course Schedule: Mon Wed 3:30 p.m. - 5:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 401-101**

Philosophy of Mind W2

This course introduces students to the philosophy of mind, focusing on key concepts such as the mind-body problem, consciousness, and the nature of the self. Students will explore questions such as the relationship between the mind and the brain, and the nature of personal identity. The course aims to provide a comprehensive understanding of the philosophy of mind and its relevance today.

Course Code: PHIL 401-101

Course Title: Philosophy of Mind

Instructor: [Instructor Name]

Course Schedule: Mon Wed 1:00 p.m. - 3:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 415-101**

Philosophy for the Physical Sciences I W2

This course introduces students to the philosophy of science, focusing on key concepts such as realism, instrumentalism, and the role of scientific method. Students will explore the relationship between science and philosophy, and the philosophical implications of scientific discoveries. The course aims to provide a comprehensive understanding of the philosophy of science and its relevance today.

Course Code: PHIL 415-101

Course Title: Philosophy for the Physical Sciences I

Instructor: [Instructor Name]

Course Schedule: Mon Wed 12:30 p.m. - 2:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).

**PHIL 420-101**

Philosophy of Science II W2

This course introduces students to the philosophy of science, focusing on key concepts such as realism, instrumentalism, and the role of scientific method. Students will explore the relationship between science and philosophy, and the philosophical implications of scientific discoveries. The course aims to provide a comprehensive understanding of the philosophy of science and its relevance today.

Course Code: PHIL 420-101

Course Title: Philosophy of Science II

Instructor: [Instructor Name]

Course Schedule: Mon Wed 1:00 p.m. - 3:00 p.m.

Course Location: [Location]

Assessment: Midterm exam, final exam, two assignments (25% each), and a research paper (25%).
Introductory Physics for the Physical Sciences II

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 Tue 2:30 p.m. - 5:30 p.m.

Introductory Physics for the Physical Sciences II

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

Introductory Physics for the Physical Sciences II

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 Wed 1:00 p.m. - 4:00 p.m.

Introductory Physics for the Physical Sciences II

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

Introductory Physics for the Physical Sciences II

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 Thu 9:30 a.m. - 12:30 p.m.

Introductory Physics for the Physical Sciences II

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 Thu 2:30 p.m. - 5:30 p.m.

Introductory Physics for the Physical Sciences II

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

Introductory Physics for the Physical Sciences II

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

Introductory Physics for the Physical Sciences II

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 Tue 3:00 p.m. - 4:00 p.m.

Introductory Physics for the Physical Sciences II

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 Wed 1:00 p.m. - 2:00 p.m.

Introductory Physics for the Physical Sciences II

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 Fri 8:00 a.m. - 9:00 a.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecture Type</th>
<th>Course Title</th>
<th>Credits</th>
<th>Days</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 121-101</td>
<td>Lecture</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>3-3-1</td>
<td>Mon</td>
<td>10:00 a.m. - 12:00 p.m.</td>
</tr>
<tr>
<td>PHYS 121-102</td>
<td>Laboratory</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>3-3-1</td>
<td>Mon</td>
<td>1:00 p.m. - 3:00 p.m.</td>
</tr>
<tr>
<td>PHYS 121-103</td>
<td>Laboratory</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>3-3-1</td>
<td>Mon</td>
<td>4:00 p.m. - 6:00 p.m.</td>
</tr>
<tr>
<td>PHYS 121-104</td>
<td>Laboratory</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>3-3-1</td>
<td>Mon</td>
<td>7:00 p.m. - 9:00 p.m.</td>
</tr>
<tr>
<td>PHYS 121-105</td>
<td>Laboratory</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>3-3-1</td>
<td>Mon</td>
<td>10:00 p.m. - 2:00 a.m.</td>
</tr>
<tr>
<td>PHYS 121-106</td>
<td>Laboratory</td>
<td>Introductory Physics for the Life Sciences II</td>
<td>3-3-1</td>
<td>Mon</td>
<td>1:00 a.m. - 3:00 a.m.</td>
</tr>
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</table>

**Course Description:**
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 103 and one of PHYS 111, PHYS 112. Conquisite: One of MATH 101, MATH 103.

**Discussion:**
In Person Learning Mon 2:00 p.m. - 3:00 p.m. | W2

**Discussion:**
In Person Learning Mon 1:00 p.m. - 2:00 p.m. | W2

**Discussion:**
In Person Learning Mon 5:00 p.m. - 6:30 p.m. | W2

**Discussion:**
In Person Learning Mon 2:30 p.m. - 5:30 p.m. | W2

**Discussion:**
In Person Learning Mon 6:30 p.m. - 9:30 p.m. | W2

**Discussion:**
In Person Learning Tue 9:30 a.m. - 12:30 p.m. | W2

**Discussion:**
In Person Learning Tue 2:30 p.m. - 5:30 p.m. | W2

**Discussion:**
In Person Learning Tue 6:30 p.m. - 9:30 p.m. | W2

**Discussion:**
In Person Learning Wed 9:30 a.m. - 12:30 p.m. | W2
PHYS_122-L07  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Wednesday 2:30 p.m. - 5:30 p.m.

PHYS_122-L08  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Wednesday 6:30 p.m. - 9:30 p.m.

PHYS_122-L09  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Thursday 9:30 a.m. - 12:30 p.m.

PHYS_122-L10  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Thursday 2:30 p.m. - 5:30 p.m.

PHYS_122-L11  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Thursday 6:30 p.m. - 9:30 p.m.

PHYS_122-L13  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Monday 2:30 p.m. - 5:30 p.m.

PHYS_122-L14  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Monday 6:30 p.m. - 9:30 p.m.

PHYS_122-L15  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Tuesday 9:30 a.m. - 12:30 p.m.

PHYS_122-L16  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Tuesday 2:30 p.m. - 5:30 p.m.

PHYS_122-L17  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Tuesday 6:30 p.m. - 9:30 p.m.

PHYS_122-L18  PHYS_O  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 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. Consequite: One of MATH 101, MATH 103.  Wednesday 9:30 a.m. - 12:30 p.m.

PHYS_122-TDA  TDA  Introductory Physics for the Life Sciences II  W2  Discussion  Thursday 1:00 p.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Section</th>
<th>Time</th>
<th>Location</th>
<th>Instructor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 122-TDB</td>
<td>PHYS_O</td>
<td>W2</td>
<td>10:00 a.m. - 11:00 a.m.</td>
<td></td>
<td>Introductory Physics for the Life Sciences II</td>
</tr>
</tbody>
</table>

| PHYS 122-TDC | PHYS_O | TDC | 1:00 p.m. - 2:00 p.m. | | | | Discussion | In Person Learning | Thu | 1:00 p.m. - 2:00 p.m. |

| PHYS 122-TDD | PHYS_O | TDD | 2:00 p.m. - 3:00 p.m. | | | | Discussion | In Person Learning | Tue | 2:00 p.m. - 3:00 p.m. |

| PHYS 122-TDE | PHYS_O | TDE | 4:00 p.m. - 5:00 p.m. | | | | Discussion | In Person Learning | Fri | 4:00 p.m. - 5:00 p.m. |

| PHYS 122-TDF | PHYS_O | TDF | 3:30 p.m. - 5:00 p.m. | | | | Laboratory | In Person Learning | Arranged | Arranged |

| PHYS 122-TDG | PHYS_O | TDG | | | | | | | |

| PHYS 122-XM1 | PHYS_O | XM1 | | | | | | | |

| PHYS 122-XM2 | PHYS_O | XM2 | | | | | | | |

| PHYS 200-001 | PHYS_O | 001 | | | | | | | |

<p>| PHYS 200-501 | PHYS_O | 501 | | | | | | | |</p>
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Department</th>
<th>Section Code</th>
<th>Location</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 232-L02</td>
<td>PHYS_O</td>
<td>L02</td>
<td>Modern Physics Laboratory</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Wed</td>
<td>11:00 a.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>PHYS 305-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Introduction to Biophysics</td>
<td>W03</td>
<td>Analysis of biological systems from a physicist's perspective. Introduction to physics underlying biological phenomena, and range of applicability of simple physical principles. Form and size in animals, strength and energy storage in structural elements, thermal regulation, fluid motion within organisms, life in fluids, and molecular biology topics. [3-0-0] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 328-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Advanced Mechanics</td>
<td>W02</td>
<td>Variational calculus, the Lagrangian Method applied to a variety of problems, weak anharmonic perturbations of normal-mode systems, Hamilton's equations of motion, phase space, Liouville's theorem, chaos in Hamiltonian systems, rigid-body rotations in three dimensions, Lagrangian formulation of relativistic mechanics, and the Virial theorem. [3-0-0] Prerequisite: All of MATH 200, MATH 221, MATH 225, PHYS 216.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 400-001</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Introduction to Elementary Particles</td>
<td>W02</td>
<td>The application of Maxwell's theory to the propagation of electromagnetic waves. [3-0-0] Prerequisite: PHYS 301.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 401-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Electromagnetic Theory</td>
<td>W02</td>
<td>Standard model, classification of elementary particles and forces of nature, symmetries, conservation laws, quark model, quantum electrodynamics, quantum chromodynamics, and the theory of weak interactions. [3-0-0] Prerequisite: PHYS 304.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 441-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Experimental Physics II</td>
<td>W02</td>
<td>Student designs and constructs a single experiment in solid-state physics, fluid dynamics, particle physics, astrophysics, optics or electromagnetism. Emphasis on experimental design, construction, and formal presentation of results. [0-3-1.5] Prerequisite: PHYS 331.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 441-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Experimental Physics II</td>
<td>W02</td>
<td>Student designs and constructs a single experiment in solid-state physics, fluid dynamics, particle physics, astrophysics, optics or electromagnetism. Emphasis on experimental design, construction, and formal presentation of results. [0-3-1.5] Prerequisite: PHYS 331.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 448-A_101</td>
<td>PHYS_O</td>
<td>A A_101</td>
<td>Directed Studies in Physics</td>
<td>W02</td>
<td>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.</td>
<td>Independent Study</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 448-A_102</td>
<td>PHYS_O</td>
<td>A A_102</td>
<td>Directed Studies in Physics</td>
<td>W02</td>
<td>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.</td>
<td>Independent Study</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 448-C_101</td>
<td>PHYS_O</td>
<td>C C_101</td>
<td>Directed Studies in Physics</td>
<td>W02</td>
<td>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.</td>
<td>Independent Study</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 448-C_102</td>
<td>PHYS_O</td>
<td>C C_102</td>
<td>Directed Studies in Physics</td>
<td>W02</td>
<td>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.</td>
<td>Independent Study</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 535-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Radiotherapy Physics II</td>
<td>W02</td>
<td>A continuation of PHYS 534. Covers the physics and applied dosimetry of current external and internal irradiation treatment techniques. Photon and electron beam radiation treatment planning. Brachytherapy and special techniques. Errors in radiation therapy. Prerequisite: PHYS 534.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 539-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Radiation Dosimetry</td>
<td>W02</td>
<td>The fundamentals of radiation dosimetry, ionization cavity theories, and radiation dosimetry protocols. A variety of absolute and relative dosimetry techniques are also covered, with hands-on experience provided through a series of lab exercises on medical linear accelerators. Monte Carlo simulation of radiation transport for dosimetry applications is introduced.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 544-001</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Radiation Biophysics</td>
<td>W02</td>
<td>Topics in radiation biophysics including DNA strand breaks, cell survival curves, fractionation and dose rate effects, oxygen effect, relative biological effectiveness, tumour radiobiology, radiation pathology, radiobiological modelling, stochastic and deterministic effects, and molecular techniques in radiobiology.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>PHYS 549-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Master’s Thesis</td>
<td>W02</td>
<td>Thesis</td>
<td>In Person Learning</td>
<td>Arranged</td>
</tr>
<tr>
<td>PHYS 649-101</td>
<td>PHYS_O</td>
<td>L01</td>
<td>Doctoral Dissertation</td>
<td>W02</td>
<td>Thesis</td>
<td>In Person Learning</td>
<td>Arranged</td>
</tr>
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**POLI 100-101** | POLI_O | L01 | Introduction to Politics | W02 | The investigation of a specific topic in politics may be undertaken under the direction of a Politics department staff member. Prerequisite: Permission of the department head. | Independent Study | In Person Learning | Arranged | Arranged |

**POLI 100-T2A** | POLI_O | T2A | Introduction to Politics | W02 | The investigation of a specific topic in politics may be undertaken under the direction of a Politics department staff member. Prerequisite: Permission of the department head. | Discussion | In Person Learning | Thu | 12:30 p.m. - 2:00 p.m. |

**POLI 100-T2B** | POLI_O | T2B | Introduction to Politics | W02 | The investigation of a specific topic in politics may be undertaken under the direction of a Politics department staff member. Prerequisite: Permission of the department head. | Discussion | In Person Learning | Thu | 11:00 a.m. - 12:30 p.m. |

**POLI 100-T2C** | POLI_O | T2C | Introduction to Politics | W02 | The investigation of a specific topic in politics may be undertaken under the direction of a Politics department staff member. Prerequisite: Permission of the department head. | Discussion | In Person Learning | Mon | 8:00 a.m. - 9:30 a.m. |

**POLI 100-T2D** | POLI_O | T2D | Introduction to Politics | W02 | The investigation of a specific topic in politics may be undertaken under the direction of a Politics department staff member. Prerequisite: Permission of the department head. | Discussion | In Person Learning | Wed | 5:00 p.m. - 6:30 p.m. |

**POLI 100-T2E** | POLI_O | T2E | Introduction to Politics | W02 | The investigation of a specific topic in politics may be undertaken under the direction of a Politics department staff member. Prerequisite: Permission of the department head. | Discussion | In Person Learning | Wed | 8:00 a.m. - 9:30 a.m. |

**POLI 210-101** | POLI_O | L01 | Introduction to Comparative Politics | W02 | Comparative analysis of domestic politics and institutions of foreign countries. Specific countries to be covered will vary according to section. Credit will be granted for only one of POLI 220 or POLI 210. [3-0-0] Equivalency: POLI 220. | Lecture | In Person Learning | Wed Fri | 3:30 p.m. - 5:00 p.m. |
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Year</th>
<th>Credits</th>
<th>Hours</th>
<th>Type</th>
<th>Session</th>
<th>Start Time</th>
<th>End Time</th>
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<tr>
<td>PSYO_311-001</td>
<td>Advanced Special Topics in Psychology</td>
<td>001</td>
<td>Memory</td>
<td>W2</td>
<td>Lecture</td>
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<td>PSYO_314-001</td>
<td>Non-Visual Perception</td>
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<td>PSYO_316-001</td>
<td>Psychology of Touch II</td>
<td>001</td>
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<td>PSYO_321-001</td>
<td>Child Development</td>
<td>001</td>
<td>W2</td>
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<td>Tue Thu</td>
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<td>PSYO_334-001</td>
<td>Neuroscience of Cognition</td>
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<td>PSYO_335-001</td>
<td>Drugs and Behaviour</td>
<td>001</td>
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<td>PSYO_348-101</td>
<td>Health Psychology</td>
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<td>PSYO_349-102</td>
<td>Positive Psychology</td>
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<td>11:00 a.m.</td>
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<tr>
<td>PSYO_354-101</td>
<td>Psychological Aspects of Human Sexuality II</td>
<td>101</td>
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<td>PSYO_356-001</td>
<td>Forensic Psychology II</td>
<td>001</td>
<td>W2</td>
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<td>In Person Learning</td>
<td>Mon</td>
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<td>PSYO_362-101</td>
<td>Psychology of Humour</td>
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<td>PSYO_373-001</td>
<td>Advanced Research Methods and Statistics</td>
<td>001</td>
<td>W3</td>
<td>Lecture</td>
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<td>Tue</td>
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<td>PSYO_420-A_002</td>
<td>Advanced Topics in Developmental Psychology</td>
<td>A</td>
<td>A_002</td>
<td>W2</td>
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<td>SOCI 111-101</td>
<td>Introduction to Sociology</td>
<td>3</td>
<td>Lecture</td>
<td>Thu</td>
<td>8:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
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<tr>
<td>SOCI 111-102</td>
<td>Introduction to Sociology</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<td>SOCI 209-101</td>
<td>Foundations of Sociological Thought</td>
<td>3</td>
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<td>11:00 a.m. - 1:30 p.m.</td>
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<td>SOCI 216-101</td>
<td>Media and Society</td>
<td>3</td>
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<td>12:30 p.m. - 2:00 p.m.</td>
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<td>SOCI 246-101</td>
<td>Sociology of Sports</td>
<td>3</td>
<td>Lecture</td>
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<td>11:00 a.m. - 1:30 p.m.</td>
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<tr>
<td>SOCI 249-101</td>
<td>Crime and Society</td>
<td>3</td>
<td>Lecture</td>
<td>Fri</td>
<td>11:00 a.m. - 12:30 p.m.</td>
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<td>SOCI 263-101</td>
<td>Political Sociology</td>
<td>3</td>
<td>Lecture</td>
<td>Thu</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>SOCI 305-101</td>
<td>Sociology of Families</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>12:30 p.m. - 2:00 p.m.</td>
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<tr>
<td>SOCI 362 B-101</td>
<td>Social Inequality</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
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<tr>
<td>SOCI 371 B-101</td>
<td>Deviance and Social Control</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>3:30 p.m. - 5:00 p.m.</td>
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<tr>
<td>SOCI 377-101</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
<td>Lecture</td>
<td>Fri</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>SOCI 411 C-101</td>
<td>Special Studies in Canadian Society</td>
<td>3</td>
<td>Seminar</td>
<td>Mon</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<td>SOCI 415-101</td>
<td>Feminist Theory</td>
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<td>2:00 p.m. - 5:00 p.m.</td>
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<td>SOCI 465-101</td>
<td>Nations and Nationalisms</td>
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<tr>
<td>SOCI 496 B-101</td>
<td>Advanced Studies in Sociology</td>
<td>3</td>
<td>Seminar</td>
<td>Fri</td>
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<tr>
<td>SOCI 513-001</td>
<td>Assessment Skills for Clinical Social Work</td>
<td>3</td>
<td>Seminar</td>
<td>Mon</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>SOCI 513-002</td>
<td>Assessment Skills for Clinical Social Work</td>
<td>3</td>
<td>Seminar</td>
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<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>SOCI 515-001</td>
<td>Social Welfare Policy in Canada</td>
<td>3</td>
<td>Seminar</td>
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<tr>
<td>SOCI 518-001</td>
<td>Integrative Seminar for Field Education</td>
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<tr>
<td>SOCI 518-002</td>
<td>Integrative Seminar for Field Education</td>
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<tr>
<td>SOCI 525-001</td>
<td>Human Development for Clinical Social Work</td>
<td>3</td>
<td>Lecture</td>
<td>Wed</td>
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<td>In Person Learning</td>
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<tr>
<td>SOCI 531-001</td>
<td>Anti-Racist and Anti-Oppressive Clinical Practice</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>11:00 a.m. - 2:00 p.m.</td>
<td>In Person Learning</td>
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**Notes:**
- **In Person Learning** indicates face-to-face classroom instruction.
- **Online Learning** indicates coursework completed online.
- **Arranged** indicates a specific time is not available.
- **Restricted** indicates enrollment is limited to specific student groups or majors.
- **Pass/Fail** indicates students will receive a pass or fail in the course.
SOCW_O 555-001
Research Knowledge and Evidence in Clinical Soc 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.

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.

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.

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.

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.

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 599-002
Thesis W2
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_O 102-001
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 102-002
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 102-003
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 102-004
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
Advanced Beginners’ Spanish II W2
Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

SPAN_O 202-002
Advanced Beginners’ Spanish II W2
Lecture In Person Learning Mon Wed Fri 12:00 p.m. - 1:00 p.m.

SPAN_O 302-001
Intermediate Spanish II W2
Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

SPAN_O 402-001
Advanced Spanish II W2
Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.

STAT_O 121-101
Elementary Statistics W2
Descriptive and inferential statistics, elementary probability, probability distributions, estimation of parameters, hypotheses 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 125, MATH 126 or (b) a score of 67% or higher in one of MATH 12, PREC 12.
Lecture In Person Learning Mon Wed Fri 3:30 p.m. - 5:00 p.m.

STAT_O 124-101
Business 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 210. [3-0-0] Prerequisite: STAT 203.
Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

STAT_O 205-101
Introduction to Mathematical Statistics W2
Applied statistics for students with a first-year calculus background. Estimation and testing of hypotheses, problem formulation, models and basic methods in analysis of variance, regression and non-parametric methods. Descriptive statistics and probability are presented as a basis for such procedures. [3-0-0] Prerequisite: One of MATH 101, MATH 103, MATH 142 and one of DATA 101, COSC 221.
Lecture In Person Learning Mon Wed Fri 12:00 p.m. - 2:00 p.m.

STAT_O 230-101
Introductory Statistics W2
Theory of statistical modelling: distributions of data, likelihood-based inference for learning unknown parameters, construction of confidence intervals and development of tests. Bayesian methods will be used to contrast standard statistical procedures. [3-0-0] Prerequisite: STAT 305.
Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:30 p.m.

STAT_O 401-101
Probability and Statistical Inference 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, Foundations of Mathematics 12.
Lecture In Person Learning Mon Wed Fri 12:30 p.m. - 2:00 p.m.

STAT_O 403-001
Stochastic Processes 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 Mon Wed 3:30 p.m. - 5:00 p.m.

STAT_O 507-101
Sampling and Design W2
Experimental design review. Credit will be granted for only one of DATA 407, or STAT 507.
Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:30 p.m.

STAT_O 538-101
Advanced Statistical Modelling 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] Prerequisite: One of MATH 101, MATH 103, MATH 142.
Lecture In Person Learning Mon Wed Fri 3:30 p.m. - 5:00 p.m.

STAT_O 547J_101
Topics in Statistics W2
Topics chosen from different areas within the field of statistics, such as time series, longitudinal and multi-level modelling, 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] Prerequisite: STAT 303.
Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.
STAT 560-001: Probability and Stochastic Processes  
- Course description: 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 200-101: Sustainability: People, Place, and Process  
- Course description: 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  
- Mon Wed 8:00 a.m. - 9:30 a.m.

VISA 204-001: Creative Communication and Engagement  
- Course description: Introduces core principles and techniques required for the creation of two-dimensional digital animation and experimental approaches. A 35mm SLR film camera and tripod are required. [2-2-0] Prerequisite: VISA 244.  
- Lecture: In Person Learning  
- Mon Wed 2:00 p.m. - 6:00 p.m.

SUST 205-001: Sustainability Economics  
- Course description: Explores contrasts 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.

VISA 105-101: Achieving Sustainability at the Regional Scale  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Tue Thu 2:00 p.m. - 3:30 p.m.

THTR 303-010: Acting for Stage and Screen  
- Course description: Introduction to acting techniques pertaining to the style of psychological realism for stage and screen. Credit will be granted for only one of THTR 103 or FILM 103. [3 hours/week studio] Equivalency: FILM 103  
- Studio: In Person Learning  
- Mon 2:00 p.m. - 5:00 p.m.

THTR 104-001: The Art of Public Speaking  
- Course description: Introduces core principles and techniques required for the creation of two-dimensional digital animation and experimental approaches. A 35mm SLR film camera and tripod are required. [2-2-0] Prerequisite: VISA 244.  
- Lecture: In Person Learning  
- Fri 2:00 p.m. - 5:00 p.m.

THTR 204-001: Creative Communication and Engagement  
- Course description: Introduces core principles and techniques required for the creation of two-dimensional digital animation and experimental approaches. A 35mm SLR film camera and tripod are required. [2-2-0] Prerequisite: VISA 244.  
- Lecture: In Person Learning  
- Tue 5:00 p.m. - 8:00 p.m.

THTR 213-010: Creativity as Source & Resource  
- Course description: 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 304-001: World Theatre and Cultural Performance  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Fri 11:00 a.m. - 2:00 p.m.

THTR 384-001: Spoken Word  
- Course description: Introduces core principles and techniques required for the creation of two-dimensional digital animation and experimental approaches. A 35mm SLR film camera and tripod are required. [2-2-0] Prerequisite: VISA 244.  
- Lecture: In Person Learning  
- Wed 11:00 a.m. - 2:00 p.m.

VGRS 559-002: Visiting Graduate Research Students  
- Course description: 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  
- Independent Study  
- In Person Learning  
- Arranged

VISA 200-010: Safety Training  
- Course description: 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.

VISA 233-001: Drawing and Two-Dimensional Art Practices II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 235-001: Three-Dimensional Art Practices II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 236-001: Three-Dimensional Art Practices II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 237-001: Introduction to Digital Media II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 238-001: Introduction to Digital Media II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 239-001: Introduction to Digital Media II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 240-001: Introduction to Digital Media II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 250-001: Photography II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 251-001: 2D Animation  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 252-001: 2D Animation  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 253-001: Printmaking: Screenprinting II  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 254-001: Introduction to Printmaking: Etching and Lithogr  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 256-001: 2D Animation  
- Course description: Expands on digital media in contemporary art practices through computer imaging, animation, and other emerging digital technologies. [1-3-0] Prerequisite: VISA 106.  
- Lecture: In Person Learning  
- Thu 3:30 p.m. - 5:30 p.m.

VISA 260-001: Strategies in Digital Art: Virtual Worlds  
- Course description: Critical understanding and research-creation of virtual environments employing non-linear storytelling, media aesthetics, modeling, animation, interaction design and coding using 3D modeling software. [3-0-0] Prerequisite: VISA 108.  
- Lecture: In Person Learning  
- Fri 8:00 a.m. - 12:00 p.m.
<table>
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<tr>
<th>Code</th>
<th>Course Title</th>
<th>Schedule</th>
<th>Location</th>
<th>Credit Hours</th>
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<tr>
<td>VISA_O 271-101</td>
<td>Video II</td>
<td>11:00 a.m. - 12:30 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>VISA_O 283-001</td>
<td>Drawing IV</td>
<td>12:30 p.m. - 2:00 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 300_X-101</td>
<td>Advanced Practice in Drawing</td>
<td>2:00 p.m. - 6:00 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 313_C-101</td>
<td>Advanced Practice in Painting</td>
<td>9:30 a.m. - 1:30 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 312_D-101</td>
<td>Advanced Practice in Painting</td>
<td>2:00 p.m. - 6:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>VISA_O 322_C-101</td>
<td>Advanced Practice in Sculpture</td>
<td>8:30 a.m. - 12:30 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 336_C-101</td>
<td>Advanced Practice in Printmaking</td>
<td>2:00 p.m. - 6:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>VISA_O 362_X-001</td>
<td>Advanced Practice in Photography</td>
<td>5:00 p.m. - 9:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>VISA_O 382-A-101</td>
<td>Advanced Practice in Media Arts</td>
<td>8:00 p.m. - 12:00 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 383_X-001</td>
<td>Advanced Practice in Media Arts</td>
<td>10:00 a.m. - 2:00 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 483-001</td>
<td>Advanced Art Practices II</td>
<td>10:00 a.m. - 4:00 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>VISA_O 499-002</td>
<td>Visiting Undergraduate Research Students</td>
<td>10:00 a.m. - 4:00 p.m.</td>
<td>Independent Study</td>
<td>3</td>
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<tr>
<td>WRLD_O 150-101</td>
<td>Introduction to Intercultural Communication</td>
<td>10:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>WRLD_O 158-101</td>
<td>Introduction to Language and Culture: Modern I</td>
<td>10:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>WRLD_O 200-001</td>
<td>Introduction to World Literatures</td>
<td>10:00 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>WRLD_O 204-001</td>
<td>World Theatre and Cultural Performance</td>
<td>11:00 a.m. - 2:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>WRLD_O 310-001</td>
<td>Mythologies in Motion</td>
<td>11:00 a.m. - 2:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>WRLD_O 357-001</td>
<td>Encountering India: The Age of the Mughals</td>
<td>6:00 p.m. - 7:30 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>WRLD_O 382-001</td>
<td>Cross-cultural Travel Narratives</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>WRLD_O 428-101</td>
<td>Anti-Semitism: Then and Now</td>
<td>11:00 a.m. - 12:30 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>ANTH_O 100-001</td>
<td>Introduction to Cultural Anthropology</td>
<td>6:00 p.m. - 7:30 p.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>ANTH_O 100-002</td>
<td>Introduction to Cultural Anthropology</td>
<td>3:30 p.m. - 5:00 p.m.</td>
<td>In Person Learning</td>
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<td>ANTH_O 100-003</td>
<td>Introduction to Cultural Anthropology</td>
<td>12:30 p.m. - 2:30 p.m.</td>
<td>In Person Learning</td>
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<td>ANTH_O 103-001</td>
<td>Introduction to World Archaeology</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>In Person Learning</td>
<td>3</td>
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<tr>
<td>ANTH_O 170-001</td>
<td>Introduction to Linguistic Anthropology</td>
<td>5:00 p.m. - 6:30 p.m.</td>
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<td>Course Code</td>
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<tr>
<td>ANTH_O 210-001</td>
<td>Archaeological Inquiry and Practice</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed, 9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>ANTH_O 218-001</td>
<td>Tourism, Desire and Difference</td>
<td>Lecture, In Person Learning</td>
<td>Tue Thu, 6:30 p.m. - 9:00 p.m.</td>
<td>Mon Wed, 3:30 p.m. - 5:00 p.m.</td>
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<td>ANTH_O 227-001</td>
<td>Introduction to Medical Anthropology</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue Thu, 11:00 a.m. - 12:30 p.m.</td>
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<td>ANTH_O 245-001</td>
<td>Culture and Environment</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed, 12:30 p.m. - 2:00 p.m.</td>
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<tr>
<td>ANTH_O 252-001</td>
<td>Visual Anthropology and New Media</td>
<td>Lecture, In Person Learning</td>
<td>Tue Thu, 2:00 p.m. - 3:30 p.m.</td>
<td>Mon Wed, 11:00 a.m. - 12:30 p.m.</td>
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<tr>
<td>ANTH_O 270-001</td>
<td>Phonology</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue Thu, 12:30 p.m. - 2:00 p.m.</td>
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<td>ANTH_O 307-001</td>
<td>Ethnographic Methods: Acquiring Research Skills</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed, 12:30 p.m. - 2:00 p.m.</td>
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<tr>
<td>ANTH_O 313-001</td>
<td>Anthropology of Gender</td>
<td>Lecture, Online Learning</td>
<td>Tue Thu, 3:30 p.m. - 5:00 p.m.</td>
<td>Mon Wed, 9:30 a.m. - 11:00 a.m.</td>
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<td>ANTH_O 345-001</td>
<td>Living in the Anthropocene</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue Thu, 9:30 a.m. - 11:00 a.m.</td>
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<td>ANTH_O 373-001</td>
<td>The Acquisition of Language and Cultural Practice</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed, 11:00 a.m. - 12:30 p.m.</td>
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<td>ANTH_O 400-001</td>
<td>History of Anthropology</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Fri, 11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>ANTH_O 409-D_001</td>
<td>Topics in Applied Anthropology</td>
<td>Multi-access Learning</td>
<td>Tue, 6:30 p.m. - 9:30 p.m.</td>
<td>Mon Wed, 9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>ANTH_O 429-001</td>
<td>Global Health and International Development</td>
<td>Lecture</td>
<td>Online Learning</td>
<td>Tue Thu, 12:30 p.m. - 2:00 p.m.</td>
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<td>ANTH_O 445-001</td>
<td>Political Ecology</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed, 12:30 p.m. - 2:00 p.m.</td>
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<td>ANTH_O 473-001</td>
<td>Endangered Language Documentation and Revital</td>
<td>Lecture, Multi-access Learning</td>
<td>Thu, 5:00 p.m. - 8:00 p.m.</td>
<td>Mon Wed, 9:30 a.m. - 11:00 a.m.</td>
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<td>APSC_O 107-001</td>
<td>Introduction to Applied Science Co-op</td>
<td>Workshop</td>
<td>In Person Learning</td>
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<tr>
<td>APSC_O 110-71C</td>
<td>Co-operative Education Work Term I</td>
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<td>APSC_O 110-71E</td>
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<td>Lecture, Experiential Learning</td>
<td>Arranged</td>
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Engineering Communication

In Person Learning

W1 8:00 a.m. - 9:30 a.m.

Statistics

Lecture

108 Engineering Communication

Discussion

In Person Learning

W1 8:00 a.m. - 10:00 a.m.

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]


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]

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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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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<th>Lecture Type</th>
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<th>Description</th>
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<td>APSC 180-T1K</td>
<td>TKE</td>
<td>Statics</td>
<td>W1</td>
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<tr>
<td>APSC 180-T2H</td>
<td>TKE</td>
<td>Statics</td>
<td>W1</td>
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<tr>
<td>APSC 180-T2L</td>
<td>LKE</td>
<td>Statics</td>
<td>W1</td>
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<td>APSC 180-T2L</td>
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<td>APSC 181-T1E</td>
<td>L1E</td>
<td>Statics</td>
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<td>APSC 181-T1F</td>
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<tr>
<td>APSC 181-T1G</td>
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<td>APSC 181-T1H</td>
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<td>W1</td>
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<tr>
<td>APSC 181-T1I</td>
<td>L1I</td>
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<tr>
<td>APSC 181-T1J</td>
<td>L1J</td>
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<td>APSC 181-T1K</td>
<td>T1K</td>
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<td>APSC 181-T1M</td>
<td>L1M</td>
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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 110. Experiential Learning.
APSC_O 210-T1E APSC_O 71E Co-operative Education Work Term II WS 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. Experiential In Person Learning Arranged Arranged

APSC_O 210-T1F APSC_O 71F Co-operative Education Work Term II WS 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. Experiential In Person Learning Arranged Arranged

APSC_O 210-T1M APSC_O 71M Co-operative Education Work Term II WS 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. Experiential In Person Learning Arranged Arranged

APSC_O 246-101 APSC_O 101 System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

APSC_O 246-102 APSC_O 102 System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Lecture In Person Learning Tue Thu 6:30 p.m. - 8:00 p.m.

APSC_O 246-T1A APSC_O 71A System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Wed 1:00 p.m. - 2:00 p.m.

APSC_O 246-T1B APSC_O 71B System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Fri 10:00 a.m. - 11:00 a.m.

APSC_O 246-T1C APSC_O 71C System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Fri 11:00 a.m. - 12:00 p.m.

APSC_O 246-T1D APSC_O 71D System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Thu 10:00 a.m. - 11:00 a.m.

APSC_O 246-T1E APSC_O 71E System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Wed 5:00 p.m. - 6:00 p.m.

APSC_O 246-T1F APSC_O 71F System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Fri 9:00 a.m. - 10:00 a.m.

APSC_O 246-T1G APSC_O 71G System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Tue 10:00 a.m. - 11:00 a.m.

APSC_O 246-T1H APSC_O 71H System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Wed 11:00 a.m. - 12:00 p.m.

APSC_O 246-T1I APSC_O 71I System Dynamics WS 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 transforms. [3-0-1] Prerequisite: All of APSC 173, APSC 179, APSC 181. Discussion In Person Learning Mon 11:00 a.m. - 12:00 p.m.

APSC_O 248-101 APSC_O 101 Engineering Analysis III WS Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl, gradient; divergence and Stokes’ theorem; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

APSC_O 248-102 APSC_O 102 Engineering Analysis III WS Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl, gradient; divergence and Stokes’ theorem; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173. Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

APSC_O 248-T1A APSC_O 71A Engineering Analysis III WS Multivariable functions, Lagrange multipliers; line integrals, surface integrals, volume integrals; divergence, curl, gradient; divergence and Stokes’ theorem; engineering applications of vector field theory. Introduction to partial differential equations. [3-0-1] Prerequisite: APSC 173. Discussion In Person Learning Mon 8:00 a.m. - 9:00 a.m.
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]

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of 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: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of 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: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of APSC 173, APSC 182.

First and second laws of thermodynamics. Applications to simple thermodynamic processes and cycles.

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.

Introduction to heat transfer modes. [3-0-1] Prerequisite: All of APSC 173, APSC 182.
Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

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

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

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

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

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

Discussion In Person Learning Fri 8:00 a.m. - 9:00 a.m.

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

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

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

Discussion In Person Learning Thu 10:00 a.m. - 11:00 a.m.

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

Discussion In Person Learning Tue 10:00 a.m. - 11:00 a.m.

Discussion In Person Learning Fri 3:00 p.m. - 4:00 p.m.

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

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

Laboratory In Person Learning Tue 10:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Mon 5:00 p.m. - 6:00 p.m.

Laboratory In Person Learning Thu 10:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Fri 4:00 p.m. - 5:00 p.m.

Laboratory In Person Learning Wed 8:00 a.m. - 9:00 a.m.

Laboratory In Person Learning Fri 1:00 p.m. - 2:00 p.m.


differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.

Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems: [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179.
<p>| APSC 256-L1G | APSC_O | L1G | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Thu | 10:00 a.m. - 11:00 a.m. |
| APSC 256-L1H | APSC_O | L1H | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Thu | 4:00 p.m. - 5:00 p.m. |
| APSC 256-L1I | APSC_O | L1I | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Wed | 5:00 p.m. - 6:00 p.m. |
| APSC 256-L1J | APSC_O | L1J | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Thu | 10:00 a.m. - 11:00 a.m. |
| APSC 256-L1K | APSC_O | L1K | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Wed | 5:00 p.m. - 6:00 p.m. |
| APSC 256-L1L | APSC_O | L1L | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Wed | 5:00 p.m. - 6:00 p.m. |
| APSC 256-L1M | APSC_O | L1M | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Fri | 4:00 p.m. - 5:00 p.m. |
| APSC 256-L1N | APSC_O | L1N | Numerical Methods for Analysis | WS  | Introduction to numerical modelling and numerical methods for root finding, linear systems, differentiation, integration, and ordinary and partial differential equations. Applications to engineering problems. [3-1-0] Prerequisite: All of APSC 173, APSC 177, APSC 179. | Laboratory | In Person Learning | Fri | 4:00 p.m. - 5:00 p.m. |
| APSC 259-201 | APSC_O | 201 | Materials Science I | WS  | 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. | Lecture | In Person Learning | Tue Thu | 12:30 p.m. - 2:00 p.m. |
| APSC 259-202 | APSC_O | 202 | Materials Science I | WS  | 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. | Lecture | In Person Learning | Tue Thu | 11:00 a.m. - 12:30 p.m. |
| APSC 259-12A | APSC_O | 12A | Materials Science I | WS  | 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 | Wed (Alternate weeks) | 6:00 p.m. - 8:00 p.m. |
| APSC 259-12B | APSC_O | 12B | Materials Science I | WS  | 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 | Wed (Alternate weeks) | 6:00 p.m. - 8:00 p.m. |
| APSC 259-12C | APSC_O | 12C | Materials Science I | WS  | 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) | 5:00 p.m. - 7:00 p.m. |
| APSC 259-12D | APSC_O | 12D | Materials Science I | WS  | 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) | 5:00 p.m. - 7:00 p.m. |
| APSC 259-12E | APSC_O | 12E | Materials Science I | WS  | 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 | Wed (Alternate weeks) | 12:00 p.m. - 2:00 p.m. |
| APSC 259-12F | APSC_O | 12F | Materials Science I | WS  | 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 | Wed (Alternate weeks) | 12:00 p.m. - 2:00 p.m. |
| APSC 259-12G | APSC_O | 12G | Materials Science I | WS  | 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 | Mon (Alternate weeks) | 12:00 p.m. - 2:00 p.m. |
| APSC 259-12H | APSC_O | 12H | Materials Science I | WS  | 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 | Mon (Alternate weeks) | 12:00 p.m. - 2:00 p.m. |
| APSC 259-12I | APSC_O | 12I | Materials Science I | WS  | 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. |</p>
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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 210.
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<td>APSC_401-001</td>
<td>Construction Digitalization and Informatics</td>
<td>WS</td>
<td>001</td>
<td>Construction Digitalization</td>
<td>Lecture</td>
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<td>Tue Thu</td>
<td>11:00 a.m. - 12:30 p.m.</td>
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<td>APSC_410-001</td>
<td>Engineering Internship I</td>
<td>WS</td>
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<td>ARTH_010-001</td>
<td>Art and Visual Cultures of the World</td>
<td>WS</td>
<td>001</td>
<td>Art and Visual Cultures</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Tue Thu</td>
<td>8:00 a.m. - 9:30 a.m.</td>
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<td>ARTH_020-001</td>
<td>The Critical Viewer</td>
<td>WS</td>
<td>001</td>
<td>The Critical Viewer</td>
<td>Lecture</td>
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<td>Mon Thu</td>
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<td>ARTH_030-001</td>
<td>Critical Viewing - Advanced Studies</td>
<td>WS</td>
<td>001</td>
<td>Critical Viewing - Advanced Studies</td>
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<td>Wed Fri</td>
<td>9:30 a.m. - 11:00 a.m.</td>
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<td>ARTH_030-002</td>
<td>Performance Art: Global Perspectives</td>
<td>WS</td>
<td>001</td>
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<td>Lecture</td>
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<td>2:00 p.m. - 5:00 p.m.</td>
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<td>ARTH_030-003</td>
<td>Selected Topics</td>
<td>WS</td>
<td>B B_001</td>
<td>Selected Topics</td>
<td>Lecture</td>
<td>Online Learning</td>
<td>Wed Fri</td>
<td>12:30 p.m. - 2:00 p.m.</td>
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ARTH_O 370-001  ARTH_O 001  Story and Image Across the Islamic World  WS 3 0 0  Lecture  In Person Learning  Mon Wed 6:30 p.m. - 8:00 p.m.

ARTH_O 380-001  ARTH_O 001  African Art and Visual Culture  WS 3 0 0  Lecture  In Person Learning  Wed Fri 11:00 a.m. - 12:30 p.m.

ARTH_O 390-001  ARTH_O 001  Indigenous Art and Visual Culture  WS 3 0 0  Lecture  In Person Learning  Tue Thu 12:30 p.m. - 2:00 p.m.

ARTH_O 395-001  ARTH_O 001  Renaissance Europe in a Global Context  WS 3 0 0  Lecture  In Person Learning  Tue Thu 8:00 a.m. - 9:30 a.m.

ARTH_O 397-001  ARTH_O 001  Latin American Art and Visual Culture Since 1521  WS 3 0 0  Lecture  In Person Learning  Tue Fri 2:00 p.m. - 3:30 p.m.

ARTH_O 420-001  ARTH_O 001  Curating Contemporary Art  WS 3 0 0  Seminar  In Person Learning  Mon Thu 11:00 a.m. - 12:30 p.m.

ASTR_O 110-001  ASTR_O 001  Astrophysics I  WS 3 0 0  Lecture  In Person Learning  Mon Wed 8:00 a.m. - 9:30 a.m.

ASTR_O 110-L01  ASTR_O 01  Astrophysics I  WS 3 0 0  Laboratory  In Person Learning  Tue (Alternate weeks) 2:30 p.m. - 5:30 p.m.

ASTR_O 110-L02  ASTR_O 02  Astrophysics I  WS 3 0 0  Laboratory  In Person Learning  Tue (Alternate weeks) 6:30 p.m. - 9:30 p.m.

ASTR_O 110-501  ASTR_O 001  Astrophysics I  WS 3 0 0  Seminar  In Person Learning  Wed 1:00 p.m. - 2:00 p.m.

ASTR_O 111-001  ASTR_O 001  Astronomy I  WS 3 0 0  Lecture  In Person Learning  Mon Wed 8:00 a.m. - 9:30 a.m.

ASTR_O 111-L01  ASTR_O 001  Astronomy I  WS 3 0 0  Laboratory  In Person Learning  Tue (Alternate weeks) 2:30 p.m. - 5:30 p.m.

ASTR_O 111-L02  ASTR_O 001  Astronomy I  WS 3 0 0  Laboratory  In Person Learning  Tue (Alternate weeks) 6:30 p.m. - 9:30 p.m.

ASTR_O 111-003  ASTR_O 001  Astronomy I  WS 3 0 0  Lecture  In Person Learning  Mon Wed 9:30 a.m. - 12:30 p.m.

ASTR_O 112-001  ASTR_O 001  Astronomy I (Non-Lab)  WS 3 0 0  Lecture  In Person Learning  Tue Thu 8:00 a.m. - 9:30 a.m.

ASTR_O 210-001  ASTR_O 001  Physical Processes in the Universe  WS 3 0 0  Lecture  In Person Learning  Mon Wed 11:00 a.m. - 12:30 p.m.

ASTR_O 401-001  ASTR_O 001  Astrophysical Processes  WS 3 0 0  Lecture  In Person Learning  Mon Wed 2:00 p.m. - 3:30 p.m.
ASTR_O 501-001  ASTR_O 001 Astronomical Processes W1 Thermodynamics, atomic and molecular spectra, ionization 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] Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

BIOC_O 211-001  BIOC_O 001 Chemical and Biochemical Analysis W1 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 113, CHEM 123 and one of PHYS 121, PHYS 122. Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

BIOC_O 211-101  BIOC_O 001 Chemical and Biochemical Analysis W1 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 113, CHEM 123 and one of PHYS 121, PHYS 122. Laboratory In Person Learning Tue 5:00 p.m. - 6:00 p.m.

BIOC_O 304-001  BIOC_O 001 Molecular Biochemistry I W1 Principles of thermodynamics and reaction kinetics in biochemistry. Acid/base biochemistry. Structure and function of lipids, amino acids, proteins, carbohydrates, nucleotides, and nucleic acids. Enzyme kinetics. Credit will only be granted for one of BIOC 304 or BIOL 311. [3-0-0] Prerequisite: One of CHEM 204, CHEM 214. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

BIOC_O 308-001  BIOC_O 001 Pharmacology I W1 Principles of pharmacology, including pharmacokinetics and pharmacodynamics of drug action, pharmacology associated with the autonomic nervous system (sympathetic and parasympathetic branches), the neuromuscular junction, the inflammatory response, chronic obstructive pulmonary diseases, peptic ulcers, and general and local anesthesia. [3-0-0] Prerequisite: BIOL 200 and one of CHEM 204, CHEM 214. Lecture In Person Learning Thu 8:00 a.m. - 9:30 a.m.

BIOC_O 405-001  BIOC_O 001 Lipids and Membranes W1 Review of recent research on the structure, dynamics, and function of membranes, membrane lipids, and proteins. [3-0-0] Prerequisite: One of BIOC 304, BIOL 311. Lecture In Person Learning Thu 5:00 p.m. - 6:30 p.m.

BIOC_O 406-001  BIOC_O 001 Natural Product Biosynthesis and Synthetic Biology W1 The credit value for this course will be determined in consultation with the student prior to the registration in the Major in Biochemistry and Molecular Biology program with a minimum overall grade average of 72%, investigation on a specific topic as agreed upon by the faculty and student. Prerequisite: Fourth-year standing and permission of the supervisor's department. Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

BIOC_O 410-001  BIOC_O 001 Nucleic Acids - Structure and Function W1 Chemical, physical, and biological properties of nucleic acids and their role in replication, transcription, translation, and regulation of expression of genetic material. [3-0-0] Prerequisite: BIOL 366. Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

BIOC_O 412-001  BIOC_O 001 Methods in Metabolomics W1 Chemical analysis of the metabolites in biological samples: study design, sample extractions, method development and validation, targeted and untargeted experiments, data processing, isotope tracer studies, chemoinformatics, compound identification, metabolic pathway and network mapping, data interpretation and presentation. Credit will be granted for only one of BIOC 412, CHEM 412 or CHEM 513. [3-0-0] Prerequisite: One of CHEM 211, BIOC 211 and fourth-year standing in Biochemistry. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

BIOC_O 425-001  BIOC_O 001 Biocatalysis W1 Biotecnological application of enzymes and whole cell catalysts for the synthesis of biofuels, pharmaceuticals, and other fine chemicals. Emphasis on enzymes used for organic synthesis, protein and metabolic engineering, and immobilization strategies. Credit will be granted for only one of BIOC 425 or CHEM 591. [3-0-0] Prerequisite: One of BIOC 304, BIOL 311. Lecture In Person Learning Mon Wed Fri 1:00 p.m. - 2:00 p.m.

BIOC_O 448-A_001  BIOC_O A A_001 Directed Studies in Biochemistry W1 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

BIOC_O 448-A_002  BIOC_O A A_002 Directed Studies in Biochemistry W1 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

BIOC_O 448-A_003  BIOC_O A A_003 Directed Studies in Biochemistry W1 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

BIOC_O 448-A_004  BIOC_O A A_004 Directed Studies in Biochemistry W1 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

BIOC_O 448-A_005  BIOC_O A A_005 Directed Studies in Biochemistry W1 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
Arranged

In Person Learning

Directed Studies in Biochemistry

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 and permission of the supervisor's department.

Directed Studies in Biochemistry

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 and permission of the supervisor's department.

Directed Studies in Biochemistry

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 and permission of the supervisor's department.

Directed Studies in Biochemistry

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Directed Studies in Biochemistry

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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 and permission of the supervisor's department.
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<th>Title</th>
<th>Credit Hours</th>
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<td>Honours Thesis</td>
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<td>Thesis</td>
<td>In Person Learning</td>
<td>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 72%, a research project, and permission of the supervisor’s department.</td>
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<tr>
<td>BIOC_449_002</td>
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<td>Honours Thesis</td>
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<td>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 72%, a research project, and permission of the supervisor’s department.</td>
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</table>
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.

Biochemistry and Molecular Biology program with a minimum overall grade average of 76%, a research project, and permission of the supervisor’s department.

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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. [3-3-0] 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.

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. [3-3-0] Prerequisite: One of BIOC 393, BIOL 393. BIOL 366 is strongly recommended.

Laboratory In Person Learning Thu 9:30 a.m. - 1:30 p.m.

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. [3-3-0] Prerequisite: One of BIOC 393, BIOL 393. BIOL 366 is strongly recommended.

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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. [3-3-0] Prerequisite: One of BIOC 393, BIOL 393. BIOL 366 is strongly recommended.

Laboratory In Person Learning Fri 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 638. Prerequisite: Admission to the Biochemistry and Molecular Biology graduate program.

Lecture In Person Learning Mon 11:00 a.m. - 2:00 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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.
BIOL 116-L06  BIOL_O  L06  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Tue 3:30 p.m. - 6:30 p.m.

BIOL 116-L07  BIOL_O  L07  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Tue 6:30 p.m. - 9:30 p.m.

BIOL 116-L08  BIOL_O  L08  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.

BIOL 116-L09  BIOL_O  L09  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Wed 12:30 p.m. - 3:30 p.m.

BIOL 116-L10  BIOL_O  L10  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Wed 3:30 p.m. - 6:30 p.m.

BIOL 116-L11  BIOL_O  L11  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Wed 6:30 p.m. - 9:30 p.m.

BIOL 116-L12  BIOL_O  L12  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Thu 9:30 a.m. - 12:30 p.m.

BIOL 116-L13  BIOL_O  L13  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Thu 12:30 p.m. - 3:30 p.m.

BIOL 116-L14  BIOL_O  L14  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Thu 3:30 p.m. - 6:30 p.m.

BIOL 116-L15  BIOL_O  L15  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Thu 6:30 p.m. - 9:30 p.m.

BIOL 116-L16  BIOL_O  L16  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Fri 9:30 a.m. - 12:30 p.m.

BIOL 116-L17  BIOL_O  L17  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. [3-3-0] Prerequisite: Either (a) CHEM 11 and one of Life Science 11, Anatomy and Physiology 12; or (b) CHEM 11 and one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory 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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

Laboratory: In Person Learning
Mon
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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

Laboratory: In Person Learning
Mon
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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

Laboratory: In Person Learning
Tue
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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

Laboratory: In Person Learning
Wed
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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 is recommended.

Laboratory: In Person Learning
Thu
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 BIO 116/125 or BIO 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 BIO 11, BIO 12. Corequisite: One of CHEM 111, CHEM 121 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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Thu 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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Thu 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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Fri 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 BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory 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 one of BIOL 11, BIOL 12. Corequisite: One of CHEM 111, CHEM 121 is recommended. Laboratory In Person Learning Arranged Arranged

Evolutionary theory and its underlying genetic basis; population, community, ecosystem, and behavioral ecology. Specific case studies and current environmental concerns. Recommended for Arts or Education students, in conjunction with BIOL 122. BIOL 117/122 cannot be used in place of BIOC 166/125 for those degree programs that require BIOC 116/125. Credit will be granted for only one of BIOC 117/122 or BIOL 116/125. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Mon 2:00 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Mon 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Tue 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Tue 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Tue 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Wed 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. [3-3-0] Prerequisite: Either (a) BIOL 122 or (b) all of Life Science 11 or Anatomy and Physiology 12, Chemistry 111 or (c) all of Biology 11 or 12, Chemistry 11. Laboratory In Person Learning Tue 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 Wed 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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. - 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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 enroll in BIOL 133 in their second term. Credit will be granted for only one of BIOL 131, HES 101, or HMMN 190. [3-3-0] 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.
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.

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 analysis 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 Arranged Arranged

Introduction to the vertebrate phyla and their evolution; comparative study of vertebrate structure and function, with dissection of representative forms. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOL 117, BIOL 122.

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

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

Laboratory In Person Learning Mon 5:00 p.m. - 8:00 p.m.

Laboratory In Person Learning Tue 8:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Tue 5:00 p.m. - 8:00 p.m.

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

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

Laboratory In Person Learning Wed 5:00 p.m. - 8:00 p.m.

Laboratory In Person Learning Thu 8:00 a.m. - 11:00 a.m.

Laboratory In Person Learning Arranged Arranged

Introduction to the invertebrate phyla. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOL 117, BIOL 122.

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

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

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

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

Laboratory In Person Learning Fri 8:00 a.m. - 11:00 a.m.

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

Laboratory In Person Learning Arranged Arranged

Introduction to the invertebrate phyla. [3-3-0] Prerequisite: Either (a) BIOL 125 or (b) all of BIOL 117, BIOL 122.

Laboratory In Person Learning Mon 12:30 p.m. - 3:00 p.m.

Laboratory In Person Learning Mon 5:00 p.m. - 8:00 p.m.

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

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

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

Laboratory In Person Learning Wed 9:30 a.m. - 12:30 p.m.
<p>| BIOL_O 228-L06 | BIOL_O | L06 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Wed | 5:00 p.m. - 8:00 p.m. |
| BIOL_O 228-L07 | BIOL_O | L07 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Thu | 9:30 a.m. - 12:30 p.m. |
| BIOL_O 228-L08 | BIOL_O | L08 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Thu | 3:30 p.m. - 6:30 p.m. |
| BIOL_O 228-L09 | BIOL_O | L09 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Fri | 3:30 p.m. - 6:30 p.m. |
| BIOL_O 228-L10 | BIOL_O | L10 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Mon | 5:00 p.m. - 8:00 p.m. |
| BIOL_O 228-L11 | BIOL_O | L11 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Tue | 9:30 a.m. - 12:30 p.m. |
| BIOL_O 228-L12 | BIOL_O | L12 | Introductory Microbiology | WS | An introductory course providing a broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Laboratory | In Person Learning | Tue | 3:30 p.m. - 6:30 p.m. |
| BIOL_O 228-XMT | BIOL_O | XMT | Introductory Microbiology | WS | 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 BIOL 265 or BIOL 365. [3-0-0] Prerequisite: BIOL 125. | Laboratory | In Person Learning | Arranged | Arranged |
| BIOL_O 265-001 | BIOL_O | 001 | Principles of Genetics | WS | Functional anatomy of structural cells and other specialized types. Structures and processes including extracellular matrix, cell adhesion, cytoskeleton, apoptosis and autophagy. Techniques for analysis of subcellular components. [3-0-0] Prerequisite: BIOL 200. | Lecture | In Person Learning | Mon | 9:30 a.m. - 11:00 a.m. |
| BIOL_O 300-001 | BIOL_O | 001 | Advanced Cell Biology | WS | An exploration of the field of Evolutionary Biology as an ongoing scientific endeavour. Current research methodology and development of concepts relating to the study of evolutionary change, adaptation, and the history of life will be examined. [3-0-0] Prerequisite: BIOL 201. | Lecture | In Person Learning | Thu | 5:00 p.m. - 6:30 p.m. |
| BIOL_O 301-101 | BIOL_O | 101 | Evolutionary Principles and Methods | WS | Demography, single species growth, competition, predation, and natural selection in plant and animal populations. [3-0-1] Prerequisite: One of MATH 101, MATH 103 and one of BIOL 201, GEOS 207. | Lecture | In Person Learning | Mon | 8:00 a.m. - 9:30 a.m. |
| BIOL_O 308-T01 | BIOL_O | T01 | Population Biology | WS | Demography, single species growth, competition, predation, and natural selection in plant and animal populations. [3-0-1] Prerequisite: One of MATH 101, MATH 103 and one of BIOL 201, GEOS 207. | Discussion | In Person Learning | Tue | 1:00 p.m. - 2:00 p.m. |
| BIOL_O 308-T02 | BIOL_O | T02 | Population Biology | WS | Demography, single species growth, competition, predation, and natural selection in plant and animal populations. [3-0-1] Prerequisite: One of MATH 101, MATH 103 and one of BIOL 201, GEOS 207. | Discussion | In Person Learning | Fri | 4:00 p.m. - 5:00 p.m. |
| BIOL_O 308-T03 | BIOL_O | T03 | Population Biology | WS | Demography, single species growth, competition, predation, and natural selection in plant and animal populations. [3-0-1] Prerequisite: One of MATH 101, MATH 103 and one of BIOL 201, GEOS 207. | Discussion | In Person Learning | Fri | 9:00 a.m. - 10:00 a.m. |
| BIOL_O 308-T04 | BIOL_O | T04 | Population Biology | WS | Demography, single species growth, competition, predation, and natural selection in plant and animal populations. [3-0-1] Prerequisite: One of MATH 101, MATH 103 and one of BIOL 201, GEOS 207. | Discussion | In Person Learning | Thu | 2:00 p.m. - 3:00 p.m. |
| BIOL_O 308-T05 | BIOL_O | T05 | Population Biology | WS | Demography, single species growth, competition, predation, and natural selection in plant and animal populations. [3-0-1] Prerequisite: One of MATH 101, MATH 103 and one of BIOL 201, GEOS 207. | Discussion | In Person Learning | Thu | 9:30 a.m. - 11:00 a.m. |
| BIOL_O 311-001 | BIOL_O | 001 | Biochemistry | WS | Structure and function of proteins, carbohydrates, lipids, and nucleic acids. Principles of thermodynamics and enzyme reaction mechanisms. Enzyme kinetics. Credit will only be granted for one of BIOL 311 or BIOL 304. [3-0-0] Prerequisite: BIOL 116 and one of CHEM 204, CHEM 214. | Lecture | In Person Learning | Mon | 2:00 p.m. - 3:00 p.m. |
| BIOL_O 314-001 | BIOL_O | 001 | Medical Microbiology | WS | Introduction to concepts of immunology. Immune system, innate immune 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: BIOL 228. | Lecture | In Person Learning | Tue | 12:30 p.m. - 2:00 p.m. |
| BIOL_O 318-001 | BIOL_O | 001 | Immunology | WS | The nervous system control of animal behavior. Examples include: sensory processing and communication, predator-prey interactions, migration, motor-coordination, daily and seasonal changes in activity, cellular mechanisms of learning and memory. [3-0-0] Prerequisite: BIOL 200. | Lecture | In Person Learning | Mon | 5:00 p.m. - 6:30 p.m. |
| BIOL_O 341-001 | BIOL_O | 001 | Neurobiology | WS | 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 200 and one of BIOL 202, STAT 230 and one of PHYS 121, PHYS 122. | Lecture | In Person Learning | Tue | 3:30 p.m. - 5:00 p.m. |
| BIOL_O 354-001 | BIOL_O | 001 | Cell Physiology | WS | A broad background in microbiology. Topics include structure, metabolism, diversity of micro-organisms, microbial genetics, virulence, and epidemiology. Laboratory work will include techniques and experiments relevant to lectures. [3-3-0] Prerequisite: BIOL 125. Corequisite: One of CHEM 203, CHEM 213. | Lecture | In Person Learning | Mon | 11:00 a.m. - 12:30 p.m. |</p>
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<th>Code</th>
<th>BIOL_O 440-003</th>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Cell Physiology</td>
</tr>
<tr>
<td>T01</td>
<td>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]</td>
</tr>
<tr>
<td>W1</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230 and one of PHYS 121, PHYS 122.</td>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Cell Physiology</td>
</tr>
<tr>
<td>T02</td>
<td>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]</td>
</tr>
<tr>
<td>W1</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230 and one of PHYS 121, PHYS 122.</td>
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<tr>
<td>BIOL_O</td>
<td>Cell Physiology</td>
</tr>
<tr>
<td>T03</td>
<td>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]</td>
</tr>
<tr>
<td>W1</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230 and one of PHYS 121, PHYS 122.</td>
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<th>Code</th>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Cell Physiology</td>
</tr>
<tr>
<td>T04</td>
<td>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]</td>
</tr>
<tr>
<td>W1</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230 and one of PHYS 121, PHYS 122.</td>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Introduction to Entomology</td>
</tr>
<tr>
<td>L01</td>
<td>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. [3-3-0]</td>
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<tr>
<td>W5</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230. BIOL 205 is recommended.</td>
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<tr>
<td>BIOL_O</td>
<td>Introduction to Entomology</td>
</tr>
<tr>
<td>L02</td>
<td>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. [3-3-0]</td>
</tr>
<tr>
<td>W5</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230. BIOL 205 is recommended.</td>
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<tr>
<td>BIOL_O</td>
<td>Introduction to Entomology</td>
</tr>
<tr>
<td>L03</td>
<td>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. [3-3-0]</td>
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<td>W5</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230. BIOL 205 is recommended.</td>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Introduction to Entomology</td>
</tr>
<tr>
<td>XMT</td>
<td>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. [3-3-0]</td>
</tr>
<tr>
<td>W5</td>
<td>Prerequisite: BIOL 201 and one of BIOL 202, STAT 230. BIOL 205 is recommended.</td>
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<th>Code</th>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Molecular Genetics</td>
</tr>
<tr>
<td>L01</td>
<td>Stresses the principles of molecular biology techniques and their relevance to the study of all areas of biology. Gene expression, gene regulation, and development genetics. [3-0-0]</td>
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<tr>
<td>W5</td>
<td>Prerequisite: One of BIOL 265, BIOL 365.</td>
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<th>Code</th>
<th>BIOL_O 350-002</th>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Food and Industrial Microbiology</td>
</tr>
<tr>
<td>L01</td>
<td>Spatial Ecology</td>
</tr>
<tr>
<td>W5</td>
<td>Spatial patterns in ecology, exploring ways to describe variation and mechanisms that give rise to patterns. Dispersal, 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]</td>
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<td></td>
<td>Prerequisite: One of BIOL 202, STAT 230.</td>
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<tr>
<td>BIOL_O</td>
<td>Functional Glycoscience</td>
</tr>
<tr>
<td>L01</td>
<td>Metabolism and nomenclature of glycans (saccharides) in prokaryotes and eukaryotes. Roles of glycans in normal cell function and in congenital, chronic and infectious diseases. Techniques for glycan analysis. [3-0-0]</td>
</tr>
<tr>
<td>W5</td>
<td>Prerequisite: BIOL 201 and one of BIOL 119, BIOL 305.</td>
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<th>Code</th>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Plant-Microbe Interactions</td>
</tr>
<tr>
<td>L01</td>
<td>Ecological, physiological, and molecular perspectives will be covered on root-associated micro-organisms with the potential to benefit plants. Implications for agriculture, forestry, bioremediation, and conservation. Credit will be granted for only one of BIOL 410 or BIOL 510. [3-0-0]</td>
</tr>
<tr>
<td>W5</td>
<td>Prerequisite: BIOL 228.</td>
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<tbody>
<tr>
<td>BIOL_O</td>
<td>Honours Thesis</td>
</tr>
<tr>
<td>W1-2</td>
<td>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.</td>
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<tr>
<td>BIOL_O</td>
<td>Honours Thesis</td>
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<tr>
<td>W1-2</td>
<td>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.</td>
</tr>
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<td>Prerequisite: Permission of the department head and course supervisor.</td>
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A written thesis is required, with a public presentation of the thesis in the form of a poster or seminar. Prerequisite: Permission of the department head and course supervisor.
| BIOL_O 440-023 | BIOL_O | 023 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-024 | BIOL_O | 024 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-025 | BIOL_O | 025 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-026 | BIOL_O | 026 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-027 | BIOL_O | 027 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-028 | BIOL_O | 028 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-029 | BIOL_O | 029 | Honours Thesis | W1-2 | 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 |
| BIOL_O 440-030 | BIOL_O | 030 | Honours Thesis | W1-2 | 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 |
| BIOL_O 403-001 | BIOL_O | 001 | Behavioural Ecology | W2 | Ecological and evolutionary basis for behaviour, the role of behaviour in enabling an organism to adapt to its environment. Topics include optimization and game theoretic approaches, foraging, sociality, mating, and parental care. [3-0-1] Prerequisite: BIOL 201. | Lecture | In Person Learning | Tue Thu | 8:00 a.m. - 9:30 a.m. |
| BIOL_O 501-001 | BIOL_O | 001 | Biology Seminar | W5 | Required for all Biology M.Sc. students. Based on Biology seminar speakers and their research programs. Students will attend the seminars and learn skills required to critically evaluate research. | Lecture | In Person Learning | Mon | 11:00 a.m. - 2:00 p.m. |
| BIOL_O 510-001 | BIOL_O | 001 | Plant-Microbe Interactions | W5 | Ecological, physiological, and molecular perspectives will be covered on root-associated micro-organisms with the potential to benefit plants. Implications for agriculture, forestry, bioremediation, and conservation. Credit will be granted for only one of BIOS 510 or BIOL 410. | Lecture | In Person Learning | Wed Fri | 12:30 p.m. - 2:00 p.m. |
| BIOL_O 512-001 | BIOL_O | 001 | Spatial Ecology | W5 | Examination of major spatial patterns in ecology, exploring ways to describe variation and the mechanisms that give rise to patterns. Dispersal, metapopulation and source-sink dynamics, connectivity and fragmentation, heterogeneity, disturbance, edges, and dynamics of geographical ranges. Credit will be granted for only one of BIOS 512 or BIOL 401. [3-0-0] | Lecture | In Person Learning | Mon Wed | 5:00 p.m. - 6:30 p.m. |
| BIOL_O 530-A_001 | BIOL_O | A A_001 | Special Topics in Biology, Lecture Format | W5 | With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOS 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. | Lecture | Online Learning | Tue Thu | 8:00 a.m. - 9:30 a.m. |
| BIOL_O 530-B_001 | BIOL_O | B B_001 | Special Topics in Biology, Lecture Format | W5 | With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOS 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. | Lecture | Online Learning | Tue Thu | 10:00 a.m. - 11:30 a.m. |
| BIOL_O 530-C_001 | BIOL_O | C C_001 | Special Topics in Biology, Lecture Format | W5 | With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOS 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. | Lecture | Online Learning | Tue Thu | 10:00 a.m. - 11:30 a.m. |
| BIOL_O 530-D_001 | BIOL_O | D D_001 | Special Topics in Biology, Lecture Format | W5 | With permission of the department head, this course may be taken more than once with a different topic. Credit will be granted for only one of BIOS 430, 431, 432, 433, 530, 531, 532, 533 when the subject matter is of the same nature. | Lecture | Online Learning | Tue Thu | 8:00 a.m. - 9:30 a.m. |
| CHEM_O 121-001 | CHEM_O | 001 | Atomic and Molecular Chemistry | W5 | The continued study of Western, Indigenous, and global art practices and the theoretical discourses that contribute to the development of contemporary art. [3-0-0] Prerequisite: CHEM 150. | Lecture | In Person Learning | Mon | 2:00 p.m. - 6:00 p.m. |
| CHEM_O 506-001 | CHEM_O | 001 | M.F.A. Graduate Colloquium I | W5 | Multi-disciplinary seminar dealing with various approaches and issues in contemporary creative research methods as relating to the disciplines of Visual Arts, Media Arts, Creative Writing, Performance, and Curation. Restricted to students in the M.F.A. program. Restricted to students in the M.F.A program or permission of the Department of Creative Studies. | Seminar | In Person Learning | Fri | 11:00 a.m. - 2:00 p.m. |
| CHEM_O 599-001 | CHEM_O | 001 | Master's Thesis | W5 | Pass/Fail. | Thesis | In Person Learning | Arranged | Arranged |
| CHEM_O 599-201 | CHEM_O | 201 | Master's Thesis | W5-2 | Pass/Fail. | Thesis | In Person Learning | Arranged | Arranged |
CHEM 121 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.

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CHEM 121 is strongly recommended. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended.
<table>
<thead>
<tr>
<th>CRN</th>
<th>Course</th>
<th>Section</th>
<th>Title</th>
<th>Days</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM_O 121-L19</td>
<td>CHEM_O 121-L19</td>
<td>L19</td>
<td>Atomic and Molecular Chemistry</td>
<td>WS</td>
<td>2:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>CHEM_O 121-L20</td>
<td>CHEM_O 121-L20</td>
<td>L20</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L21</td>
<td>CHEM_O 121-L21</td>
<td>L21</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L22</td>
<td>CHEM_O 121-L22</td>
<td>L22</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L23</td>
<td>CHEM_O 121-L23</td>
<td>L23</td>
<td>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.</td>
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<tr>
<td>CHEM_O 121-L24</td>
<td>CHEM_O 121-L24</td>
<td>L24</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L25</td>
<td>CHEM_O 121-L25</td>
<td>L25</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L26</td>
<td>CHEM_O 121-L26</td>
<td>L26</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L27</td>
<td>CHEM_O 121-L27</td>
<td>L27</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L28</td>
<td>CHEM_O 121-L28</td>
<td>L28</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L29</td>
<td>CHEM_O 121-L29</td>
<td>L29</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L30</td>
<td>CHEM_O 121-L30</td>
<td>L30</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L31</td>
<td>CHEM_O 121-L31</td>
<td>L31</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L32</td>
<td>CHEM_O 121-L32</td>
<td>L32</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L33</td>
<td>CHEM_O 121-L33</td>
<td>L33</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L34</td>
<td>CHEM_O 121-L34</td>
<td>L34</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM_O 121-L35</td>
<td>CHEM_O 121-L35</td>
<td>L35</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L36</td>
<td>CHEM_O 121-L36</td>
<td>L36</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>CHEM_O 121-L37</td>
<td>CHEM_O 121-L37</td>
<td>L37</td>
<td>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.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>Course Code</td>
<td>Description</td>
<td>Days</td>
<td>Time</td>
<td>Location</td>
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<tr>
<td>CHEM 121-L39</td>
<td>CHEM 203 Atomic and Molecular Chemistry</td>
<td>W1</td>
<td>9:30 a.m. - 12:30 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 121-L39</td>
<td>CHEM 203 Atomic and Molecular Chemistry</td>
<td>W1</td>
<td>2:00 p.m. - 5:00 p.m.</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-001</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-001</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Mon Wed Fri</td>
<td>11:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>CHEM 203-L01</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-L02</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-L03</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-L04</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-L05</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
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<tr>
<td>CHEM 203-L06</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-L07</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
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<tr>
<td>CHEM 203-L08</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>CHEM 203-L09</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
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<td>CHEM 203-L10</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
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<tr>
<td>CHEM 203-L11</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
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<tr>
<td>CHEM 203-L12</td>
<td>Introduction to Organic Chemistry</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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</tbody>
</table>

Courses 111-121 and 203-213 cover topics such as gases, atomic structure, and quantum theory of atoms, molecular structure and bonding, intermolecular forces, and stereochemistry. Credit will be granted for only one of CHEM 111 or CHEM 112. Principles of Mathematics 12 or Pre-Calculus 12 is strongly recommended. Chemistry 203 or 213 is recommended for Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enroll in CHEM 213. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enroll in CHEM 213. For Chemistry, Biochemistry, and Environmental Chemistry majors. Other students should enroll in CHEM 213.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Type</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tr>
<td>CHEM 211</td>
<td>Lecture</td>
<td>Analytical Chemistry</td>
<td>3-3*-0</td>
<td>One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122.</td>
</tr>
</tbody>
</table>

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. [3-3*-0] Preerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. 

CHEM 211-L01
L01 Analytical Chemistry
WS
BIOC 211. [3-3*-0] Preerequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. 

Laboratory In Person Learning Mon
13:00 p.m. - 3:00 p.m.

CHEM 211-L02
L02 Analytical Chemistry
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. 

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

CHEM 211-L03
L03 Analytical Chemistry
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. 

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

CHEM 211-L04
L04 Analytical Chemistry
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. 

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

CHEM 211-L05
L05 Analytical Chemistry
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122. 

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

CHEM 211-JMT
JMT Analytical Chemistry
WS
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 211 or BIOC 211. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

Laboratory In Person Learning Arranged
Arranged

CHEM 213-001
L01 Organic Chemistry for Biological Sciences I
WS
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 213 or CHEM 203. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

Laboratory In Person Learning Mon
2:00 p.m. - 3:00 p.m.

CHEM 213-L01
L01 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

Laboratory In Person Learning Tue
Alternate weeks
2:00 p.m. - 5:00 p.m.

CHEM 213-L02
L02 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

Laboratory In Person Learning Tue
Alternate weeks
2:00 p.m. - 5:00 p.m.

CHEM 213-L03
L03 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

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

CHEM 213-L04
L04 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

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

CHEM 213-L05
L05 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

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

CHEM 213-L06
L06 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

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

CHEM 213-L07
L07 Organic Chemistry for Biological Sciences I
WS
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. [3-3*-0] Prequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203. 

Laboratory In Person Learning Wed
Alternate weeks
5:30 p.m. - 8:30 p.m.
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. [3-3*-0] Prerequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203.

Chemistry for Biological Sciences I

Laboratory In Person Learning Wed (Alternate weeks)
3:30 p.m. - 8:30 p.m.

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. [3-3*-0] Prerequisite: One of CHEM 113, CHEM 123. Not for Chemistry, Biochemistry, or Environmental Chemistry majors. Such students should enrol in CHEM 203.

Laboratory In Person Learning Thu (Alternate weeks)
9:30 a.m. - 12:30 p.m.

Laboratory In Person Learning Thu (Alternate weeks)
3:30 p.m. - 4:30 p.m.

Laboratory In Person Learning Thu (Alternate weeks)
3:30 p.m. - 4:30 p.m.

Laboratory In Person Learning Arranged

Examination of various theories of atomic structure and molecular bonding, and their use to explain chemical and physical properties of atoms and molecules. Atomic wave mechanics, Lewis theory, valence bond theory, crystal field theory, symmetry and group theory, and molecular orbital theory of diatomic and polyatomic molecules and extended solids. [3-3*-0] Prerequisite: One of CHEM 113, CHEM 123. A minimum grade of 65% in CHEM 113 is strongly recommended.

Lecture In Person Learning Mon Wed
9:30 a.m. - 11:00 a.m.

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. [3-0-0]

Prerequisite: One of MATH 101, MATH 103 and one of CHEM 113, CHEM 123 and one of PHYS 121, PHYS 122.

One of CHEM 210, 211 is recommended.

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

Review of thermodynamics concepts; solution thermodynamics; electrochemistry; chemical equilibria, phase equilibria, colloid science. Emphasis on applications of thermodynamics to both chemical and biochemical systems. [3-4*-0] Prerequisite: CHEM 201. MATH 200 is recommended.

Lecture In Person Learning Mon Wed Fri
12:00 p.m. - 1:00 p.m.

Review of thermodynamics concepts; solution thermodynamics; electrochemistry; chemical equilibria, phase equilibria, colloid science. Emphasis on applications of thermodynamics to both chemical and biochemical systems. [3-4*-0] Prerequisite: CHEM 201. MATH 200 is recommended.

Review of thermodynamics concepts; solution thermodynamics; electrochemistry; chemical equilibria, phase equilibria, colloid science. Emphasis on applications of thermodynamics to both chemical and biochemical systems. [3-4*-0] Prerequisite: CHEM 201. MATH 200 is recommended.

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Review of thermodynamics concepts; solution thermodynamics; electrochemistry; chemical equilibria, phase equilibria, colloid science. Emphasis on applications of thermodynamics to both chemical and biochemical systems. [3-4*-0] Prerequisite: CHEM 201. MATH 200 is recommended.

Review of thermodynamics concepts; solution thermodynamics; electrochemistry; chemical equilibria, phase equilibria, colloid science. Emphasis on applications of thermodynamics to both chemical and biochemical systems. [3-4*-0] Prerequisite: CHEM 201. MATH 200 is recommended.

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Lecture In Person Learning Mon Wed Fri
2:00 p.m. - 3:00 p.m.

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Laboratory In Person Learning Tue (Alternate weeks)
3:30 p.m. - 7:30 p.m.

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Laboratory In Person Learning Tue (Alternate weeks)
3:30 p.m. - 7:30 p.m.

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Laboratory In Person Learning Arranged

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Laboratory In Person Learning Arranged

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Laboratory In Person Learning Arranged

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.

Laboratory In Person Learning Arranged

Diffusion and transport phenomena of biomolecules. Interaction of radiation and matter in biochemical systems. Methods to determine molar mass, size, and shape of biomolecules in solution. MATH 200 is strongly recommended. [3-4*-0] Prerequisite: One of CHEM 201, CHEM 210.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Topics</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM_O 338-001</td>
<td>CHEM_O 001 Organometallic Chemistry</td>
<td>3</td>
<td>Examination of the structure, bonding, reactivity, and catalysis of organometallic compounds of the d-block metals. A survey of ligands unique to organometallic chemistry is followed by an examination of the mechanisms of common reactions and important catalytic cycles.</td>
<td>[3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214.</td>
</tr>
<tr>
<td>CHEM_O 338-L01</td>
<td>CHEM_O L01 Organometallic Chemistry</td>
<td>3</td>
<td>Examination of the structure, bonding, reactivity, and catalysis of organometallic compounds of the d-block metals. A survey of ligands unique to organometallic chemistry is followed by an examination of the mechanisms of common reactions and important catalytic cycles.</td>
<td>[3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214.</td>
</tr>
<tr>
<td>CHEM_O 338-L02</td>
<td>CHEM_O L02 Organometallic Chemistry</td>
<td>3</td>
<td>Examination of the structure, bonding, reactivity, and catalysis of organometallic compounds of the d-block metals. A survey of ligands unique to organometallic chemistry is followed by an examination of the mechanisms of common reactions and important catalytic cycles.</td>
<td>[3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214.</td>
</tr>
<tr>
<td>CHEM_O 338-XMT</td>
<td>CHEM_O XMT Organometallic Chemistry</td>
<td>3</td>
<td>Examination of the structure, bonding, reactivity, and catalysis of organometallic compounds of the d-block metals. A survey of ligands unique to organometallic chemistry is followed by an examination of the mechanisms of common reactions and important catalytic cycles.</td>
<td>[3-4*-0] Prerequisite: CHEM 220 and one of CHEM 204, CHEM 214.</td>
</tr>
<tr>
<td>CHEM_O 412-001</td>
<td>CHEM_O 001 Methods in Metabolomics</td>
<td>3</td>
<td>Chemical analysis of the metabolites in biological samples: study design, sample extractions, method development and validation, targeted and untargeted experiments, data processing, isotope tracer studies, cheminformatics, compound identification, metabolic pathway and network mapping, data interpretation and presentation. Credit will be granted for only one of CHEM 412 or CHEM 533.</td>
<td>[3-0-0] Prerequisite: CHEM 220 and one of CHEM 311.</td>
</tr>
<tr>
<td>CHEM_O 448-A_001</td>
<td>CHEM_O A A_001 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Gas, liquid, and supercritical fluid chromatography. Mass spectrometry: ionization processes, mass analyses, ion molecule reactions, fragmentation processes. Credit will be granted for only one of CHEM 448 or CHEM 411.</td>
<td>[3-0-0] Prerequisite: CHEM 311.</td>
</tr>
<tr>
<td>CHEM_O 448-A_002</td>
<td>CHEM_O A A_002 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Organic 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.</td>
<td>Independent Study</td>
</tr>
<tr>
<td>CHEM_O 448-A_003</td>
<td>CHEM_O A A_003 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Organic 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.</td>
<td>Independent Study</td>
</tr>
<tr>
<td>CHEM_O 448-B_001</td>
<td>CHEM_O B B_001 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Organic 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.</td>
<td>Independent Study</td>
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<tr>
<td>CHEM_O 448-B_002</td>
<td>CHEM_O B B_002 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Organic 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.</td>
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</tr>
<tr>
<td>CHEM_O 448-B_003</td>
<td>CHEM_O B B_003 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Organic 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.</td>
<td>Independent Study</td>
</tr>
<tr>
<td>CHEM_O 448-C_001</td>
<td>CHEM_O C C_001 Special Topics in Chemistry, Lecture Format</td>
<td>2</td>
<td>Organic 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 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%. Credit will be granted for only one of CHEM 448 or CHEM 411.</td>
<td>[3-0-0] Prerequisite: CHEM 220 and one of CHEM 311.</td>
</tr>
<tr>
<td>CHEM_O 449-001</td>
<td>CHEM_O 001 Honours Thesis</td>
<td>3</td>
<td>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.</td>
<td>Thesis</td>
</tr>
<tr>
<td>CHEM_O 449-002</td>
<td>CHEM_O 002 Honours Thesis</td>
<td>3</td>
<td>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.</td>
<td>Thesis</td>
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<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Credits</td>
<td>Type</td>
<td>Description</td>
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<tr>
<td>CHEM 461-001</td>
<td>Advanced Analytical Chemistry Laboratory</td>
<td>W1-2</td>
<td>Laboratory</td>
<td>Integrated laboratory course designed to illustrate principles of modern analytical chemistry. Pre-requisite: CHEM 311.</td>
</tr>
<tr>
<td>CHEM 461-002</td>
<td>Advanced Analytical Chemistry Laboratory</td>
<td>W1-2</td>
<td>Laboratory</td>
<td>Integrated laboratory course designed to illustrate principles of modern analytical chemistry. Pre-requisite: CHEM 311.</td>
</tr>
<tr>
<td>CHEM 464-001</td>
<td>Advanced Physical and Biophysical Chemistry</td>
<td>W1-2</td>
<td>Laboratory</td>
<td>Integrated laboratory course designed to illustrate principles of modern physical and biophysical chemistry.</td>
</tr>
<tr>
<td>CHEM 485-001</td>
<td>Natural Product Biosynthesis and Synthetic</td>
<td>W1-2</td>
<td>Lecture</td>
<td>Origin and biosynthesis of natural products used as flavors, commodities, and medicines. New approaches to identification, elucidation, characterization, and production of natural products, including: biological chemistry, omics, metabolic engineering, and synthetic biology. Credit will be granted for only one of BCIC 406, CHEM 485 or CHEM 585. Pre-requisites: CHEM 204 or 214, and all of BCIC 310. Lecture.</td>
</tr>
<tr>
<td>CHEM 533-001</td>
<td>Metabolomics</td>
<td>W1-2</td>
<td>Seminar</td>
<td>Chemical analysis of the metabolites in biological samples. Targeted and untargeted metabolomics, chemometrics, metabolite identification, pathway and network mapping, data interpretation and presentation. Credit will be granted for only one of CHEM 533, CHEM 412 or CHEM 414. Lecture.</td>
</tr>
<tr>
<td>CHEM 540-201</td>
<td>Graduate Seminar in Chemistry</td>
<td>W1-2</td>
<td>Seminar</td>
<td>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. Seminar.</td>
</tr>
<tr>
<td>CHEM 549-001</td>
<td>M.Sc. Thesis</td>
<td>W1-2</td>
<td>Thesis</td>
<td>Origin and biosynthesis of natural products used as flavors, commodities, and medicines. New approaches to identification, elucidation, characterization, and production of natural products, including: biological chemistry, omics, metabolic engineering, and synthetic biology. Credit will be granted for only one of BCIC 406. Lecture.</td>
</tr>
<tr>
<td>CHEM 585-001</td>
<td>Natural Product Biosynthesis and Synthetic</td>
<td>W1-2</td>
<td>Lecture</td>
<td>An introduction to the grammar, syntax, and function of modern spoken and written Mandarin-Chinese. For absolute beginners; not available to students who have obtained the equivalent of CEFR Level A1 in any Chinese language. Lecture.</td>
</tr>
<tr>
<td>CHEM 649-201</td>
<td>Ph.D. Thesis</td>
<td>W1-2</td>
<td>Thesis</td>
<td>An introduction to the grammar, syntax, and function of modern spoken and written Mandarin-Chinese. For absolute beginners; not available to students who have obtained the equivalent of CEFR Level A1 in any Chinese language. Lecture.</td>
</tr>
<tr>
<td>CMPE 201-001</td>
<td>Computing for Science, Engineering, and</td>
<td>W1-2</td>
<td>Lecture</td>
<td>Invention and evolution of computers; impact of computing technology on science and engineering including Internet of Things (IoT) and Internet of Things (IoT). Lecture.</td>
</tr>
<tr>
<td>CMPE 401-101</td>
<td>Co-op Education Work Experience I</td>
<td>W1-2</td>
<td>Experimental</td>
<td>Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full time. Lecture.</td>
</tr>
<tr>
<td>CMPE 402-101</td>
<td>Co-op Education Work Experience II</td>
<td>W1-2</td>
<td>Experimental</td>
<td>Approved and supervised paid work experience with a public or private organization for a minimum of 455 hours full time. Lecture.</td>
</tr>
</tbody>
</table>
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’. Prerequisite: COOP 402.

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’. Prerequisite: COOP 403.

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’. Prerequisite: COOP 404.

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’. Prerequisite: COOP 405.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<th>Instructor</th>
<th>Days</th>
<th>Times</th>
<th>Location</th>
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<tbody>
<tr>
<td>COSC 111-L03</td>
<td>Computer Programming I</td>
<td>L03</td>
<td></td>
<td></td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L04</td>
<td>Computer Programming I</td>
<td>L04</td>
<td></td>
<td></td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L05</td>
<td>Computer Programming I</td>
<td>L05</td>
<td></td>
<td></td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L06</td>
<td>Computer Programming I</td>
<td>L06</td>
<td></td>
<td></td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L07</td>
<td>Computer Programming I</td>
<td>L07</td>
<td></td>
<td></td>
<td>4:00 p.m. - 6:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L08</td>
<td>Computer Programming I</td>
<td>L08</td>
<td></td>
<td></td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L09</td>
<td>Computer Programming I</td>
<td>L09</td>
<td></td>
<td></td>
<td>4:00 p.m. - 6:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L10</td>
<td>Computer Programming I</td>
<td>L10</td>
<td></td>
<td></td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
</tr>
<tr>
<td>COSC 111-L11</td>
<td>Computer Programming I</td>
<td>L11</td>
<td></td>
<td></td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
</tr>
<tr>
<td>COSC 111-L12</td>
<td>Computer Programming I</td>
<td>L12</td>
<td></td>
<td></td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L13</td>
<td>Computer Programming I</td>
<td>L13</td>
<td></td>
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<td>4:00 p.m. - 6:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L14</td>
<td>Computer Programming I</td>
<td>L14</td>
<td></td>
<td></td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L15</td>
<td>Computer Programming I</td>
<td>L15</td>
<td></td>
<td></td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L16</td>
<td>Computer Programming I</td>
<td>L16</td>
<td></td>
<td></td>
<td>4:00 p.m. - 6:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L17</td>
<td>Computer Programming I</td>
<td>L17</td>
<td></td>
<td></td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L18</td>
<td>Computer Programming I</td>
<td>L18</td>
<td></td>
<td></td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L19</td>
<td>Computer Programming I</td>
<td>L19</td>
<td></td>
<td></td>
<td>4:00 p.m. - 6:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L20</td>
<td>Computer Programming I</td>
<td>L20</td>
<td></td>
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<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
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<tr>
<td>COSC 111-L21</td>
<td>Computer Programming I</td>
<td>L21</td>
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<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
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</table>
COSC_O 122-001 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

COSC_O 122-004 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Fri 2:00 p.m. - 4:00 p.m.

COSC_O 122-007 COCS_O 002 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-008 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-009 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-010 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-011 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-012 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-013 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-014 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-015 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-016 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-017 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-018 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-019 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-020 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-021 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-022 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-023 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-024 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-025 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-026 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-027 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-028 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-029 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.

COSC_O 122-030 COSC_O 001 Computer Programming II WS 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. Lecture In Person Learning Thu 2:00 p.m. - 4:00 p.m.
<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Title</th>
<th>Days</th>
<th>Time</th>
<th>Location</th>
<th>Instructor</th>
<th>Prerequisites</th>
</tr>
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<tbody>
<tr>
<td>COSC 221-002</td>
<td>COSC_O</td>
<td>Discrete Structures in Computing</td>
<td>W1</td>
<td>5:00 p.m. - 6:30 p.m.</td>
<td>Seminar</td>
<td>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.</td>
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<tr>
<td>COSC 221-003</td>
<td>COSC_O</td>
<td>Discrete Structures in Computing</td>
<td>W1</td>
<td>1:00 p.m. - 2:00 p.m.</td>
<td>Seminar</td>
<td>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.</td>
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<tr>
<td>COSC 222-001</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Lecture</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L01</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L01</td>
<td>11:00 a.m. - 12:30 p.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L02</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L02</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L03</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L03</td>
<td>9:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L04</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L04</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L05</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L05</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L06</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L06</td>
<td>4:00 p.m. - 6:00 p.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L07</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L07</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 222-L08</td>
<td>COSC_O</td>
<td>Data Structures</td>
<td>L08</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>Introduction to the design, implementation and analysis of data structures. Topics will include lists, stacks, queues, trees, and graphs. Credit will only be granted for one of COSC 210 or COSC 222. [3-2-0] Prerequisite: A score of 60% or higher in COSC 121.</td>
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<tr>
<td>COSC 301-001</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>W1</td>
<td>5:00 p.m. - 6:30 p.m.</td>
<td>Seminar</td>
<td>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 104.</td>
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<td>COSC 301-L2A</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>L2A</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>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 104.</td>
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<tr>
<td>COSC 301-L2B</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>L2B</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>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 104.</td>
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<tr>
<td>COSC 301-L2C</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>L2C</td>
<td>5:00 p.m. - 6:30 p.m.</td>
<td>Seminar</td>
<td>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 104.</td>
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<tr>
<td>COSC 301-L2D</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>L2D</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>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 104.</td>
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<tr>
<td>COSC 301-L2E</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>L2E</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>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 104.</td>
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<tr>
<td>COSC 301-L2F</td>
<td>COSC_O</td>
<td>Introduction to Data Analytics</td>
<td>L2F</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>Databases from a user's perspective: querying with SQL, designing with UML, and using programs to analyse data. Construction of database-driven applications and websites with experience with current database technologies. Completion of COSC 121 is recommended. [3-0-0] Prerequisite: One of COSC 111, COSC 123, COSC 210. Third-year standing.</td>
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<tr>
<td>COSC 304-001</td>
<td>COSC_O</td>
<td>Introduction to Databases</td>
<td>W1</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>Seminar</td>
<td>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.</td>
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<tr>
<td>COSC 310-001</td>
<td>COSC_O</td>
<td>Software Engineering</td>
<td>W1</td>
<td>5:00 p.m. - 6:30 p.m.</td>
<td>Seminar</td>
<td>In Person Learning</td>
<td>Tue</td>
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COSC_O 310-L01 COSC_O 101 Software Engineering WS 
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.

COSC_O 310-L02 COSC_O 102 Software Engineering WS 
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_O 315-001 COSC_O 001 Introduction to Operating Systems WS 
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_O 315-L01 COSC_O 101 Introduction to Operating Systems WS 
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_O 315-L02 COSC_O 102 Introduction to Operating Systems WS 
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_O 315-L03 COSC_O 103 Introduction to Operating Systems WS 
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_O 315-L04 COSC_O 104 Introduction to Operating Systems WS 
Design and analysis of algorithms. Illustrated from various problem areas. Models of computation, choice of data structures, space and time efficiency, computation complexity; algorithms for searching, sorting and graph-theoretic problems, NP-complete problems. [3-0-0] Prerequisite: All of COSC 221, COSC 222 and one of MATH 220, APSC 179.

COSC_O 320-001 COSC_O 001 Analysis of Algorithms WS 
History of human-computer interaction. Basic design principles, user-centered design, task analysis, interaction models, input and output devices, graphical interface design, prototyping, and evaluation. [3-0-0] Prerequisite: One of COSC 111, COSC 121, COSC 123, DATA 301, and third-year standing.

COSC_O 341-001 COSC_O 001 Human Computer Interaction WS 
Fundamental theoretical and practical concepts for processing and analyzing real-world digital images and videos, image enhancement and filtering, frequency domain and other transform analyses, morphological image operations, image segmentation, and object recognition. Credit will be granted for only one of COSC 344, COSC 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.

COSC_O 344-101 COSC_O 101 Image Processing and Applications WS 
Numeric dynamic systems models and emphasis on discrete stochastic systems. State description of models, common model components, entities. Common simulation language. Simulation using algebraic languages. Simulation methodology: data collection, model design, output analysis, optimization, validation. Elements of queueing theory, relationship to simulation. Applications to computer systems models. Credit will be granted for only one of COSC 405, COSC 406, COSC 405, or DATA 405. [3-2-0] Prerequisite: All of COSC 221, COSC 222.

COSC_O 405-001 COSC_O 001 Modeling and Simulation WS 
Fundamental theoretical and practical concepts for processing and analyzing real-world digital images and videos, image enhancement and filtering, frequency domain and other transform analyses, morphological image operations, image segmentation, and object recognition. Credit will be granted for only one of COSC 344, COSC 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.

COSC_O 405-L01 COSC_O 101 Modeling and Simulation WS 
Formulation and analysis of algorithms for continuous optimization problems; linear, quadratic, semi-definite, nonlinear (constrained and unconstrained), curves (smooth and non-smooth) optimization; large-scale problems; software packages and their implementation; elements of duality theory. Credit will not be granted for both COSC 406 and COSC 506. [3-0-0] Prerequisite: One of MATH 200, APSC 248 and one of MATH 221, APSC 179.

COSC_O 406-001 COSC_O 001 Numerical Optimization WS 
Graphs and complex networks in scientific research. Probabilistic and statistical models. Structures, patterns, and behaviors in networks. Algorithms and statistical methods (online/mobile), social networks, and social media platforms. Social influence, information diffusion, and viral marketing. Sentiment analysis and opinion mining. Data privacy. Search engines and recommendation systems. Credit will be granted for only one of COSC 421, COSC 521, DATA 421 or DATA 521. [3-2-0] Prerequisite: All of COSC 221, COSC 222 and one of STAT 230, STAT 205.

COSC_O 421-101 COSC_O 101 Network Science WS 
Computer interaction design principles, advanced methodologies and theories; novel interfaces and platforms, conceptualization from ideation to implementation, advanced techniques for evaluation including controlled quantitative evaluation, field evaluation, quantitative analysis; introduction to HCI research. Credit will be granted for only one of COSC 441 or COSC 541. [3-2-0] Prerequisite: COSC 341, and Fourth-year standing.

COSC_O 441-001 COSC_O 001 Advanced Human Computer Interaction WS 
Computer interaction design principles, advanced methodologies and theories; novel interfaces and platforms, conceptualization from ideation to implementation, advanced techniques for evaluation including controlled quantitative evaluation, field evaluation, quantitative analysis; introduction to HCI research. Credit will be granted for only one of COSC 441 or COSC 541. [3-2-0] Prerequisite: COSC 341, and Fourth-year standing.

COSC_O 441-L01 COSC_O 101 Advanced Human Computer Interaction WS 
Computer interaction design principles, advanced methodologies and theories; novel interfaces and platforms, conceptualization from ideation to implementation, advanced techniques for evaluation including controlled quantitative evaluation, field evaluation, quantitative analysis; introduction to HCI research. Credit will be granted for only one of COSC 441 or COSC 541. [3-2-0] Prerequisite: COSC 341, and Fourth-year standing.
COSC_O 441-L02 Advanced Human Computer Interaction WS Supervised reading, participation in a seminar, and one or more programming projects. With different topics, this course may be taken twice for credit. Prerequisite: Fourth-year standing. Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.

COSC_O 448-A_001 Directed Studies in Computer Science WS Arranged 

COSC_O 448-A_005 Directed Studies in Computer Science WS Arranged 

COSC_O 448-B_001 Directed Studies in Computer Science WS-2 Arranged 

COSC_O 448-B_002 Directed Studies in Computer Science WS-2 Arranged 

COSC_O 448-B_003 Directed Studies in Computer Science WS-2 Arranged 

COSC_O 448-C_001 Directed Studies in Computer Science WS Arranged 

COSC_O 448-C_002 Directed Studies in Computer Science WS Arranged 

COSC_O 449-001 Honours Thesis WS-2 Arranged 

COSC_O 449-002 Honours Thesis WS-2 Arranged 

COSC_O 449-003 Honours Thesis WS-2 Arranged 

COSC_O 449-004 Honours Thesis WS-2 Arranged 

COSC_O 449-005 Honours Thesis WS-2 Arranged 

COSC_O 449-002 Capstone Software Engineering Project WS-2 Arranged 

COSC_O 449-003 Capstone Software Engineering Project WS-2 Arranged 

COSC_O 505-001 Modeling and Simulation WS Simulation methodology: data collection, model design, output analysis, optimization, validation. Credit will be granted for only one of COSC 405, DATA 405, COSC 505, or DATA 505. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

COSC_O 506-001 Numerical Optimization WS Formulation and analysis of algorithms for continuous optimization problems; linear, quadratic, semi-definite, nonlinear (constrained and unconstrained); large-scale problems. Credit will be granted for only one of COSC 405 or COSC 506. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

COSC_O 519-J_001 Topics in Computer Science WS 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 2:00 p.m. - 5:00 p.m.

COSC_O 521-001 Network Science WS Computer interaction design principles, advanced methodologies and theories; novel interfaces and platforms, conceptualization from ideation to implementation, advanced techniques for evaluation including controlled quantitative evaluation, field evaluation, quantitative analysis; introduction to HCI research. Credit will be granted for only one of COSC 441 or COSC 541. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

COSC_O 541-001 Advanced Human Computer Interaction WS Computer interaction design principles, advanced methodologies and theories; novel interfaces and platforms, conceptualization from ideation to implementation, advanced techniques for evaluation including controlled quantitative evaluation, field evaluation, quantitative analysis; introduction to HCI research. Credit will be granted for only one of COSC 441 or COSC 541.


COSC_O 590-D_001 Graduate Seminar WS Presentation and discussion of recent results in the Computer Science literature. Pass/Fail. Seminar In Person Learning Tue 8:00 a.m. - 11:00 a.m.

COSC_O 649-001 Doctoral Dissertation WS Pass/Fail.

CRWR 150-001 CRWR 0 001 Introduction to Writing Poetry and Non-Fiction W1 Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

CRWR 160-001 CRWR 0 001 Introduction to Writing Fiction and Drama W1 Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.

CRWR 160-002 CRWR 0 002 Introduction to Writing Fiction and Drama WS Lecture In Person Learning Thu 2:00 p.m. - 5:00 p.m.

CRWR 217-001 CRWR 0 001 Intermediate Workshop in Creative Writing: Fict W1 Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

CRWR 250-001 CRWR 0 001 Workshop in Creative Writing: Screenwriting W5 Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

CRWR 310-001 CRWR 0 001 The Power of Metaphor W1 Lecture In Person Learning Wed 8:00 a.m. - 11:00 a.m.

CRWR 380-001 CRWR 0 001 Writing of the Short Story W5 Lecture In Person Learning Fri 8:00 a.m. - 11:00 a.m.

CRWR 381-A_001 CRWR 0 A A_001 Writing of Poetry W2 Lecture In Person Learning Tue Thu 2:00 p.m. - 5:00 p.m.

CRWR 470-A_001 CRWR 0 A A_001 Portfolio W5 Lecture In Person Learning Thu 11:00 a.m. - 2:00 p.m.

CRWR 474-001 CRWR 0 001 Writing with Media W5 Lecture In Person Learning Wed Fri 2:00 p.m. - 4:00 p.m.

CRWR 581-A_001 CRWR 0 A A_001 Graduate Workshop in Creative Writing - Lyric W5 Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.

CRWR 582-A_001 CRWR 0 A A_001 Graduate Workshop in Creative Writing - Narrative W5 Lecture In Person Learning Tue 8:00 a.m. - 11:00 a.m.

CULT 100-001 CULT_O 001 Media and Popular Cultures in Global Context W1 Lecture In Person Learning Thu 11:00 a.m. - 12:30 p.m.

CULT 100-002 CULT_O 002 Media and Popular Cultures in Global Context W1 Lecture In Person Learning Thu 5:00 p.m. - 6:30 p.m.

CULT 100-003 CULT_O 003 Media and Popular Cultures in Global Context W1 Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

CULT 101-001 CULT_O 001 Cultural Studies Practices W1 Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

CULT 101-002 CULT_O 002 Cultural Studies Practices W1 Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

CULT 101-003 CULT_O 003 Cultural Studies Practices W1 Lecture In Person Learning Thu 3:30 p.m. - 5:00 p.m.

CULT 101-004 CULT_O 004 Cultural Studies Practices W1 Lecture In Person Learning Thu 9:30 a.m. - 11:00 a.m.

CULT 210-001 CULT_O 001 Reading Screens W1 Lecture In Person Learning Wed 12:30 p.m. - 2:00 p.m.

CULT 215-001 CULT_O 001 Cultural Industries W1 Lecture In Person Learning Thu 12:30 p.m. - 2:00 p.m.

CULT 220-101 CULT_O 101 Research with Media in the Humanities W5 Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.
CULT_O 230-001  
CULT_O 001 Foundations: Reading Across Borders  
WS  
Lecture  
In Person Learning  
Tue Thu  
9:30 a.m. - 11:00 a.m.

CULT_O 250-101  
CULT_O 101 Foundations: Indigenous Literature  
WS  
Lecture  
In Person Learning  
Tue  
9:30 a.m. - 11:00 a.m.

CULT_O 250-101  
CULT_O 101 Foundations: Indigenous Literature  
WS  
Lecture  
In Person Learning  
Wed Fri  
3:30 p.m. - 5:00 p.m.

CULT_O 275-001  
CULT_O 001 Foundations: Interdisciplinary Theory and Meth WS  
Lecture  
In Person Learning  
Tue Thu  
12:30 p.m. - 2:00 p.m.

CULT_O 303-001  
CULT_O 001 Narrative Film Production  
WS  
Lab  
In Person Learning  
Thu  
12:00 p.m. - 3:00 p.m.

CULT_O 309-001  
CULT_O 001 Performance Art: Global Perspectives  
WS  
Lab  
In Person Learning  
Wed  
2:00 p.m. - 5:00 p.m.

CULT_O 312-A_001  
CULT_O A A_001 Internet Culture  
WS  
Lecture  
In Person Learning  
Tue Thu  
9:30 a.m. - 11:00 a.m.

CULT_O 315-001  
CULT_O 001 Television Studies  
WS  
Lecture  
In Person Learning  
Tue Thu  
3:00 p.m. - 8:00 p.m.

CULT_O 362-A_001  
CULT_O A A_001 Advanced Practice in Photography  
WS  
Lab  
In Person Learning  
Tue Thu  
3:30 p.m. - 7:30 p.m.

CULT_O 371-A_001  
CULT_O A A_001 Modern Critical Theory and Interdisciplinary Me WS  
Lecture  
In Person Learning  
Mon Wed  
9:30 a.m. - 11:00 a.m.

CULT_O 382-A_001  
CULT_O A A_001 Advanced Practice in Media Arts  
WS  
Lab  
In Person Learning  
Wed  
8:00 a.m. - 12:00 p.m.

CULT_O 390-A_001  
CULT_O A A_001 Identities and Power: Areas and Themes  
WS  
Lecture  
In Person Learning  
Wed  
11:00 a.m. - 2:00 p.m.

CULT_O 390-B_001  
CULT_O B B_001 Identities and Power: Areas and Themes  
WS  
Lecture  
In Person Learning  
Mon Thu  
8:00 a.m. - 9:30 a.m.

CULT_O 411-001  
CULT_O 001 Performance Studies  
WS  
Lab  
In Person Learning  
Tue Thu  
2:00 p.m. - 5:00 p.m.

CULT_O 417-B_001  
CULT_O B B_001 Postcolonial Studies  
WS  
Lab  
In Person Learning  
Mon  
11:00 a.m. - 2:00 p.m.

CULT_O 450-001  
CULT_O 001 Studies in Indigenous Literature and Criticism  
WS  
Lecture  
In Person Learning  
Tue Thu  
9:30 a.m. - 11:00 a.m.

DATA_O 101-001  
DATA_O 001 Making Predictions with Data  
WS  
Lab  
In Person Learning  
Mon Wed  
8:00 a.m. - 9:30 a.m.

DATA_O 101-002  
DATA_O 002 Making Predictions with Data  
WS  
Lab  
In Person Learning  
Tue Thu  
5:00 p.m. - 6:30 p.m.

DATA_O 101-011  
DATA_O L01 Making Predictions with Data  
WS  
Lab  
In Person Learning  
Wed  
1:00 p.m. - 2:00 p.m.

DATA_O 101-012  
DATA_O L02 Making Predictions with Data  
WS  
Lab  
In Person Learning  
Wed  
10:00 a.m. - 11:00 a.m.

DATA_O 101-013  
DATA_O L03 Making Predictions with Data  
WS  
Lab  
In Person Learning  
Mon  
12:00 p.m. - 1:00 p.m.
DATA_O 101-L04  DATA_O 101-Making Predictions with Data  WS  Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Laboratory  In Person Learning  Fri  11:00 a.m. - 12:00 p.m.

DATA_O 101-L05  DATA_O 101-Making Predictions with Data  WS  Introduction to the techniques and software for handling real-world data. Topics include data cleaning, visualization, simulation, basic modelling, and prediction making. [3-1-0]  Laboratory  In Person Learning  Fri  9:00 a.m. - 10:00 a.m.

DATA_O 310-101  DATA_O 101-Applied Regression Analysis  WS  Regression, classification, resampling, model selection and validation, fundamental properties of matrices, dimension reduction, tree-based methods, unsupervised learning. [3-2-0]  Prerequisite: Either (a) one of STAT 205, STAT 230 or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 171; and one of COSC 111, APSC 177.  Lecture  In Person Learning  Wed Fri  3:30 p.m. - 5:00 p.m.

DATA_O 311-L01  DATA_O 101-Machine Learning  WS  Regression, classification, resampling, model selection and validation, fundamental properties of matrices, dimension reduction, tree-based methods, unsupervised learning. [3-2-0]  Prerequisite: Either (a) one of STAT 205, STAT 230 or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 171; and one of COSC 111, APSC 177.  Lecture  In Person Learning  Tue Thu  3:30 p.m. - 5:00 p.m.

DATA_O 311-L01  DATA_O 101-Machine Learning  WS  Regression, classification, resampling, model selection and validation, fundamental properties of matrices, dimension reduction, tree-based methods, unsupervised learning. [3-2-0]  Prerequisite: Either (a) one of STAT 205, STAT 230 or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 171; and one of COSC 111, APSC 177.  Lecture  In Person Learning  Fri  10:00 a.m. - 12:00 p.m.

DATA_O 311-L02  DATA_O 102-Machine Learning  WS  Regression, classification, resampling, model selection and validation, fundamental properties of matrices, dimension reduction, tree-based methods, unsupervised learning. [3-2-0]  Prerequisite: Either (a) one of STAT 205, STAT 230 or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 171; and one of COSC 111, APSC 177.  Lecture  In Person Learning  Thu  12:00 p.m. - 2:00 p.m.

DATA_O 311-L03  DATA_O 103-Machine Learning  WS  Regression, classification, resampling, model selection and validation, fundamental properties of matrices, dimension reduction, tree-based methods, unsupervised learning. [3-2-0]  Prerequisite: Either (a) one of STAT 205, STAT 230 or (b) a score more than 75% in one of APSC 254, BIOL 202, PSYO 171; and one of COSC 111, APSC 177.  Lecture  In Person Learning  Mon  12:00 p.m. - 2:00 p.m.

DATA_O 405-L01  DATA_O 001-Stochastic Modelling and Simulation  WS  Pseudorandom number generation and testing. Simulation and modelling of univariate and multivariate data; stochastic models, including Poisson processes and Markov chains; MCSC simulation, Hidden Markov models, and queueing systems. Credit will be granted for only one of COSC 405, DATA 405, COSC 505, or DATA 505. [3-2-0]  Prerequisite: One of STAT 205, STAT 230 [with 60% or above].  Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

DATA_O 448-B_001  DATA_O 001-Directed Studies in Data Science  WS  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

DATA_O 448-B_001  DATA_O 001-Directed Studies in Data Science  WS  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

DATA_O 448-C_001  DATA_O 001-Directed Studies in Data Science  WS  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.  In Person Learning  Arranged  Arranged

DATA_O 449-001  DATA_O 001-Honours Thesis  WS  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 B.S. Data Science Honours Program. Prerequisite: Fourth-year standing and permission of the department head.  Thesis  In Person Learning  Arranged  Arranged

DATA_O 500-001  DATA_O 001-Communication and Consulting in Data Science  WS  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  2:00 p.m. - 3:30 p.m.

DATA_O 505-001  DATA_O 001-Modelling and Simulation  WS  Simulation methodology: data collection, model design, output analysis, optimization, validation. Credit will be granted for only one of COSC 405, DATA 405, COSC 505, or DATA 505.  Lecture  In Person Learning  Thu  2:00 p.m. - 3:30 p.m.

DATA_O 530-001  DATA_O 001-Computing Platforms for Data Science  WS  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.

DATA_O 530-101  DATA_O 010-Computing Platforms for Data Science  WS  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.

DATA_O 530-T1A  DATA_O 014-Computing Platforms for Data Science  WS  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.

DATA_O 531-L01  DATA_O 001-Programming for Data Science  WS  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.

DATA_O 531-L01  DATA_O 001-Programming for Data Science  WS  Programming including decisions, loops, functions, and using data structures and libraries. Restricted to students in the MDS program.  Lecture  In Person Learning  Wed  12:30 p.m. - 2:00 p.m.

DATA_O 531-T1A  DATA_O 001-Programming for Data Science  WS  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.

DATA_O 532-001  DATA_O 001-Data Structures and Data Structure  WS  Data structures including lists, queues, 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.

DATA_O 532-001  DATA_O 001-Data Structures and Data Structure  WS  Data structures including lists, queues, stacks, hash tables, trees and graphs. Recursion. Searching and sorting. Asymptotic complexity. Restricted to students in the MDS program.  Laboratory  In Person Learning  Tue Thu  12:30 p.m. - 4:30 p.m.

DATA_O 532-T1A  DATA_O 001-Data Structures and Data Structure  WS  Data structures including lists, queues, 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.


**DATA_O 540-001**  DATA_O  001  Databases and Data Retrieval  WS  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 531. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

**DATA_O 540-L01**  DATA_O  L01  Databases and Data Retrieval  WS  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 531. Laboratory In Person Learning Mon 12:30 p.m. - 4:30 p.m.

**DATA_O 540-T1A**  DATA_O  T1A  Databases and Data Retrieval  WS  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 531. Discussion In Person Learning Mon 8:30 a.m. - 9:30 a.m.

**DATA_O 541-001**  DATA_O  001  Scripting and Reporting  WS  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.

**DATA_O 541-L01**  DATA_O  L01  Scripting and Reporting  WS  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.

**DATA_O 541-T1A**  DATA_O  T1A  Scripting and Reporting  WS  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.

**DATA_O 543-001**  DATA_O  001  Data Collection  WS  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.

**DATA_O 543-L01**  DATA_O  L01  Data Collection  WS  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 Wed 12:30 p.m. - 4:30 p.m.

**DATA_O 543-T1A**  DATA_O  T1A  Data Collection  WS  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. Discussion In Person Learning Wed 8:30 a.m. - 9:30 a.m.

**DATA_O 553-001**  DATA_O  001  Privacy, Security and Professional Ethics  WS  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.

**DATA_O 553-L01**  DATA_O  L01  Privacy, Security and Professional Ethics  WS  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 12:30 p.m. - 4:30 p.m.

**DATA_O 553-T1A**  DATA_O  T1A  Privacy, Security and Professional Ethics  WS  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 8:30 a.m. - 9:30 a.m.

**DATA_O 570-001**  DATA_O  001  Predictive Modelling  WS  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.

**DATA_O 570-L01**  DATA_O  L01  Predictive Modelling  WS  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. Laboratory In Person Learning Thu 12:30 p.m. - 4:30 p.m.

**DATA_O 570-T1A**  DATA_O  T1A  Predictive Modelling  WS  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. Discussion In Person Learning Thu 8:30 a.m. - 9:30 a.m.

**DATA_O 571-010**  DATA_O  010  Resampling and Regularisation  WS  Resampling techniques and regularization for linear models. Bootstrap, jackknife, cross-validation, ridge regression, lasso, discussion of tuning parameters. Restricted to students in the MDS program. Prerequisite: DATA 570. Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

**DATA_O 571-L01**  DATA_O  L01  Resampling and Regularisation  WS  Resampling techniques and regularization for linear models. Bootstrap, jackknife, cross-validation, ridge regression, lasso, discussion of tuning parameters. Restricted to students in the MDS program. Prerequisite: DATA 570. Laboratory In Person Learning Tue 12:30 p.m. - 4:30 p.m.

**DATA_O 571-T1A**  DATA_O  T1A  Resampling and Regularisation  WS  Resampling techniques and regularization for linear models. Bootstrap, jackknife, cross-validation, ridge regression, lasso, discussion of tuning parameters. Restricted to students in the MDS program. Prerequisite: DATA 570. Discussion In Person Learning Tue 8:30 a.m. - 9:30 a.m.

**DATA_O 580-001**  DATA_O  001  Modelling and Simulation I  WS  Pseudorandom number generation, testing and transformation to other discrete and continuous data types. Introduction to Poisson processes and the simulation of data from predictive models, as well as temporal and spatial models. Restricted to students in the MDS program. Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

**DATA_O 580-L01**  DATA_O  L01  Modelling and Simulation I  WS  Pseudorandom number generation, testing and transformation to other discrete and continuous data types. Introduction to Poisson processes and the simulation of data from predictive models, as well as temporal and spatial models. Restricted to students in the MDS program. Laboratory In Person Learning Thu 12:30 p.m. - 4:30 p.m.

**DATA_O 580-T1A**  DATA_O  T1A  Modelling and Simulation I  WS  Pseudorandom number generation, testing and transformation to other discrete and continuous data types. Introduction to Poisson processes and the simulation of data from predictive models, as well as temporal and spatial models. Restricted to students in the MDS program. Discussion In Person Learning Thu 8:30 a.m. - 9:30 a.m.

**DIHU_O 155-001**  DIHU_O  001  Writing and Making with Technology in the Humanities  WS  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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155. Lecture In Person Learning Fri 12:00 p.m. - 2:00 p.m.

**DIHU_O 155-T1A**  DIHU_O  T1A  Writing and Making with Technology in the Humanities  WS  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 involves practice-based instruction in humanities criticism, prototyping, writing and research. Equivalency: ENGL 155. Discussion In Person Learning Fri 11:00 a.m. - 12:00 p.m.
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<td>001</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>EAP_O 104-001</td>
<td>English for Academic Purposes Level IV</td>
<td>002</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>EAP_O 104-002</td>
<td>English for Academic Purposes Level IV</td>
<td>002</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
</tbody>
</table>
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 (240 hours). Prerequisite: Successful completion of EAP 104 or minimum
English language competence level (see English Language Proficiency Tests at
https://okanagan.calendar.ubc.ca/admissions/english-language-admission-standard/english-language-
proficiency-tests-and-programs). Registration limited to students in the English Foundation Program.

EAP_O 104-003
EAP_O 003 English for Academic Purposes Level IV WS
Lecture In Person Learning Lecture Mon Tue Wed Thu Fri 2:00 p.m. - 5:00 p.m.

ECED_O 458-001
ECED_O 001 Observation and Documentation in Early Childcare WS
Lecture Online Learning Arranged Arranged

ECON_O 101-001
ECON_O 001 Principles of Microeconomics WS
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. [3-0-0]
Lecture In Person Learning Lecture Mon Wed Fri 11:00 a.m. - 12:30 p.m.

ECON_O 101-002
ECON_O 002 Principles of Microeconomics WS
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. [3-0-0]
Lecture In Person Learning Lecture Mon Wed Fri 5:00 p.m. - 6:30 p.m.

ECON_O 102-001
ECON_O 001 Principles of Macroeconomics WS
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]
Lecture In Person Learning Lecture Tue Thu 12:30 p.m. - 2:00 p.m.

ECON_O 204-001
ECON_O 001 Intermediate Microeconomic Analysis WS
Microeconomics 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.
Discussion In Person Learning Discussion Tue Thu 3:30 p.m. - 5:00 p.m.

ECON_O 204-002
ECON_O 002 Intermediate Microeconomic Analysis WS
Microeconomics 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.
Discussion In Person Learning Discussion Tue Thu 10:00 a.m. - 11:00 a.m.

ECON_O 204-003
ECON_O 003 Intermediate Microeconomic Analysis WS
Microeconomics 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.
Discussion In Person Learning Discussion Mon 9:00 a.m. - 10:00 a.m.

ECON_O 205-001
ECON_O 001 Intermediate Macroeconomic Analysis WS
Macroeconomics 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.
Lecture In Person Learning Lecture Mon Wed Fri 12:30 p.m. - 2:00 p.m.

ECON_O 205-002
ECON_O 002 Intermediate Macroeconomic Analysis WS
Macroeconomics 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.
Discussion In Person Learning Discussion Mon 11:00 a.m. - 12:00 p.m.

ECON_O 205-003
ECON_O 003 Intermediate Macroeconomic Analysis WS
Macroeconomics 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.
Discussion In Person Learning Discussion Mon 8:00 a.m. - 9:00 a.m.

ECON_O 225-001
ECON_O 001 Data and Statistics for Economics WS
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. [3-0-0]
Lecture In Person Learning Lecture Mon Wed Fri 2:00 p.m. - 3:30 p.m.

ECON_O 232-001
ECON_O 001 History of Economic Thought WS
Evolution of economic thinking from ancient to present times. The Greek, Islamic, and Medieval scholars; the
Physiocrats, Adam Smith, Malthus, Bentham, Ricardo, Mill, Marx, Keynes, and other major economic thinkers.
Development of fundamental economic ideas and conflicting perspectives are studied within their social and
economic context. [3-0-0] Prerequisite: All of ECON 101, ECON 102.
Lecture In Person Learning Lecture Mon Wed Fri 9:30 a.m. - 11:00 a.m.

ECON_O 295-001
ECON_O 001 Managerial Economics WS
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. [3-0-0]
Prerequisite: All of ECON 101, ECON 102.
Lecture In Person Learning Lecture Tue Thu 11:00 a.m. - 12:30 p.m.

ECON_O 327-001
ECON_O 001 Introduction to Empirical Economics WS
The essentials of probability and statistics for applied work in economics. Topics include descriptive statistics,
probability, estimation, hypothesis testing, and analysis of variance. [3-0-1] Prerequisite: All of ECON 101,
ECON 102, ECON 225 and one of MATH 100, MATH 116.
Lecture In Person Learning Lecture Tue Thu 12:30 p.m. - 2:00 p.m.

ECON_O 327-002
ECON_O 002 Introduction to Empirical Economics WS
The essentials of probability and statistics for applied work in economics. Topics include descriptive statistics,
probability, estimation, hypothesis testing, and analysis of variance. [3-0-1] Prerequisite: All of ECON 101,
ECON 102, ECON 225 and one of MATH 100, MATH 116.
Discussion In Person Learning Discussion Tue 11:00 a.m. - 12:00 p.m.

ECON_O 327-003
ECON_O 003 Introduction to Empirical Economics WS
The essentials of probability and statistics for applied work in economics. Topics include descriptive statistics,
probability, estimation, hypothesis testing, and analysis of variance. [3-0-1] Prerequisite: All of ECON 101,
ECON 102, ECON 225 and one of MATH 100, MATH 116.
Discussion In Person Learning Discussion Tue 8:00 a.m. - 9:00 a.m.

ECON_O 339-001
ECON_O 001 Economics of Technological Change WS
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 Lecture Tue Thu 2:00 p.m. - 3:30 p.m.

ECON_O 340-001
ECON_O 001 Financial Economics WS
Fundamental topics in financial economics, including net present value, risk and expected return, valuation of
bonds and equities, the capital asset pricing model, futures and options, and international investing. [3-0-0]
Prerequisite: All of ECON 101, ECON 102.
Lecture In Person Learning Lecture Tue Thu 2:00 p.m. - 3:30 p.m.

ECON_O 345-001
ECON_O 001 Money and Banking WS
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 347 or ECON 391W. [3-0-0] Prerequisite: All of ECON 101,
ECON 102.
Lecture In Person Learning Lecture Wed Fri 12:30 p.m. - 2:00 p.m.
ECON 351-001  ECON 0 001  Women in the Economy  W5  Lecture  In Person Learning  Mon Wed  12:30 p.m. - 2:00 p.m.

ECON 353-001  ECON 0 001  Urban and Transportation Economics  W5  Lecture  In Person Learning  Wed Fri  9:30 a.m. - 11:00 a.m.

ECON 355-001  ECON 0 001  International Trade  W5  Experiential  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

ECON 360-001  ECON 0 001  Labour Economics  W5  Lecture  In Person Learning  Wed Fri  9:30 a.m. - 11:00 a.m.

ECON 361-001  ECON 0 001  Economics of Industrial Relations  W5  Lecture  In Person Learning  Tue Thu  3:30 p.m. - 5:00 p.m.

ECON 363-001  ECON 0 001  Health Economics  W5  Lecture  In Person Learning  Mon Wed  2:00 p.m. - 3:30 p.m.

ECON 370-101  ECON 0 101  Benefit-Cost Analysis and the Economics of Props W5  Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

ECON 371-001  ECON 0 001  Economics of the Environment  W5  Lecture  In Person Learning  Tue Thu  5:00 p.m. - 6:30 p.m.

ECON 386-001  ECON 0 001  Industrial Organization and Regulation  W5  Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

ECON 391-Y 001  ECON 0 Y Y 001  Topics in Economics  W1  Lecture  In Person Learning  Wed Fri  2:00 p.m. - 3:30 p.m.

ECON 402-001  ECON 0 001  Applied Macroeconomic Analysis  W5  Lecture  In Person Learning  Tue Thu  2:00 p.m. - 3:30 p.m.

ECON 427-001  ECON 0 001  Econometrics  W5  Lecture  In Person Learning  Mon Wed  3:30 p.m. - 5:00 p.m.

EDST 498-D 001  EDST 0 D D 001  Contemporary Educational Practice  W5  Seminar that explores various approaches, projects, methodologies, and teaching applications. Restricted to students with at least third-year standing. Pass/Fail. [3-0-0] Lecture  In Person Learning  Sat (Alternate weeks)  9:00 a.m. - 4:00 p.m.

EDUC 100-002  EDUC 0 002  Controversial Issues in Education  W5  Lecture  In Person Learning  Mon Wed  9:30 a.m. - 11:00 a.m.

EDUC 104-001  EDUC 0 001  Introduction to Academic Pedagogy: An Aborigi-W1  Lecture  In Person Learning  Wed Fri  2:00 p.m. - 3:30 p.m.

EDUC 104-003  EDUC 0 003  Introduction to Academic Pedagogy: An Aborigi-W1  Lecture  Online Learning  Arranged Arranged

EDUC 160-001  EDUC 0 001  Mathematical Reasoning for Arts and Education W5  Lecture  In Person Learning  Mon Wed  8:00 a.m. - 9:30 a.m.

EDUC 300-001  EDUC 0 001  Inquiry in Education  W5  Lecture  In Person Learning  Thu  5:00 p.m. - 8:00 p.m.

EDUC 400-001  EDUC 0 001  Designing and Facilitating Effective Learning Exp W5  Lecture  In Person Learning  Mon  2:00 p.m. - 5:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Credits</th>
<th>Timetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC_O 403-001</td>
<td>EDUC_O 001 Becoming a Scholar-Practitioner</td>
<td>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</td>
<td>2</td>
<td>Lecture In Person Learning Mon Tue Wed Thu Fri 8:00 a.m. - 5:30 p.m.</td>
</tr>
<tr>
<td>EDUC_O 451-001</td>
<td>EDUC_O 001 Developing a Pedagogical Stance</td>
<td>Foundational pedagogical knowledge and practice explored through seminars, colloquia and online learning where teacher candidates develop their practice and understandings related to diversity, literacies, numeracy and learning theories. Pass/Fail. Prerequisite: EDUC 403.</td>
<td>3</td>
<td>Lecture In Person Learning Mon Tue Wed Thu Fri 8:00 a.m. - 5:30 p.m.</td>
</tr>
<tr>
<td>EDUC_O 440-P01</td>
<td>EDUC_O 001 Field Experience: Literacies and Numeracies in A W1</td>
<td>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.</td>
<td>0</td>
<td>Independent Study In Person Learning Arranged Arranged</td>
</tr>
<tr>
<td>EDUC_O 444-P01</td>
<td>EDUC_O 001 Field Experience: Final Practicum/Internship W1</td>
<td>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.</td>
<td>0</td>
<td>Independent Study In Person Learning Arranged Arranged</td>
</tr>
<tr>
<td>EDUC_O 500-001</td>
<td>EDUC_O 001 Research Methodology in Education Part I W1</td>
<td>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.</td>
<td>3</td>
<td>Lecture In Person Learning Sat [Alternate weeks] 9:00 a.m. - 3:00 p.m.</td>
</tr>
<tr>
<td>EDUC_O 554-001</td>
<td>EDUC_O 001 Coyote Stories: Pedagogy and Praxis W1</td>
<td>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.</td>
<td>3</td>
<td>Seminar Online Learning Wed 5:00 p.m. - 8:00 p.m.</td>
</tr>
<tr>
<td>EDUC_O 562-M-001</td>
<td>EDUC_O M_M-001 Special Topics in Education W1</td>
<td>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.</td>
<td>3</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
</tr>
<tr>
<td>EDUC_O 598-001</td>
<td>EDUC_O 001 M.Ed. Seminar with Project W1</td>
<td>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.</td>
<td>2</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>EDUC_O 598-201</td>
<td>EDUC_O 001 M.Ed. Seminar with Project W1-2</td>
<td>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.</td>
<td>2</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>EDUC_O 599-001</td>
<td>EDUC_O 001 Senior Seminar with Thesis W1</td>
<td>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.</td>
<td>3</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>EDUC_O 599-201</td>
<td>EDUC_O 001 Senior Seminar with Thesis W1-2</td>
<td>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.</td>
<td>3</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>EDUC_O 600-001</td>
<td>EDUC_O 001 Research Seminar II: Project Fundamentals W1</td>
<td>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.</td>
<td>3</td>
<td>Seminar Online Learning Wed 5:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>EESC_O 101-001</td>
<td>EESC_O 001 Environmental Science W1</td>
<td>The geological history of what is now Canada from the formation of Earth to the present day. Practical applications of geology to Canadian society and the economy.</td>
<td>3</td>
<td>Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>EESC_O 104-001</td>
<td>EESC_O 001 Four Billion Years and Counting W1</td>
<td>The geological history of what is now Canada from the formation of Earth to the present day. Practical applications of geology to Canadian society and the economy.</td>
<td>3</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>EESC_O 111-001</td>
<td>EESC_O 001 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Lecture In Person Learning Mon Wed Fri 2:00 p.m. - 3:00 p.m.</td>
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<tr>
<td>EESC_O 111-101</td>
<td>EESC_O 101 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Lecture In Person Learning Thu 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>EESC_O 111-102</td>
<td>EESC_O 102 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Laboratory In Person Learning Mon 10:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>EESC_O 111-103</td>
<td>EESC_O 103 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Laboratory In Person Learning Tue 10:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>EESC_O 111-104</td>
<td>EESC_O 104 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.</td>
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<tr>
<td>EESC_O 111-105</td>
<td>EESC_O 105 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Laboratory In Person Learning Fri 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>EESC_O 111-106</td>
<td>EESC_O 106 Earth Science W1</td>
<td>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.</td>
<td>3</td>
<td>Laboratory In Person Learning Thu 12:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>EESC_O 200-001</td>
<td>EESC_O 001 Mineralogy W1</td>
<td>Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals.</td>
<td>2</td>
<td>Lecture In Person Learning Mon Wed Fri 11:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>EESC_O 200-002</td>
<td>EESC_O 002 Mineralogy W1</td>
<td>Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals.</td>
<td>2</td>
<td>Lecture In Person Learning Thu 11:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>EESC_O 200-003</td>
<td>EESC_O 003 Mineralogy W1</td>
<td>Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals.</td>
<td>2</td>
<td>Lecture In Person Learning Thu 11:00 a.m. - 12:00 p.m.</td>
</tr>
<tr>
<td>EESC_O 200-004</td>
<td>EESC_O 004 Mineralogy W1</td>
<td>Crystallography and the physical and chemical properties of minerals. Recognition and identification of common minerals.</td>
<td>2</td>
<td>Lecture In Person Learning Thu 11:00 a.m. - 12:00 p.m.</td>
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<tr>
<td>Course Code</td>
<td>Name</td>
<td>Credits</td>
<td>Description</td>
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<tr>
<td>EESC 222-001</td>
<td>Geology 101</td>
<td>3</td>
<td>Description and classification of igneous and metamorphic rocks.</td>
<td></td>
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<tr>
<td>EESC 222-010</td>
<td>Geology 102</td>
<td>3</td>
<td>Description and classification of igneous and metamorphic rocks.</td>
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<tr>
<td>EESC 222-020</td>
<td>Geology 103</td>
<td>3</td>
<td>Description and classification of igneous and metamorphic rocks.</td>
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<tr>
<td>EESC 301-001</td>
<td>Limnology 101</td>
<td>3</td>
<td>Description and classification of limnology.</td>
<td></td>
</tr>
<tr>
<td>EESC 301-010</td>
<td>Limnology 102</td>
<td>3</td>
<td>Description and classification of limnology.</td>
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<tr>
<td>EESC 313-010</td>
<td>Management of Forested Watersheds 101</td>
<td>3</td>
<td>Description and classification of management of forested watersheds.</td>
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<tr>
<td>EESC 313-011</td>
<td>Management of Forested Watersheds 102</td>
<td>3</td>
<td>Description and classification of management of forested watersheds.</td>
<td></td>
</tr>
<tr>
<td>EESC 322-001</td>
<td>Igneous and Metamorphic Petrology 101</td>
<td>3</td>
<td>Description and classification of igneous and metamorphic rocks.</td>
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<tr>
<td>EESC 322-010</td>
<td>Igneous and Metamorphic Petrology 102</td>
<td>3</td>
<td>Description and classification of igneous and metamorphic rocks.</td>
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<td>3</td>
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<td></td>
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<tr>
<td>EESC 323-010</td>
<td>Geochemistry 101</td>
<td>3</td>
<td>Description and classification of geochemistry.</td>
<td></td>
</tr>
<tr>
<td>EESC 323-011</td>
<td>Geochemistry 102</td>
<td>3</td>
<td>Description and classification of geochemistry.</td>
<td></td>
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<tr>
<td>EESC 325-001</td>
<td>Structural Geology 101</td>
<td>3</td>
<td>Description and classification of structural geology.</td>
<td></td>
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**Prerequisites:**
- For EESC 222-001, EESC 222-010, EESC 222-020, EESC 301-001, EESC 301-010, EESC 313-010, EESC 313-011, EESC 314-001, EESC 322-001, EESC 322-010, EESC 322-020, EESC 323-010, EESC 325-001:
  - One of EESC 111, EESC 112, or GEOG 108.
  - Third-year standing in Biology, Earth and Environmental Sciences, Environmental Chemistry, or Freshwater Science.

**Equivalencies:**
- GEOG 314 for EESC 314-001
- BIOL 307 for EESC 301-001, EESC 301-010
- BIOL 375 for EESC 301-001, EESC 301-010
- BIOL 307 for EESC 301-001, EESC 301-010
- BIOL 307 for EESC 301-001, EESC 301-010
- BIOL 307 for EESC 301-001, EESC 301-010
**EESC O 325-L01**  
**L01** Structural Geology  
**W1**  
Description and classification of geologic structures. Stress, strain and their relationship to deformation processes. Mechanics of faulting, folding, and shear zone development. Interpretation of physical-deformation processes and the resulting geologic structures.  
3-3-0  
**Prerequisite:** EESC 111.  
**Third-year standing in EEsc Major or EESC Minor.**  
**Laboratory**  
**In Person Learning**  
**Wed**  
**6:30 p.m. - 9:30 p.m.**

**EESC O 342-001**  
**EESC O**  
**001** Hydrogeology  
**W1**  
Introduction to the theory of groundwater flow; flow nets; regional groundwater resource evaluation; well hydraulics.  
3-3-0  
**Prerequisite:** Either a MATH 100 and one of PHYS 111, PHYS 112 and one of EESC 111, EESC 121, GEOG 109, EESC 205; or a first-year standing.  
**Lecture**  
**In Person Learning**  
**Mon Wed**  
**5:00 p.m. - 6:30 p.m.**

**EESC O 342-001**  
**EESC O**  
**002** Hydrogeology  
**W1**  
Introduction to the theory of groundwater flow; flow nets; regional groundwater resource evaluation; well hydraulics.  
3-3-0  
**Prerequisite:** Either a MATH 100 and one of PHYS 111, PHYS 112 and one of EESC 111, EESC 121, GEOG 109, EESC 205; or a first-year standing.  
**Lecture**  
**In Person Learning**  
**Fri**  
**2:00 p.m. - 5:00 p.m.**

**EESC O 342-001**  
**EESC O**  
**003** Hydrogeology  
**W1**  
Introduction to the theory of groundwater flow; flow nets; regional groundwater resource evaluation; well hydraulics.  
3-3-0  
**Prerequisite:** Either a MATH 100 and one of PHYS 111, PHYS 112 and one of EESC 111, EESC 121, GEOG 109, EESC 205; or a first-year standing.  
**Lecture**  
**In Person Learning**  
**Thu**  
**2:00 p.m. - 5:00 p.m.**

**EESC O 398-001**  
**EESC O**  
**001** Technical Communication  
**W1**  
Written and oral communication. Report preparation, business correspondence, and oral presentation of technical material. Advanced grammar and writing styles. Logical writing; referencing; and editing. Presenting technical information to scientists and non-scientists.  
3-2-0  
**Prerequisite:** Three credits of APSC 176, CORH 203, ENGL 109,112,113,114,160,151,153,154,155, or 156.  
**Lecture**  
**Discussion**  
**In Person Learning**  
**Mon**  
**11:00 a.m. - 12:00 p.m.**

**EESC O 411-001**  
**EESC O**  
**001** Quaternary Glacial Environments  
**W1**  
Origin, nature, and distribution of glacial landforms and sediments, glacial mechanics, hydrology, and Quaternary stratigraphy. Students are required to attend several field trips on weekends.  
3-1-0  
**Prerequisite:** One of EESC 222, EESC 396, GEOG 222, GEOG 396.  
**Lecture**  
**In Person Learning**  
**Wed Fri**  
**11:00 a.m. - 12:30 p.m.**

**EESC O 449-001**  
**EESC O**  
**001** 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 449-002**  
**EESC O**  
**002** 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 449-003**  
**EESC O**  
**003** 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 449-004**  
**EESC O**  
**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**  
**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**

**EESC O 449-006**  
**EESC O**  
**006** 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 449-007**  
**EESC O**  
**007** 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 449-008**  
**EESC O**  
**008** 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 449-009**  
**EESC O**  
**009** 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 456-001**  
**EESC O**  
**001** Soil Science  
**W1**  
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.**  
**Equivalence:** GEOG466  
**In Person Learning**  
**Mon Wed**  
**3:30 p.m. - 5:00 p.m.**
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<td>ENGL 220-002</td>
<td>Foundations: Literature in Historical Context 1 W1</td>
<td>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 153, ENGL 155, ENGL 157, ENGL 159, ENGL 156. Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.</td>
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<tr>
<td>ENGL 224-001</td>
<td>Foundations: Reading Across Borders W1</td>
<td>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 35% of class time involves practice-based instruction in critical analysis, essay writing and research. Credit will be granted for only 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. Equivalency: CLT1230 Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>ENGL 234-001</td>
<td>Foundations: Indigenous Literature W1</td>
<td>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 ENGL 234 or CULT 250. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 153, ENGL 154, ENGL 155, ENGL 156. Equivalency: CULT 250 Lecture In Person Learning Wed Fri 3:30 p.m. - 5:00 p.m.</td>
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<tr>
<td>ENGL 250-001</td>
<td>Foundations: Interdisciplinary Theory and Method W1</td>
<td>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 Lecture In Person Learning Wed Thu 12:30 p.m. - 2:00 p.m.</td>
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<tr>
<td>ENGL 309-A_001</td>
<td>Modern Critical Theory and Interdisciplinary Methods W1</td>
<td>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. Recommended for all English Majors. No more than 6 credits in total will be granted for ENGL 309, CULT 371 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. and third-year standing. Equivalency: CULT 371 Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.</td>
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<td>ENGL 339-001</td>
<td>American Literature from the Civil War to WWI W1</td>
<td>The movement from the literature of the Gilded Age to the Progressive Era, paying close attention to the cultural work done by realist 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. Recommended: One of ENGL 221 or ENGL 233. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.</td>
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<tr>
<td>ENGL 349-C_001</td>
<td>17th-Century Literature W1</td>
<td>Study of how literary works reflect and respond to social, political, and religious change in the context of revolution. Popular and polemical works, including advice literature, polemical 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 Wed Fri 3:30 p.m. - 5:00 p.m.</td>
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<td>ENGL 350-C_001</td>
<td>18th- and 17th-Century Studies W1</td>
<td>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-discipline pedagogics, experiential learning, community-based learning and/or undergraduate research opportunities. With different topics, this course may be taken more than once for credit. Prerequisites: 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 Thu 11:00 a.m. - 12:30 p.m.</td>
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<tr>
<td>ENGL 393-001</td>
<td>Contemporary African identities in the age of accelerating globalization W1</td>
<td>Contemporary African identities in the age of accelerating globalization. Prerequisite: One of ENGL 109, ENGL 112, ENGL 114, ENGL 150, ENGL 151, ENGL 154, ENGL 155, ENGL 156. and third-year standing. Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.</td>
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<tr>
<td>ENGL 394-B_001</td>
<td>Interdisciplinary Studies in English Literature W1</td>
<td>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-discipline pedagogics, experiential learning, community-based learning and/or undergraduate research opportunities. With different topics, this course may be taken more than once for credit. Prerequisites: 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 11:00 a.m. - 12:30 p.m.</td>
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<td>ENGL 395-001</td>
<td>Popular Literature W1</td>
<td>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, humanities 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 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 115, ENGL 116. and third-year standing. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.</td>
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<tr>
<td>ENGL 397-B_001</td>
<td>Postcolonial Studies W1</td>
<td>Examines colonization, 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. With different topics this course may be taken more than once for credit. No more than 9 credits in total will be granted for ENGL 437, CULT 437, or any combination thereof. Prerequisites: 3 credits of 300-level ENGL. Equivalency: CULT 437 Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>ENGL 409-C_001</td>
<td>Major Authors of the 20th and 21st Centuries W1</td>
<td>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 CULT 450: [3-0-0] Prerequisite: 3 credits of 300-level ENGL. Equivalency: CULT 450 Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>ENGL 473-001</td>
<td>Studies in Indigenous Literature and Criticism W1</td>
<td>Focus on media such as music, film, music video, television, advertising, and the Internet. No more than 9 credits in total will be granted for ENGL 473 or CULT 450. [3-0-0] Prerequisite: 3 credits of 300-level ENGL. Equivalency: CULT 473 Lecture In Person Learning Mon Wed 9:00 a.m. - 9:30 a.m.</td>
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<tr>
<td>ENGL 493-K_001</td>
<td>Topics in Popular Culture W1</td>
<td>Examines critical and cultural theory and how it informs current practices of research. Seminar In Person Learning Wed 2:00 p.m. - 5:00 p.m.</td>
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<tr>
<td>ENGL 503-001</td>
<td>Practicalities in the Profession of Literary Studies an W1</td>
<td>Introduction to the profession’s expectations, practices, and responsibilities. Pass/Fail. Lecture In Person Learning Tue 11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>ENGL 525-K_001</td>
<td>Studies in Diversity and Identity W1</td>
<td>Lecture In Person Learning Mon 11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>ENGL 531-A_101</td>
<td>Place and Power W1</td>
<td>Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.</td>
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</table>
ENGR_O 310-T1D ENGR_O 101 Engineering Project Management WS Project management including initiating, planning, executing, controlling, and closing engineering projects. Managing the scope, costs, schedule, risks, and human resources in engineering projects. External party engagement, including Indigenous communities. [3-0-0] Prerequisite: All of APSC 169, APSC 201.
Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

ENGR_O 310-T1B ENGR_O 11A Fluid Mechanics II WS Differential conservation, equations and solutions, boundary layers, compressible flows, and introduction to turbomachinery. [3-2*-1] Prerequisite: APSC 253.
Laboratory In Person Learning Wed (Alternate weeks) 2:00 p.m. - 4:00 p.m.

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

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

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

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

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

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

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

Laboratory In Person Learning Fri (Alternate weeks) 8:00 a.m. - 10:00 a.m.

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

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

ENGR_O 310-T1A ENGR_O 11A Fluid Mechanics II WS Differential conservation, equations and solutions, boundary layers, compressible flows, and introduction to turbomachinery. [3-2*-1] Prerequisite: APSC 253.
Discussion Online Learning Mon 1:00 p.m. - 2:00 p.m.

Discussion Online Learning Mon 3:00 p.m. - 4:00 p.m.

Discussion Online Learning Mon 10:00 a.m. - 11:00 a.m.

Discussion Online Learning Tue 1:00 p.m. - 2:00 p.m.

Discussion Online Learning Fri 2:00 p.m. - 3:00 p.m.

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

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

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

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

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

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

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

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

Laboratory In Person Learning Mon (Alternate weeks) 5:00 p.m. - 7:00 p.m.

Lecture In Person Learning Tue Thu 5:00 p.m. - 6:30 p.m.

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

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


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


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


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


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


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


Laboratory In Person Learning Mon (Alternate weeks) 5:00 p.m. - 7:00 p.m.


Discussion In Person Learning Wed 10:00 a.m. - 11:00 a.m.


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


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


Discussion In Person Learning Fri 10:00 a.m. - 11:00 a.m.

Hydrologic processes, climate change and hydrologic cycle analysis, urban flood management. Emphasis on quantitative techniques. [3-0-0] Prerequisite: All of APSC 253, APSC 254.

Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

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

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

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

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

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

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

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

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

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

Channel characteristics, flow classification, specific energy and momentum, uniform flow, critical flow, hydraulic jump, flow control structures, channel design, steady flow, contaminant transport. [3-2*-0] Prerequisite: APSC 253.

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

Air, water, environmental pollutants, and treatment design concepts. [3-0-0] Prerequisite: All of APSC 182, APSC 183, APSC 253.

Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 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.

Lecture In Person Learning Mon Wed 6:30 p.m. - 8:00 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 Thu (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.

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

Microcomputer architecture, number representation, assembly language, parallel and serial input/output, interrupts, memory, peripherals. [3-2*-0] Prerequisite: APSC 255.

Microcomputer architecture, number representation, assembly language, parallel and serial input/output, interrupts, memory, peripherals. [3-2*-0] Prerequisite: APSC 255.

Microcomputer architecture, number representation, assembly language, parallel and serial input/output, interrupts, memory, peripherals. [3-2*-0] Prerequisite: APSC 255.

Microcomputer architecture, number representation, assembly language, parallel and serial input/output, interrupts, memory, peripherals. [3-2*-0] Prerequisite: APSC 255.

Microcomputer architecture, number representation, assembly language, parallel and serial input/output, interrupts, memory, peripherals. [3-2*-0] Prerequisite: APSC 255.

Microcomputer architecture, number representation, assembly language, parallel and serial input/output, interrupts, memory, peripherals. [3-2*-0] Prerequisite: APSC 255.

Set theory, conditional probability, distribution function, functions of random variables, central limit theorem, sample distributions, confidence intervals, elements of parameter estimation and hypothesis testing, testing the fit of a distribution. Applications of probability and statistics in engineering. Credit will be granted for only one of ENGR 360 or ENGR 560. [3-0-1] Prerequisite: All of APSC 248, APSC 254.

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

Set theory, conditional probability, distribution function, functions of random variables, central limit theorem, sample distributions, confidence intervals, elements of parameter estimation and hypothesis testing, testing the fit of a distribution. Applications of probability and statistics in engineering. Credit will be granted for only one of ENGR 360 or ENGR 560. [3-0-1] Prerequisite: All of APSC 248, APSC 254.

Discussion Online Learning Tue 9:00 a.m. - 10:00 a.m.

Set theory, conditional probability, distribution function, functions of random variables, central limit theorem, sample distributions, confidence intervals, elements of parameter estimation and hypothesis testing, testing the fit of a distribution. Applications of probability and statistics in engineering. Credit will be granted for only one of ENGR 360 or ENGR 560. [3-0-1] Prerequisite: All of APSC 248, APSC 254.

Discussion Online Learning Tue 9:00 a.m. - 10:00 a.m.

Set theory, conditional probability, distribution function, functions of random variables, central limit theorem, sample distributions, confidence intervals, elements of parameter estimation and hypothesis testing, testing the fit of a distribution. Applications of probability and statistics in engineering. Credit will be granted for only one of ENGR 360 or ENGR 560. [3-0-1] Prerequisite: All of APSC 248, APSC 254.

Discussion Online Learning Tue 9:00 a.m. - 10:00 a.m.

Review comprehensive study of phase diagrams, phase transformations, TTT diagrams, heat treatment, ferrous and nonferrous alloys, composite and concrete materials, and materials selection. [3-0-0] Prerequisite: APSC 255.

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

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-0] Prerequisite: APSC 255.

Lecture In Person Learning Tue 5:00 p.m. - 6:30 p.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-0] Prerequisite: APSC 255.

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

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-0] Prerequisite: APSC 255.

Lecture In Person Learning Mon 12:00 p.m. - 1:00 p.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-0] Prerequisite: APSC 255.

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

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-0] Prerequisite: APSC 255.

Lecture In Person Learning Fri 1:00 p.m. - 2:00 p.m.

The design, analysis, and synthesis of mechanisms, linkages, cams, and gear trains; dynamic force analysis; balancing of rotating and reciprocating masses. [3-0-0] Prerequisite: APSC 255.

Lecture In Person Learning Fri 10:00 a.m. - 11:00 a.m.


Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.


Discussion In Person Learning Thu 8:00 a.m. - 9:00 a.m.
ENGR 401-001 ENGR_O 001 Bioinstrumentation WS Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

ENGR 401-L1A ENGR_O 001 Biomedical Measurement and Control Systems WS Lecture In Person Learning Thu (Alternate weeks) 8:00 a.m. - 10:00 a.m.

ENGR 401-L1B ENGR_O 001 Biomedical Measurement and Control Systems WS Lecture In Person Learning Thu (Alternate weeks) 8:00 a.m. - 10:00 a.m.

ENGR 401-L1C ENGR_O 001 Biomedical Measurement and Control Systems WS Laboratory In Person Learning Wed (Alternate weeks) 4:00 p.m. - 6:00 p.m.

ENGR 408-001 ENGR_O 001 Energy System Transition WS Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

ENGR 409-001 ENGR_O 001 Construction Digitization and Informatics WS Lecture In Person Learning Tue Thu 11:00 a.m. - 12:30 p.m.

ENGR 418-001 ENGR_O 001 Applied Machine Learning for Engineers WS Lecture In Person Learning Mon Wed 12:30 p.m. - 2:00 p.m.

ENGR 426-101 ENGR_O 001 Analysis of Indeterminate Structures WS Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

ENGR 427-101 ENGR_O 001 Reinforced Concrete Design II WS Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

ENGR 428-001 ENGR_O 001 Earthquake Engineering WS Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

ENGR 432-001 ENGR_O 001 Infrastructure Management II WS Lecture In Person Learning Mon Wed 11:00 a.m. - 12:30 p.m.

ENGR 435-001 ENGR_O 001 Transportation Systems Engineering WS Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

ENGR 435-L1A ENGR_O 001 Transportation Systems Engineering WS Laboratory In Person Learning Fri (Alternate weeks) 12:00 p.m. - 2:00 p.m.
| ENGR_O 430-001 | ENGR_O 430-L1A | Transportation Planning | WI | 
| Processes and techniques to facilitate properly integrated land use and transport systems, including: survey and data techniques; trip generation; trip distribution; modal choice; trip assignment; development traffic impact assessment; sustainable transportation strategies; and vulnerable road users. Credit will be granted for only one of ENGR 430 or ENGR 536. | Lecture | In Person Learning | Mon Wed | 8:00 a.m. - 9:30 a.m. |
| ENGR_O 436-L1A | ENGR_O 430-L1A | Transportation Planning | WI | 
| Processes and techniques to facilitate properly integrated land use and transport systems, including: survey and data techniques; trip generation; trip distribution; modal choice; trip assignment; development traffic impact assessment; sustainable transportation strategies; and vulnerable road users. Credit will be granted for only one of ENGR 436 or ENGR 536. | Laboratory | In Person Learning | Fri (Alternate weeks) | 10:00 a.m. - 12:00 p.m. |
| ENGR_O 438-001 | ENGR_O 438-L1A | Rock Mechanics and Rock Engineering | WI | 
| Mechanical properties of intact rock. Rock mass properties and classifications. Structural mapping and stereonets. Rock and rock mass strength criteria. Stress in rock masses. Rock slope stability analysis. | Lecture | In Person Learning | Tue Thu | 12:30 p.m. - 2:00 p.m. |
| ENGR_O 440-010 | ENGR_O 440-L1A | Foundation Engineering | WI | 
| Mechanical properties of intact rock. Rock mass properties and classifications. Structural mapping and stereonets. Rock and rock mass strength criteria. Stress in rock masses. Rock slope stability analysis. | Lecture | In Person Learning | Tue (Alternate weeks) | 2:00 p.m. - 4:00 p.m. |
| ENGR_O 444-201 | ENGR_O 444-L1A | Solid Waste Engineering | WI | 
| Applications of engineering principles and practices to land disposal of hazardous and non-hazardous wastes. | Lecture | In Person Learning | Tue Thu | 12:30 p.m. - 2:00 p.m. |
| ENGR_O 447-101 | ENGR_O 447-L1A | Design of Processes for Water and Wastewater | WI | 
| Theory and design of fundamental physical, chemical, and biological unit operations for drinking water and municipal wastewater treatment. The design principles of coagulation, flocculation, sedimentation, filtration, biological treatment, solid handling, disinfection, and advanced treatment processes are presented. | Lecture | In Person Learning | Mon Wed | 3:30 p.m. - 5:00 p.m. |
| ENGR_O 447-110 | ENGR_O 447-L1B | Design of Processes for Water and Wastewater | WI | 
| Theory and design of fundamental physical, chemical, and biological unit operations for drinking water and municipal wastewater treatment. The design principles of coagulation, flocculation, sedimentation, filtration, biological treatment, solid handling, disinfection, and advanced treatment processes are presented. | Lecture | In Person Learning | Arranged | Arranged |
| ENGR_O 447-111 | ENGR_O 447-L1C | Design of Processes for Water and Wastewater | WI | 
| Theory and design of fundamental physical, chemical, and biological unit operations for drinking water and municipal wastewater treatment. The design principles of coagulation, flocculation, sedimentation, filtration, biological treatment, solid handling, disinfection, and advanced treatment processes are presented. | Lecture | In Person Learning | Arranged | Arranged |
| ENGR_O 450-001 | ENGR_O 450-L1A | Clinical Engineering | WI | 
| The clinical environment and the role of a clinical engineer in supporting and advancing health care, in applying human factors in the health care setting, and performing health technology management. Labs explore a virtual operating room. | Lecture | In Person Learning | Mon Wed | 9:30 a.m. - 11:00 a.m. |
| ENGR_O 450-010 | ENGR_O 450-L1B | Clinical Engineering | WI | 
| The clinical environment and the role of a clinical engineer in supporting and advancing health care, in applying human factors in the health care setting, and performing health technology management. Labs explore a virtual operating room. | Lecture | In Person Learning | Wed (Alternate weeks) | 4:00 p.m. - 6:00 p.m. |
| ENGR_O 458-201 | ENGR_O 458-L1A | Power Electronics | WI | 
| 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 458 or ENGR 558. | Lecture | In Person Learning | Tue Thu | 12:30 p.m. - 2:00 p.m. |
| ENGR_O 458-210 | ENGR_O 458-L1B | Power Electronics | WI | 
| 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 458 or ENGR 558. | Laboratory | In Person Learning | Tue (Alternate weeks) | 2:00 p.m. - 4:00 p.m. |
| ENGR_O 466-001 | ENGR_O 466-L1A | Introduction to VLSI Systems | WI | 
| The chip design process using VLSI design styles in CMOS technology. Data path, control and register file design and layout. Clocking schemes, flip-flop and latch-based design. Design project using CAD tools. | Lecture | In Person Learning | Mon Wed | 5:00 p.m. - 6:30 p.m. |
| ENGR_O 466-101 | ENGR_O 466-L1B | Introduction to VLSI Systems | WI | 
| The chip design process using VLSI design styles in CMOS technology. Data path, control and register file design and layout. Clocking schemes, flip-flop and latch-based design. Design project using CAD tools. | Laboratory | In Person Learning | Tue (Alternate weeks) | 12:00 p.m. - 2:00 p.m. |
Introduction to fibre optic transmission, single-mode and multimode fibre optics, dispersion and absorption design criteria, semiconductor diode lasers, LEDs, modulators, pn and p-i-n receivers, point-to-point and network implementations of fibre optic networks and integrated photonic systems. Credit will be granted for only one of ENGR 472 or ENGR 572. [3-2*-0] Prerequisite: ENGR 378.

**Lecture**

**In Person Learning**

**Tue Thu**

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

Introduction to fibre optic transmission, single-mode and multimode fibre optics, dispersion and absorption design criteria, semiconductor diode lasers, LEDs, modulators, pn and p-i-n receivers, point-to-point and network implementations of fibre optic networks and integrated photonic 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, Friis 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. [3-2*-0] Prerequisite: ENGR 378.

**Lecture**

**In Person Learning**

**Thu (Alternate weeks)**

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

The principles of heat and mass transfer in engineering processes. Topics include: phase change, conduction, convection, radiation, and mixed modes of heat transfer. The fundamentals of mass and energy balances. Credit will be granted for only one of ENGR 480 or ENGR 580. [3-0-0] Prerequisite: All of ENGR 320, ENGR 385.

**Lecture**

**In Person Learning**

**Tue Thu**

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

Lecture topics and assignments are designed to meet the needs of students in aeronautical and avionic systems, with an emphasis on electrical and optical circuits, and their design and analysis. Students will develop skills in using MATLAB and other computational tools to solve complex problems. Credit will be granted for only one of ENGR 492 or ENGR 592. [3-2*-0] Prerequisite: ENGR 378.

**Lecture**

**In Person Learning**

**Tue Thu**

**2:00 p.m. - 3:30 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. [2-3-0; 0-6-0] Prerequisite: Fourth-year standing.

**Lecture**

**In Person Learning**

**Fri**

**8:00 a.m. - 10:00 a.m.**

A course in which students develop skills in mechanical and materials design, analysis, and manufacturing. Credit will be granted for only one of ENGR 510 or ENGR 401. [3-0-0] Prerequisite: ENGR 385, APSC 258, ENGR 385.

**Lecture**

**In Person Learning**

**Tue Thu**

**3:30 p.m. - 5:00 p.m.**


**Lecture**

**In Person Learning**

**Wed Fri**

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

Fundamentals of machine learning, toolboxes in machine learning, unsupervised learning, applications of machine learning in various engineering disciplines. Credit will be granted for only one of ENGR 518 or ENGR 418.

**Lecture**

**In Person Learning**

**Tue Thu**

**3:30 p.m. - 5:00 p.m.**

Strong ground motion, single and multiple degree-of-freedom systems, earthquake response of linear and inelastic systems, earthquake response and design, and building design considerations. Credit will be granted for only one of ENGR 558 or ENGR 458.

**Lecture**

**In Person Learning**

**Tue Thu**

**12:30 p.m. - 2:00 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 518 or ENGR 458.

Laboratory: In Person Learning
Fri (Alternate weeks)
10:00 a.m. - 12:00 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 PIN receivers, point-to-point and network implementations of fibre optic networks and integrated photonic 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.

Wave propagation models, radiation patterns, directivity and gain, radiation resistance, Friis transmission equation, reciprocity, dipole antennas, image theory, loop antennas, uniform and non-uniform antenna arrays. Credit will be granted for only one of ENGR 574 or ENGR 473.

Lecture: In Person Learning
Mon Wed
11:00 a.m. - 12:30 p.m.

Wave propagation models, radiation patterns, directivity and gain, radiation resistance, Friis transmission equation, reciprocity, dipole antennas, image theory, loop antennas, uniform and non-uniform antenna arrays. Credit will be granted for only one of ENGR 492 or ENGR 542.

Lecture: In Person Learning
Tue Thu
12:30 p.m. - 2:00 p.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 584 or ENGR 484.

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

Project on assigned topic of specialization. This course is restricted to M.Eng. students. Credit will be granted for only one of ENGR 599 or ENGR 499.

Lab: Independent Study
Arranged


Thesis: In Person Learning
Arranged

Thesis: In Person Learning
Arranged

FILM 250 or CRWR 250. [3-0-0] Prerequisite: Two of CRWR 150, CRWR 250, FILM 103, or FILM 250.

Experiential: In Person Learning
Arranged

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Experiential: In Person Learning
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Experiential: In Person Learning
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Experiential: In Person Learning
Arranged

In Person Learning
Mon
2:00 p.m. - 5:00 p.m.

In Person Learning
9:30 a.m. - 11:00 a.m.

In Person Learning
8:00 a.m. - 12:00 p.m.

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

In Person Learning
Mon Wed Fri
2:00 p.m. - 3:00 p.m.
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 101-104.

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 101-104.

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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 101-104.

Prepares students to understand and use sentences and frequently used expressions related to their everyday life, such as simple and routine tasks requiring a direct exchange of information. Corresponds to level A2 of the Common European Framework of Reference for Languages (CEFR). Not available to students who have completed French 12 and/or students who have a CEFR level A2. The next level course series available is FREN 122-123. Prerequisite: FREN 11 or FREN 102 or CEFR Level A1.

Prepares students to understand and use sentences and frequently used expressions related to their everyday life, such as simple and routine tasks requiring a direct exchange of information. Corresponds to level A2 of the Common European Framework of Reference for Languages (CEFR). Not available to students who have completed French 12 and/or students who have a CEFR level A2. The next level course series available is FREN 122-123. Prerequisite: FREN 11 or FREN 102 or CEFR Level A1.

Prepares students to understand and use sentences and frequently used expressions related to their everyday life, such as simple and routine tasks requiring a direct exchange of information. Corresponds to level A2 of the Common European Framework of Reference for Languages (CEFR). Not available to students who have completed French 12 and/or students who have a CEFR level A2. The next level course series available is FREN 122-123. Prerequisite: FREN 11 or FREN 102 or CEFR Level A1.

Refinement of reading, writing and speaking skills through the study of contemporary literature and other authentic documents of the French-speaking world. Corresponds to level B1 of the Common European Framework of Reference for Languages (CEFR). Not available to students who have completed Français Immersion 12 and/or students who have a CEFR level B1 or higher. The next level course series available is FREN 222-223. Prerequisite: One of FREN 104, French 12, or CEFR Level A2.

Refinement of reading, writing and speaking skills through the study of contemporary literature and other authentic documents of the French-speaking world. Corresponds to level B1 of the Common European Framework of Reference for Languages (CEFR). Not available to students who have completed Français Immersion 12 and/or students who have a CEFR level B1 or higher. The next level course series available is FREN 222-223. Prerequisite: One of FREN 104, French 12, or CEFR Level A2.

Training in formal oral presentation in French, Emphasis on structured expression and oral delivery. Prerequisite: Français Langue 12 (Immersion) or both FREN 215 and FREN 221, or CEFR level B2 or higher. The next level course series available is FREN 222-223. Prerequisite: One of FREN 104, French 12, or CEFR Level A2.

Training in formal oral presentation in French, Emphasis on structured expression and oral delivery. Prerequisite: Français Langue 12 (Immersion) or both FREN 215 and FREN 221, or CEFR level B2 or higher. The next level course series available is FREN 222-223. Prerequisite: One of FREN 104, French 12, or CEFR Level A2.

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 101-104.
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. [3-3-0] 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

Lectures 8:00 a.m. - 11:00 a.m.
Laboratory 12:00 p.m. - 2:00 p.m.

Introduction to concepts, methods, modes of explanation, and recent critical changes in the study of human geography. Interpretation and explanation of geographic variables 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 Mon Wed Fri 2:00 p.m. - 3:30 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Equivalency</th>
<th>Type</th>
<th>Instructor</th>
<th>Days</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GISC 380-001</td>
<td>Fundamentals of Geographic Information Science 1</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>12:30 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>GISC 380-L01</td>
<td>Fundamentals of Geographic Information Science 2</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GISC 380-002</td>
<td>Fundamentals of Geographic Information Science 3</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>12:30 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>GISC 380-L02</td>
<td>Fundamentals of Geographic Information Science 4</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GISC 380-L03</td>
<td>Fundamentals of Geographic Information Science 5</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GISC 380-L04</td>
<td>Fundamentals of Geographic Information Science 6</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L05</td>
<td>Fundamentals of Geographic Information Science 7</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L06</td>
<td>Fundamentals of Geographic Information Science 8</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L07</td>
<td>Fundamentals of Geographic Information Science 9</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L08</td>
<td>Fundamentals of Geographic Information Science 10</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L09</td>
<td>Fundamentals of Geographic Information Science 11</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L10</td>
<td>Fundamentals of Geographic Information Science 12</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<tr>
<td>GISC 380-L11</td>
<td>Fundamentals of Geographic Information Science 13</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GISC 380-L12</td>
<td>Fundamentals of Geographic Information Science 14</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GISC 380-L13</td>
<td>Fundamentals of Geographic Information Science 15</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
</tr>
<tr>
<td>GISC 380-L14</td>
<td>Fundamentals of Geographic Information Science 16</td>
<td>3-0-0</td>
<td>Study the nature and representation of geographic information. Understand the principles and methods of geographic information science.</td>
<td>GISC 380, GEOG 370, GEOG 380, or EESC 380. Prerequisite: Third-year standing.</td>
<td></td>
<td>Lecture</td>
<td>In Person</td>
<td>Mon</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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</table>

**Course Descriptions:**
- **GEOG_O 314-001 Environmental Impact Assessment: Process, Reg W1**
  - Legal, administrative, and project management aspects of environmental impact assessment (EIA). EIAP regulations, processes, and systems. Assessment approaches and methods for cumulative effects, socio/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. Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. Equivalency: EESC314
  - Lecture: In Person Learning
  - Days: Wed Fri
  - Hours: 11:00 a.m. - 12:30 p.m.

- **GEOG_O 365-001 Parks and Outdoor Recreation W1**
  - Geographical expressions and processes of wine, viticulture, and viticulture. Appellation and terror frame investigation of the nature-human interface in wine production and consumption. Geographical approaches include cultural history, global and localized political economies, cultural adaptation to climate, and physical geography. Prerequisite: All of GEOG 108, GEOG 129, GEOG 128, and third-year standing.
  - Lecture: In Person Learning
  - Days: Wed Fri
  - Hours: 12:30 p.m. - 2:00 p.m.

- **GEOG_O 365-002 Wine Geographies W1**
  - Geographical expressions and processes of wine, viticulture, and viticulture. Appellation and terror frame investigation of the nature-human interface in wine production and consumption. Geographical approaches include cultural history, global and localized political economies, cultural adaptation to climate, and physical geography. Prerequisite: All of GEOG 108, GEOG 129, GEOG 128, and third-year standing.
  - Lecture: In Person Learning
  - Days: Wed Fri
  - Hours: 12:30 p.m. - 2:00 p.m.

- **GEOG_O 466-002 Soil Science W1**
  - 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 456. Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. Equivalency: EESC456
  - Lecture: In Person Learning
  - Days: Mon Wed
  - Hours: 3:30 p.m. - 5:00 p.m.

- **GEOG_O 466-L01 Soil Science W1**
  - 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 456. Prerequisite: Either (a) 6 credits of EESC or (b) 6 credits of GEOG. Third-year standing. Equivalency: EESC456
  - Laboratory: In Person Learning
  - Days: Thu
  - Hours: 8:00 a.m. - 11:00 a.m.
<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Schedule</th>
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</thead>
<tbody>
<tr>
<td>HES_O 100-001</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Lecture Mon Fri 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>HES_O 100-002</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Laboratory Mon 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>HES_O 100-003</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Lecture Mon Wed 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>HES_O 100-004</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Laboratory Mon 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>HES_O 100-005</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Lecture Wed 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>HES_O 100-006</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Laboratory Wed 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>HES_O 100-007</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Lecture Wed 8:00 a.m. - 10:00 a.m.</td>
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<tr>
<td>HES_O 100-008</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Laboratory Wed 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>HES_O 100-009</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3-0-0</td>
<td>Laboratory Fri 4:00 p.m. - 6:00 p.m.</td>
</tr>
</tbody>
</table>

**Course Descriptions:**

- **HES_O 100-001:**
  Examines how gender, sexuality and race intersect with representation in a variety of genres in popular culture. Considers the production, content, and reception of media texts. Ideological, institutional, social, and personal implications of these representations, and use of media to provoke change. Prerequisite: [3-0-0] Lecture In Person Learning Tue Fri 12:30 p.m. - 2:00 p.m.

- **HES_O 100-002:**
  The importance of exercise, 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 5:00 p.m. - 6:30 p.m.

- **HES_O 100-003:**
  The importance of exercise, 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 8:00 a.m. - 10:00 a.m.

- **HES_O 100-004:**
  The importance of exercise, 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 10:00 a.m. - 12:00 p.m.

- **HES_O 100-005:**
  The importance of exercise, 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 12:00 p.m. - 2:00 p.m.

- **HES_O 100-006:**
  The importance of exercise, 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 Wed 8:00 a.m. - 10:00 a.m.

- **HES_O 100-007:**
  The importance of exercise, 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 Wed 10:00 a.m. - 12:00 p.m.

- **HES_O 100-008:**
  The importance of exercise, 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 Wed 12:00 p.m. - 2:00 p.m.

- **HES_O 100-009:**
  The importance of exercise, 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 Fri 4:00 p.m. - 6:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Pre-Requisites</th>
<th>Description</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES 100-110</td>
<td>Foundations of Health and Exercise Sciences</td>
<td>3</td>
<td>3-0-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Introduce students to the basic structure and functional relationships of human anatomy in relation to movement. Specific structures include neural, muscular and skeletal systems.</td>
<td>5:00 p.m. - 7:00 p.m.</td>
</tr>
<tr>
<td>HES 101-001</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Mon Wed 6:30 p.m. - 8:00 p.m.</td>
</tr>
<tr>
<td>HES 101-005</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Thu 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>HES 101-06</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Thu 12:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>HES 101-07</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Fri 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>HES 101-08</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Fri 10:00 a.m. - 12:00 p.m.</td>
</tr>
<tr>
<td>HES 101-09</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Fri 12:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>HES 101-10</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Fri 2:00 p.m. - 4:00 p.m.</td>
</tr>
<tr>
<td>HES 101-11</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Tue 5:00 p.m. - 7:00 p.m.</td>
</tr>
<tr>
<td>HES 101-12</td>
<td>Human Physiology I</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Human physiology from the cellular to the systemic level including cellular function, metabolism, the neuromuscular system, and the cardiovascular systems. Credit will only be granted for one of HES 101, HMKN 190 or BIOL 131.</td>
<td>Lab: Tue 7:00 p.m. - 9:00 p.m.</td>
</tr>
<tr>
<td>HES 120-001</td>
<td>Introduction to Human Anatomy</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Introduction to Human Anatomy</td>
<td>Lab: Thu 3:30 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>HES 120-101</td>
<td>Introduction to Human Anatomy</td>
<td>3</td>
<td>3-2-0 Prerequisite: Registration limited to students in the B.H.E.S program.</td>
<td>Introduction to Human Anatomy</td>
<td>Lab: Wed 8:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Days</td>
<td>Time</td>
<td>Location</td>
<td>Credits</td>
</tr>
<tr>
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<tr>
<td>HES_120-L02</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L03</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L04</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L05</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L06</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L07</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L08</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L09</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>11:00 a.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L10</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L11</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_120-L12</td>
<td>Introduction to Human Anatomy</td>
<td>W1</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_130-001</td>
<td>Social Determinants of Health</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_200-002</td>
<td>Introduction to Nutrition</td>
<td>W5</td>
<td>2:00 p.m. - 3:30 p.m.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_201-001</td>
<td>Exercise Prescription</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_201-L01</td>
<td>Exercise Prescription</td>
<td>W1</td>
<td>2:00 p.m. - 3:30 p.m.</td>
<td>Lecture</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-001</td>
<td>Exercise Testing</td>
<td>W1</td>
<td>9:30 a.m. - 11:00 a.m.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<tr>
<td>HES_211-010</td>
<td>Exercise Testing</td>
<td>W1</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-L02</td>
<td>Exercise Testing</td>
<td>W1</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-L03</td>
<td>Exercise Testing</td>
<td>W1</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-L04</td>
<td>Exercise Testing</td>
<td>W1</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>HES_211-L05</td>
<td>Exercise Testing</td>
<td>W2</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>HES_211-L06</td>
<td>Exercise Testing</td>
<td>W2</td>
<td>10:00 a.m. - 12:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-L07</td>
<td>Exercise Testing</td>
<td>W2</td>
<td>2:00 p.m. - 4:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-L08</td>
<td>Exercise Testing</td>
<td>W2</td>
<td>8:00 a.m. - 10:00 a.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
<tr>
<td>HES_211-L09</td>
<td>Exercise Testing</td>
<td>W2</td>
<td>12:00 p.m. - 2:00 p.m.</td>
<td>Laboratory</td>
<td>In Person Learning</td>
</tr>
</tbody>
</table>
HES 320-L04
Functional Anatomy
The theory, practice and analysis of safe and effective health, fitness, physiological and lifestyle assessments, including the design, implementation and analysis of standard protocols. [3-2-0] Prerequisite: Either (a) HES 100 or (b) HMKN 100. and second-year standing in the B.H.E.S or B.H.K.

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

HES 211-L10
HES 120
Exercise Testing
Lab
In Person Learning Thu 10:00 a.m. - 12:00 p.m.

HES 211-L11
HES 120
Exercise Testing
Lab
In Person Learning Fri 12:00 p.m. - 2:00 p.m.

HES 211-L12
HES 120
Exercise Testing
Lab
In Person Learning Fri 2:00 p.m. - 4:00 p.m.

HES 240-001
HES 001
Health Research Methods
Lab
In Person Learning Thu 5:00 p.m. - 6:30 p.m.

HES 305-001
HES 001
Exercise Physiology II
Lab
In Person Learning Thu 3:30 p.m. - 5:00 p.m.

HES 305-L01
HES 001
Exercise Physiology II
Lab
In Person Learning Mon 8:00 a.m. - 10:00 a.m.

HES 305-L02
HES 001
Exercise Physiology II
Lab
In Person Learning Mon 10:00 a.m. - 12:00 p.m.

HES 305-L03
HES 001
Exercise Physiology II
Lab
In Person Learning Mon 2:00 p.m. - 4:00 p.m.

HES 305-L04
HES 001
Exercise Physiology II
Lab
In Person Learning Mon 4:00 p.m. - 6:00 p.m.

HES 305-L05
HES 001
Exercise Physiology II
Lab
In Person Learning Mon 11:00 a.m. - 1:00 p.m.

HES 305-L06
HES 001
Exercise Physiology II
Lab
In Person Learning Tue 1:00 p.m. - 3:00 p.m.

HES 305-L07
HES 001
Exercise Physiology II
Lab
In Person Learning Thu 11:00 a.m. - 1:00 p.m.

HES 305-L08
HES 001
Exercise Physiology II
Lab
In Person Learning Thu 1:00 p.m. - 3:00 p.m.

HES 305-L09
HES 001
Exercise Physiology II
Lab
In Person Learning Fri 11:00 a.m. - 1:00 p.m.

HES 305-L10
HES 001
Exercise Physiology II
Lab
In Person Learning Fri 1:00 p.m. - 3:00 p.m.

HES 320-001
HES 001
Functional Anatomy
Lab
In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

HES 320-002
HES 001
Functional Anatomy
Lab
In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

HES 320-L01
HES 001
Functional Anatomy
Lab
In Person Learning Mon 8:00 a.m. - 10:00 a.m.

HES 320-L02
HES 001
Functional Anatomy
Lab
In Person Learning Mon 10:00 a.m. - 12:00 p.m.

HES 320-L03
HES 001
Functional Anatomy
Lab
In Person Learning Mon 2:00 p.m. - 4:00 p.m.

HES 320-L04
HES 001
Functional Anatomy
Lab
In Person Learning Mon 4:00 p.m. - 6:00 p.m.
11:00 a.m. - 1:00 p.m. Arranged
5:00 p.m. - 7:00 p.m.

In Person Learning

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

In Person Learning

6:00 p.m. - 8:00 p.m.

In Person Learning

7:00 p.m. - 9:00 p.m.

In Person Learning

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

In Person Learning

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

In Person Learning

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

In Person Learning

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

In Person Learning

3:30 p.m. - 5:00 p.m.

In Person Learning

7:00 p.m. - 9:00 p.m.

In Person Learning

3:30 p.m. - 5:00 p.m.

In Person Learning

3:30 p.m. - 5:00 p.m.

In Person Learning

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

In Person Learning

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

In Person Learning

2:00 p.m. - 4:00 p.m.

In Person Learning

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

In Person Learning

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

In Person Learning

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

In Person Learning

3:30 p.m. - 5:00 p.m.

In Person Learning

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

In Person Learning

2:00 p.m. - 3:30 p.m.
HES 485-001

Advanced Circulatory Physiology

WS

Lecture

In Person Learning

Thu

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

Regulation and adaptation of the circulatory systems at rest, during exercise. Focus on adaptations and prescription implications following pathology. Formerly offered as HMKN 414. Credit will be granted for only one of HES 485 or HMKN 414. [0-0-3] Prerequisite: Either (a) HES 240 or (b) HMKN 206; and either (a) HES 305 or (b) HMKN 310; and either (a) HES 311 or (b) HMKN 315; and either (a) HES 340 or (b) HMKN 205.

HES 486-001

Muscle Fatigue

WS

Lecture

In Person Learning

Mon Wed

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

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 413. Credit will be granted for only one of HES 486 or HMKN 413. [3-0-0] Prerequisite: Either (a) HES 240 or (b) HMKN 206; and either (a) HES 305 or (b) HMKN 310; and either (a) HES 321 or (b) HMKN 315; and either (a) HES 340 or (b) HMKN 205.

HES 488-001

Cortical Control of Movement

WS

Lecture

In Person Learning

Mon Wed

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

Cortical 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 202 or (b) HMKN 202; and either (a) HES 240 or (b) HMKN 206; and either (a) HES 340 or (b) HMKN 205.

HINT 331-001

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

Current nutritional issues will also be discussed. Credit will only be granted for one of HES 200, HMKN 323 or HINT 307. [3-0-0] Prerequisite: Third-year standing

HINT 320-001

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 HINT 320 and NRSG 310 or HEAL 307. [3-0-0] Prerequisite: Third-year standing

HINT 305-001

Quantitative Analyses: Decision Making Using Data

WS-2

Lecture

In Person Learning

Mon

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

How to analyze and interpret statistical data commonly encountered in health and exercise science research. Content includes the choice of appropriate statistical analyses, cleaning data, correlation, linear regression, multiple and logistic regression, t-tests and analyses of variance.

HINT 112-001

Applied Research in Health

WS

Lecture

Online Learning

Mon

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

Basic statistical concepts and procedures with the goal of developing statistical literacy in health-care contexts. Includes how descriptive and inferential statistical methods are used to interpret nursing research. [3-0-0]

HINT 231-001

Pathophysiology for Health Sciences

WS

Lecture

Hybrid Learning

Mon

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

Basic pathophysiology associated with selected diseases and disorders that are commonly encountered by health practitioners in Canada. Pathophysiology, etiology, as well as some of the signs and symptoms, diagnostic tests and treatments currently associated with each disorder. Credit will be granted for either HINT 231 or HMKN 335. [3-0-0] Prerequisite: All of BIOL 131, BIOL 133.

HINT 231-002

Pathophysiology for Health Sciences

WS

Lecture

Hybrid Learning

Mon

3:30 p.m. - 5:00 p.m.

Basic pathophysiology associated with selected diseases and disorders that are commonly encountered by health practitioners in Canada. Pathophysiology, etiology, as well as some of the signs and symptoms, diagnostic tests and treatments currently associated with each disorder. Credit will be granted for either HINT 231 or HMKN 335. [3-0-0] Prerequisite: All of BIOL 131, BIOL 133.

HINT 320-001

Global Health

WS

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 HINT 320 and NRSG 310 or HEAL 307. [3-0-0] Prerequisite: Third-year standing

HINT 320-002

Global Health

WS

Lecture

In Person Learning

Thu

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

Introduction to the dietary requirements of nutrients and their related sources, metabolism, and functions. Nutrition in the context promoting health, preventing disease, and managing illness will be the focus, incorporating tools and knowledge about healthy food choices and dietary habits based on scientific evidence. Current nutritional issues will also be discussed. Credit will only be granted for one of HINT 311; or (b) HINT 331. [3-0-0] Prerequisite: All of BIOL 131, BIOL 133.

HINT 331-001

Nutrition for Health Sciences

WS

Lecture

In Person Learning

Tue

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

Introduction to the dietary requirements of nutrients and their related sources, metabolism, and functions. Nutrition in the context promoting health, preventing disease, and managing illness will be the focus, incorporating tools and knowledge about healthy food choices and dietary habits based on scientific evidence. Current nutritional issues will also be discussed. Credit will only be granted for one of HES 200, HMKN 323 or HINT 331. [3-0-0] Prerequisite: All of BIOL 131, BIOL 133.

HINT 331-002
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HINT 429-001</td>
<td>Advanced Global Health</td>
<td>001</td>
<td>Established in critical, decolonizing, and equity-enhancing theory, research, and practices, this course explores current consensus on what constitutes ethical engagement in global health, collective responses to inherently global issues. Credit will be granted for only one of HINT 429, HINT 429, or HINT 529. [3-0-0] Restricted to students with third-year standing. Lecture In Person Learning Wed - Fri</td>
</tr>
<tr>
<td>HINT 529-001</td>
<td>Advanced Global Health</td>
<td>001</td>
<td>Grounded in critical, decolonizing, and equity-enhancing theory, research, and practices, this course explores current consensus on what constitutes ethical engagement in global health, collective responses to inherently global issues. Credit will be granted for only one of HINT 429, HINT 429, or HINT 529. [3-0-0] Restricted to students in a Masters or PhD program. Lecture In Person Learning Wed - Fri</td>
</tr>
<tr>
<td>HIST 106-001</td>
<td>Global Environmental History</td>
<td>001</td>
<td>Historical impacts of humans on the non-human environment, and the ways in which the non-human environment has shaped human history. [3-0-0] Lecture In Person Learning Thu - Tue</td>
</tr>
<tr>
<td>HIST 110-001</td>
<td>Survey of the Ancient World</td>
<td>001</td>
<td>Overview and analysis of the internal and external factors that explain decolonization in sub-Saharan Africa in the twentieth century. Discussion will focus on the problems of nation-building in the aftermath of decolonization. [1.5-0-1.5] Prerequisite: 6 credits of HIST; or one of HIST 115, HIST 145 and third-year standing. Lecture In Person Learning Wed</td>
</tr>
<tr>
<td>HIST 112-101</td>
<td>Canadian Lands and Peoples</td>
<td>101</td>
<td>Study of the emergence of the contemporary world from the origins of World War I to the aftermath of World War II. [3-0-0] Lecture In Person Learning Wed - Fri</td>
</tr>
<tr>
<td>HIST 115-001</td>
<td>World History from First to Second World War</td>
<td>001</td>
<td>Grounded in critical, decolonizing, and equity-enhancing theory, research, and practices, this course explores current consensus on what constitutes ethical engagement in global health, collective responses to inherently global issues. Credit will be granted for only one of HINT 429, HINT 429, or HINT 529. [3-0-0] Restricted to students with third-year standing. Lecture In Person Learning Mon - Wed</td>
</tr>
<tr>
<td>HIST 116-001</td>
<td>Early Modern Europe 1450-1789</td>
<td>001</td>
<td>Study of the major events, systems of thought, and human accomplishments that have contributed to European history. Study includes events dating from approximately 1450, when developments in government, science, industry, art, and philosophy began to accelerate significantly. [3-0-0] Lecture In Person Learning Tue</td>
</tr>
<tr>
<td>HIST 118-001</td>
<td>History of Science, Medicine, and Technology 6th-WS</td>
<td>001</td>
<td>History of science, medicine, and technology from antiquity to the eighteenth century. Credit will be granted for only one of HIST 118 or HIST 215. [3-0-0] Lecture Online Learning Wed</td>
</tr>
<tr>
<td>HIST 145-001</td>
<td>Contemporary World History</td>
<td>001</td>
<td>The people, places, and events central to the development of Canada from indigenous settlement to the twenty-first century. [3-0-0] Lecture In Person Learning Thu - Tue</td>
</tr>
<tr>
<td>HIST 220-001</td>
<td>History of the Islamic World</td>
<td>001</td>
<td>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</td>
</tr>
<tr>
<td>HIST 300-001</td>
<td>History of Indigenous Peoples of Canada to 1874</td>
<td>001</td>
<td>The Indigenous peoples (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 frontiers, disease, for 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 Thu</td>
</tr>
<tr>
<td>HIST 303-001</td>
<td>The Hellenistic World from the Mediterranean to the West</td>
<td>001</td>
<td>The main cultural, political, social, and economic developments in the Hellenistic World from Alexander the Great to the rise of Rome. Credit will be granted for only one of HIST 305 or HIST 3493. [3-0-0] Prerequisite: HIST 116. Lecture In Person Learning Wed - Fri</td>
</tr>
<tr>
<td>HIST 317-001</td>
<td>History of Southern Africa</td>
<td>001</td>
<td>Pre-colonial, colonial, and contemporary history emphasizing South Africa. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 115, HIST 145 and third-year standing. Lecture In Person Learning Thu</td>
</tr>
<tr>
<td>HIST 337-001</td>
<td>American Colonial History, 1607-1763</td>
<td>001</td>
<td>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</td>
</tr>
<tr>
<td>HIST 351-001</td>
<td>History of Gender and Sexuality in Latin America</td>
<td>001</td>
<td>The rise of scientific theories of racial and sexual difference and their role in the creation of the early modern Atlantic world (1600-1800), including its economy, culture, and socio-political order. [3-0-0] Prerequisite: 6 credits of HIST; or one of HIST 118, HIST 218 and third-year standing. Lecture In Person Learning Mon</td>
</tr>
<tr>
<td>HIST 373-001</td>
<td>History of Gender, Race, and Science in the Atlantic World</td>
<td>001</td>
<td>Socially 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 245, or third-year standing. Lecture In Person Learning Mon</td>
</tr>
<tr>
<td>HIST 381-A_001</td>
<td>Special Topics in Economic History</td>
<td>001</td>
<td>Students should consult the department for the particular topics offered in a given year. [3-0-0] Prerequisite: 3 credits of HIST and third-year standing. Lecture In Person Learning Mon - Wed</td>
</tr>
<tr>
<td>HIST 395-001</td>
<td>Environmental History of North America</td>
<td>001</td>
<td>Themes and methods of environmental history, focusing primarily on North America from the sixteenth to the twenty-first centuries. [3-0-0] Prerequisite: 3 credits of HIST and third-year standing. Lecture Online Learning Mon</td>
</tr>
<tr>
<td>HIST 420-001</td>
<td>Women in Early Modern Europe</td>
<td>001</td>
<td>Examination of the experiences of women in Western Europe from 1500-1750. [3-0-0] Prerequisite: 6 credits of HIST; or HIST 116 and third-year standing. Lecture In Person Learning Thu</td>
</tr>
<tr>
<td>HIST 468-001</td>
<td>International Relations of the Great Powers of the 19th Century</td>
<td>001</td>
<td>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 116, HIST 126, HIST 145 and third-year standing. Lecture In Person Learning Tue - Thu</td>
</tr>
<tr>
<td>HIST 473-101</td>
<td>History, Theory, and Method</td>
<td>101</td>
<td>Explores 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. [3-0-0] Prerequisite: 6 credits of HIST or third-year standing. Seminar In Person Learning Tue</td>
</tr>
<tr>
<td>HIST 494-001</td>
<td>Decolonization and Africa</td>
<td>001</td>
<td>Overview and analysis of the internal and external factors that explain decolonization in sub-Saharan Africa in the twentieth century. Discussion will focus on the problems of nation-building in the aftermath of decolonization. [1.5-0-1.5] Prerequisite: 6 credits of HIST; or one of HIST 115, HIST 145 and third-year standing. Lecture In Person Learning Mon</td>
</tr>
<tr>
<td>IGS 502-A_001</td>
<td>Seminar in Digital Arts and Humanities</td>
<td>001</td>
<td>Seminar In Person Learning Wed</td>
</tr>
<tr>
<td>IGS 515-A_001</td>
<td>Advanced Qualitative Methods</td>
<td>001</td>
<td>Seminar In Person Learning Thu</td>
</tr>
<tr>
<td>IGS 524-A_001</td>
<td>Proseminar in Interdisciplinary Studies</td>
<td>001</td>
<td>Seminar In Person Learning Wed (Alternate weeks)</td>
</tr>
</tbody>
</table>
IGS_O 582-001 IGS_O 001 Indigenous Knowledges Theme Seminar W1 Theoretical background on Indigenous Knowledge and Indigenousist research. Focuses on a range of strategies and principles for research on or through Indigenous languages and culture. Restricted to students in the Indigenous Knowledges Theme. Seminar In Person Learning Tue 2:00 p.m. - 5:00 p.m.

IGS_O 584-001 IGS_O 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_O 586A_A_001 IGS_O A_001 Community Engagement, Social Change, and Eop W1 Will provide the necessary theoretical background on Community-Based Participatory Research (CBPR). Students will learn about a range of strategies and principles of CBPR: advantages and limitations of this approach; skills necessary for participating effectively in CBPR projects. Seminar In Person Learning Wed 2:00 p.m. - 5:00 p.m.

IGS_O 589-101 IGS_O 001 Global Politics, Culture and Theory W1 Examination of conceptual approaches to Global Studies. Seminar In Person Learning Mon 2:00 p.m. - 5:00 p.m.

IGS_O 590-101 IGS_O 001 Power and Ideas W1 Frameworks of governance systems and public policy. [0-0-3] Seminar In Person Learning Wed 11:00 a.m. - 2:00 p.m.

IGS_O 592-101 IGS_O 001 History, Theory, and Method W1 Explore selected problems and issues in the theory and practice of historical work. Credit will be granted for only one of IGS 592 or HIST 492. Equivalency: HIST 492 Seminar In Person Learning Tue 11:00 a.m. - 2:00 p.m.

IGS_O 599_B_001 IGS_O B_001 Master's Thesis W1 Pass/Fail. Thesis In Person Learning Arranged Arranged

IGS_O 599_C_001 IGS_O C_001 Master's Thesis W2 Pass/Fail. Thesis In Person Learning Arranged Arranged


IMTC_O 505-001 IMTC_O 001 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.

IMTC_O 506-001 IMTC_O 001 User-Centered Immersive Design 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 Thu 2:00 p.m. - 5:00 p.m.

INDG_O 100-001 INDG_O 001 Introduction to Decolonization: Indigenous Stud W5 Provides students with an overview of the discipline of Indigenous studies including the history, cultures, and experiences of Indigenous peoples. [2-0-1] Lecture Online Learning Mon Wed 11:00 a.m. - 12:00 p.m.

INDG_O 100-002 INDG_O 002 Introduction to Decolonization: Indigenous Stud W5 Provides students with an overview of the discipline of Indigenous studies including the history, cultures, and experiences of Indigenous peoples. [2-0-1] Lecture In Person Learning Wed 3:30 p.m. - 5:00 p.m.

INDG_O 100-001 INDG_O 001 Introduction to Decolonization: Indigenous Stud W5 Provides students with an overview of the discipline of Indigenous studies including the history, cultures, and experiences of Indigenous peoples. [2-0-1] Discussion Online Learning Wed 12:00 p.m. - 1:00 p.m.

INDG_O 100-002 INDG_O 002 Introduction to Decolonization: Indigenous Stud W5 Provides students with an overview of the discipline of Indigenous studies including the history, cultures, and experiences of Indigenous peoples. [2-0-1] Discussion Online Learning Fri 3:30 p.m. - 5:00 p.m.

INDG_O 204-001 INDG_O 001 Mtis Peoples and Perspectives W1 Complexities of contemporary Indigenous identities in Canada including how Indigenous has been constructed through particular discourses and legal categorization. Culture, politics, place, and the notion of relativity are central in examining Indigenous perspectives on identity. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

INDG_O 205-001 INDG_O 001 Indigenous Identities W1 Overview of the contemporary socio-economic, political, cultural, and environmental characteristics of the Indigenous peoples of the Americas. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Lecture In Person Learning Thu Tue 12:30 p.m. - 2:00 p.m.

INDG_O 210-001 INDG_O 001 Indigenous Peoples of the Americas W1 Overview of the contemporary socio-economic, political, cultural, and environmental characteristics of the Indigenous peoples of the Americas. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Lecture Online Learning Mon Wed 11:00 a.m. - 12:30 p.m.

INDG_O 301-001 INDG_O 001 Examining an Indigenous Methodology: En'owkin W1 Understanding an Indigenous strategy of commodity discourse as a methodology for inquiry. A technique of examination 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. Lecture In Person Learning Thu Tue 11:00 a.m. - 12:30 p.m.

INDG_O 302-001 INDG_O 001 Indigenous Governance W1 Critical examines various traditional Indigenous governance models and the Indigenous response to European attempts to establish political control. Issues such as land ownership, sovereignty, justice, treaty making, and the roles of women in Indigenous governance will be explored. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Thu Tue 8:00 a.m. - 9:30 a.m.

INDG_O 303-001 INDG_O 001 Indigenous Studies Theory and Methodology W2 Conceptualizations from an Indigenous perspective are central to this course. Includes an analysis of current conceptual paradigms within the social sciences, humanities, and performing arts, with a consideration of their appropriateness and applicability for Indigenous studies. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Mon Wed 3:30 p.m. - 5:00 p.m.

INDG_O 306-001 INDG_O 001 Indigenous Justice W5 Decolonial Indigenous concepts, principles and historical consciousness of justice and anti-violence praxis in community- and land-based contexts. Locating agency with Indigenous peoples and Indigenous justice practices, the course puts primary on ways that Indigenous peoples have engaged in and continue to enact justice. Refertilization of Indigenous knowledge informs ethical and moral issues addressed in relation to healing, and collective transformation. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Thu Tue 5:00 p.m. - 6:30 p.m.

INDG_O 307-001 INDG_O 001 Traditional Ecological Knowledge W5 Shows how human life depends on complex systems of cultural knowledge about the natural world. Indigenous People’s biological classification and environmental systems, ethnomedicine, and Indigenous explanatory models of environmental systems and the application of this knowledge in practice. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Tue 2:00 p.m. - 5:00 p.m.

INDG_O 309-001 INDG_O 001 Indigenous Perspectives on Health W5 Introduction to current thinking about Indigenous Peoples’ health, and especially Indigenous Peoples’ perspectives on health and contemporary health systems. Includes a critical examination of conceptual of health within the context of ongoing processes of colonization. [3-0-0] Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Wed Fri 12:30 p.m. - 2:00 p.m.

INDG_O 401-102 INDG_O 102 Research Applications W5 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. [0-0-3] Prerequisite: One of INDG 303, INDG 305, INDG 304. Lecture Online Learning Arranged Arranged
INDG_404-001  INDG_O 001 Indigenous Peoples United Nations and Global II WS
Focuses on Indigenous Peoples’ common experience of colonialism, non-recognition, conflicts with nation states, and decolonization. Also covers Indigenous Peoples’ international engagement and lobbying in various UN forums, including the UN Declaration on the Rights of Indigenous Peoples. (3-0-0) Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

INDG_405-001  INDG_O 001 Indigenous Education: History and Revitalization WS
Indian perspectives on language and cultural shifts through the critical lenses of Indigenous knowledge and insider views on historical education policies, language and knowledge loss and consequences, revitalization and recovery, and transformational community development. Taught in English. (3-0-0) Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

INDG_420-001  INDG_O 001 Indigenous Perspectives on Food, Place, Identity WS
Overview of the contemporary geotropical, agricultural, and environmental connections between identity, food, place, and cultural and biological diversity from the perspective of Indigenous peoples. North/south flows of genetic resources and key international and regional conventions and agreements are highlighted. (3-0-0) Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

INDG_450-001  INDG_O 001 Indigenous Women, Activisms, Feminisms WS
Examines Indigenous women’s feminist activism and theory in historical and contemporary contexts. Emphasizes resistance against colonization, dispossession, violence and ecological destruction as well as development of strategies and models based on Indigenous concepts and consciousness. Emphasizes relationship building and empowerment between Indigenous women beyond borders. (0-0-3) Prerequisite: One of INDG 100, INDG 102. Third-year standing. Lecture In Person Learning Mon Thu 2:00 p.m. - 3:30 p.m.

INDG_499-101  INDG_O 101 Indigenous Studies Capstone Project WS
Work experience in decolonizing and/or indigenizing efforts. Restricted to students in the Indigenous language fluency degrees or Indigenous Studies major program. (0-6-2*) Lecture Online Learning Arranged Arranged

INLG_281-001  INLG_O 001 Sounds of Endangered Languages: Conservation WS
Development of skills in the perception and transcription of speech sounds in endangered languages, focusing on the diversity within B.C. indigenous languages. Capacity-building techniques for digital recording, editing, analysis, and archiving; guided by community-based ethical protocols and conservation/revitalization goals.

INLG_480-001  INLG_O 001 Endangered Language Documentation and Revival WS
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 INLG 480 and ANTH 473. Prerequisite: INLG 282. Lecture Multi-access Learning Thu 5:00 p.m. - 8:00 p.m.

JPST_100-001  JPST_O 001 Beginning Japanese Language I WS
Introduction to spoken and written modern Japanese, with emphasis on both form (grammar and syntax) and functions. Students who have completed Japanese 12, native and heritage speakers cannot receive credit for JPST 100. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

JPST_100-002  JPST_O 001 Beginning Japanese Language I WS
Introduction to spoken and written modern Japanese, with emphasis on both form (grammar and syntax) and functions. Students who have completed Japanese 12, native and heritage speakers cannot receive credit for JPST 100. Lecture In Person Learning Tue Thu 9:30 a.m. - 11:00 a.m.

JPST_100-011  JPST_O 101 Beginning Japanese Language I WS
Introduction to spoken and written modern Japanese, with emphasis on both form (grammar and syntax) and functions. Students who have completed Japanese 12, native and heritage speakers cannot receive credit for JPST 100. Laboratory Online Learning Mon 1:00 p.m. - 2:00 p.m.

JPST_370-001  JPST_O 001 Japanese Food Culture WS
Social, historical, political, and environmental dimensions of the development of traditional and contemporary Japanese food culture. Taught in English. Credit will not be granted for both JPST 370 and JPST 395A. Prerequisite: Third-year standing. Lecture In Person Learning Tue Thu 2:00 p.m. - 3:30 p.m.

KORN_100-001  KORN_O 001 Basic Korean I WS
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 equivalent of CEFR Level A1 in the language. Lecture In Person Learning Mon Wed Fri 12:00 p.m. - 1:00 p.m.

LATN_100-001  LATN_O 001 Intensive Introduction to Latin WS-2
Fundamentals of Latin grammar and syntax. Designed for students who need to acquire knowledge of basic Latin in one year for background in their own discipline. Lecture In Person Learning Mon Wed 2:00 p.m. - 3:30 p.m.

LLED_497-001  LLED_O 001 Practicum in Additional Language Teaching and WS
Professional development as an additional language educator through a supervised 20-hour practicum including guided lesson observations (10 hours) and focused teaching practice (10 hours). Concurrent seminars develop skills in lesson planning, instructional strategies, reflective practice, classroom leadership, interculturality, and community building. Restricted to students with at least third-year standing. Pass/Fail. (3-0-0) Lecture In Person Learning Thu (Alternate weeks) 6:30 p.m. - 8:30 p.m.

MANF_O 330-001  MANF_O 001 Manufacturing Engineering Project I WS-2
Project-based design and optimization of manufacturing processes (Casting, bulk deformation, sheet metal, polymer), metrology, measuring cutting forces in machining, CNC machining optimization. [1-4-0, 1-4-0] Prerequisite: MANF 277. Lecture In Person Learning Mon 11:00 a.m. - 12:00 p.m.

Project-based design and optimization of manufacturing processes (Casting, bulk deformation, sheet metal, polymer), metrology, measuring cutting forces in machining, CNC machining optimization. [1-4-0, 1-4-0] Prerequisite: MANF 277. Laboratory In Person Learning Fri 8:00 a.m. - 12:00 p.m.

MANF_O 370-101  MANF_O 101 Production Systems Management WS
Functional area of production and operations management. Decision-making, capacity planning, aggregate planning, inventory management, distribution planning, materials requirements planning and quality control. (3-0-0) Prerequisite: MANF 270. Lecture In Person Learning Tue Thu 3:30 p.m. - 5:00 p.m.

MANF_O 377-001  MANF_O 001 Manufacturing Processes WS
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. Lecture In Person Learning Wed Fri 4:00 p.m. - 5:00 p.m.

MANF_O 377-11A  MANF_O 11A Manufacturing Processes WS
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. Laboratory In Person Learning Wed (Alternate weeks) 11:00 a.m. - 2:00 p.m.

MANF_O 377-11B  MANF_O 11B Manufacturing Processes WS
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. Laboratory In Person Learning Wed (Alternate weeks) 11:00 a.m. - 2:00 p.m.

MANF_O 377-11C  MANF_O 11C Manufacturing Processes WS
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. Laboratory In Person Learning Mon (Alternate weeks) 8:00 a.m. - 11:00 a.m.

MANF_O 377-11D  MANF_O 11D Manufacturing Processes WS
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. Laboratory In Person Learning Mon (Alternate weeks) 8:00 a.m. - 11:00 a.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANF 377-L1E</td>
<td>MANF 460-001 Industrial Automation</td>
<td>Principle components of manufacturing automation systems, industrial measurement needs, robotic programming, programmable logic control (PLC) systems and development of PLC programs.</td>
<td>3-2-0</td>
<td>APSC 246.</td>
</tr>
<tr>
<td>MANF 377-L1F</td>
<td>MANF 455-L1A Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1G</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1H</td>
<td>MANF 455-L1B Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1I</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1J</td>
<td>MANF 455-L1C Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1K</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1L</td>
<td>MANF 455-L1D Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1M</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1N</td>
<td>MANF 455-L1E Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1O</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1P</td>
<td>MANF 455-L1F Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1Q</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1R</td>
<td>MANF 455-L1G Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
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<tr>
<td>MANF 377-L1S</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1T</td>
<td>MANF 455-L1H Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1U</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1V</td>
<td>MANF 455-L1I Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1W</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1X</td>
<td>MANF 455-L1J Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1Y</td>
<td>MANF 455-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 377-L1Z</td>
<td>MANF 455-L1K Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 386-001</td>
<td>MANF 401 industriol Automation</td>
<td>Principle components of manufacturing automation systems, industrial measurement needs, robotic programming, programmable logic control (PLC) systems and development of PLC programs.</td>
<td>3-2-0</td>
<td>APSC 246.</td>
</tr>
<tr>
<td>MANF 386-01</td>
<td>MANF 401-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 386-02</td>
<td>MANF 401-001 Manufacturing Processes</td>
<td>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.</td>
<td>2-3-1</td>
<td>Prerequisite: All of APSC 259, APSC 260.</td>
</tr>
<tr>
<td>MANF 416-001</td>
<td>MANF 401-001 CAD/CAM/CAE</td>
<td>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.</td>
<td>3-2-0</td>
<td>MANF 377.</td>
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<tr>
<td>MANF 416-01</td>
<td>MANF 401-001 CAD/CAM/CAE</td>
<td>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.</td>
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<tr>
<td>MANF 416-02</td>
<td>MANF 401-001 CAD/CAM/CAE</td>
<td>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.</td>
<td>3-2-0</td>
<td>MANF 377.</td>
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</table>
MANF_O 470-001 MANF_O 001 Production Systems Management II W1 Modelling and analysis of manufacturing systems and assembly lines, operational contingencies, multiple-product manufacturing systems, scheduling theory and inventory systems. [3-0-0] Prerequisite: MANF 370. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

MANF_O 516-001 MANF_O 001 Advanced Manufacturing W1 Product manufacturing, powder metallurgy, Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM), Computer Numeric Control (CNC), process planning, micro and nano manufacturing, optical and electron measurement techniques. Lecture In Person Learning Mon Thu 8:00 a.m. - 9:30 a.m.

MANF_O 516-101 MANF_O LO1 Advanced Manufacturing W1 Product manufacturing, powder metallurgy, Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM), Computer Numeric Control (CNC), 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_O 516-102 MANF_O L02 Advanced Manufacturing W1 Product manufacturing, powder metallurgy, Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM), Computer Numeric Control (CNC), 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_O 555-001 MANF_O 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 455. Lecture In Person Learning Mon 12:00 p.m. - 2:00 p.m.

MANF_O 555-11A MANF_O 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 455. Laboratory In Person Learning Fri 2:00 p.m. - 4:00 p.m.

MANF_O 560-001 MANF_O 001 Supply Chain Tactics and Strategies W1 Key concepts and techniques to analyze, manage and improve supply chain processes for different industries and markets; focus on the assessment of supply chain performance and identify key factors to be considered when designing a distribution network; understand the role of cycle inventory and determine the optimal lot size in a supply chain. Credit will be granted for only one of MANF 560 or MANF 460. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

MATH_O 100-001 MATH_O 001 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Mon Thu 9:30 a.m. - 11:00 a.m.

MATH_O 100-002 MATH_O 002 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Wed Fri 2:00 p.m. - 3:30 p.m.

MATH_O 100-003 MATH_O 003 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

MATH_O 100-004 MATH_O 004 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Mon Wed 8:00 a.m. - 9:30 a.m.

MATH_O 100-005 MATH_O 005 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Tue Thu 8:00 a.m. - 9:30 a.m.

MATH_O 100-006 MATH_O 006 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

MATH_O 100-007 MATH_O 007 Differential Calculus with Applications to Physuc W1 Derivatives of elementary functions, limits. Covers applications and modelling: graphing and optimization. Credit will be granted for only one of MATH 101 or MATH 116. [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: MATH116. Lecture In Person Learning Wed Fri 9:30 a.m. - 11:00 a.m.

MATH_O 101-001 MATH_O 001 Integral Calculus with Applications to Physical Sc W1 Definite integral, integration techniques, applications, modelling, 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 Mon Thu 9:30 a.m. - 11:00 a.m.

MATH_O 116-001 MATH_O 001 Calculus for Management and Economics W1 The derivative; limits; rate of change; derivatives of algebraic, logarithmic, trigonometric and exponential functions; applications to marginal analysis; elasticity of demand; optimization and curve-sketching, Newtons Method and Taylor polynomials. Credit will be granted for only one of MATH 116 or MATH 100. [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: MATH100. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

MATH_O 125-001 MATH_O 001 Pre-Calculus W1 Prepares students 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.Sc. or B.Sust. degree. Credit will be granted for only one of MATH 125 or MATH 126. Students with credit for MATH 100 or 116 may not take MATH 125 for further credit. [3-0-1] Prerequisite: One of Principles of Mathematics 11, Pre-Calculus 11, Foundations of Mathematics 12. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

MATH_O 200-001 MATH_O 001 Calculus III W1 Analytic geometry in two and three dimensions, partial and directional derivatives, chain rule, maxima and minima, second derivative test, Lagrange multipliers, multiple integrals with applications. [3-1-0] Prerequisite: Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103. Lecture In Person Learning Mon Wed 5:00 p.m. - 6:30 p.m.

MATH_O 200-002 MATH_O 002 Calculus III W1 Analytic geometry in two and three dimensions, partial and directional derivatives, chain rule, maxima and minima, second derivative test, Lagrange multipliers, multiple integrals with applications. [3-1-0] Prerequisite: Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103. Lecture In Person Learning Tue Thu 6:30 p.m. - 8:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Schedule</th>
<th>Location</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>MATH 200-01</td>
<td>Calculus III</td>
<td>W1</td>
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<td>In Person Learning</td>
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<tr>
<td>MATH 200-02</td>
<td>Calculus III</td>
<td>W5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>MATH 200-03</td>
<td>Calculus III</td>
<td>W1</td>
<td>Laboratory</td>
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<tr>
<td>MATH 200-04</td>
<td>Calculus III</td>
<td>W5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>MATH 200-05</td>
<td>Calculus III</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>MATH 200-06</td>
<td>Calculus III</td>
<td>W5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<td>MATH 200-07</td>
<td>Calculus III</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<td>MATH 200-08</td>
<td>Calculus III</td>
<td>W5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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<tr>
<td>MATH 200-09</td>
<td>Calculus III</td>
<td>W1</td>
<td>Laboratory</td>
<td>In Person Learning</td>
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</tr>
</tbody>
</table>

**Analytic geometry in two and three dimensions, partial and directional derivatives, chain rule, maxima and minima, second derivative test, Lagrange multipliers, multiple integrals with applications.**

- **Prerequisite:** Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103.

**Congruences and groups, introduction to rings and fields, and topics chosen from: lattices, Boolean algebra problems, eigenfunction expansions, and Sturm-Liouville problems.**

- **Prerequisite:** All of MATH 200, 225.

**Sets and functions; induction; cardinality: properties of the real numbers; sequences, series, and limits. Logic, structure, style, and clarity of proofs emphasized throughout.**

- **Prerequisite:** Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103.

**Analytic geometry in two and three dimensions, partial and directional derivatives, chain rule, maxima and minima, second derivative test, Lagrange multipliers, multiple integrals with applications.**

- **Prerequisite:** Either (a) MATH 101 or (b) a score of 65% or higher in MATH 103.
MATH_O 339-001  MATH_O 001 Introduction to Dynamical Systems  W1
Non-linear systems and iteration of functions; flows, phase portraits, periodic orbits, chaotic attractors, fractals, and invariant sets. [3-0-0] Prerequisite: All of MATH 200, MATH 225.
Lecture  In Person Learning  Mon Wed  5:00 p.m. - 6:30 p.m.

MATH_O 408-001  MATH_O 001 Differential Geometry  W1
Local theory of curves, Frenet-Serret apparatus, fundamentals of the Gaussian theory of surface, normal curvature, geodesics, Gaussian and mean curvatures, Theorema egregium, an introduction to Riemannian geometry, Gauss-Bonnet Theorem, and applications. [3-0-0] Prerequisite: All of MATH 200, MATH 222, and 9 credits of 300-level MATH.
Lecture  In Person Learning  Mon Wed  11:00 a.m. - 12:30 p.m.

MATH_O 409-001  MATH_O 001 Mathematics of Financial Derivatives  W1
Pricing theory of financial derivative securities. Options and markets, present and future values, price movement modeled by Brownian motion, Ito’s formula, parabolic partial differential equations, Black-Scholes model. Prices of European options as solutions of initial/boundary value problems for heat equations, American options, free boundary problems. [3-0-0] Prerequisite: All of MATH 221, MATH 329 and one of MATH 302, STAT 303.
Lecture  In Person Learning  Mon Wed  2:00 p.m. - 3:30 p.m.

MATH_O 448_A_001  MATH_O A A_001 Directed Studies in Mathematics  W1
Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Students will be expected to complete a project and make an oral presentation. Prerequisite: 15 credits of 300- or 400-level MATH and STAT courses and permission of the department head and faculty supervisor. Independent Study  In Person Learning  Arranged  Arranged

MATH_O 448_B_001  MATH_O B B_001 Directed Studies in Mathematics  W1-2
Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Students will be expected to complete a project and make an oral presentation. Prerequisite: 15 credits of 300- or 400-level MATH and STAT courses and permission of the department head and faculty supervisor. Independent Study  In Person Learning  Arranged  Arranged

MATH_O 448_C_001  MATH_O C C_001 Directed Studies in Mathematics  W1
Investigation of a specific topic as agreed upon by the student and the faculty supervisor. Students will be expected to complete a project and make oral presentation. Prerequisite: 15 credits of 300- or 400-level MATH and STAT courses and permission of the department head and faculty supervisor. Independent Study  In Person Learning  Arranged  Arranged

MATH_O 461-101  MATH_O 101 Continuous Optimization  W1
Convex analysis, non-smooth optimization, Karush-Kuhn-Tucker theorem, iterative methods. [3-0-0] Prerequisite: MATH 327.
Lecture  In Person Learning  Wed Fri  11:00 a.m. - 12:30 p.m.

MATH_O 563-101  MATH_O 101 Convex Optimization and Non-smooth Analysis  W1
Separation and support properties of convex sets; polar, tangent, and normal cones; Fenchel conjugation; subgradient calculus for convex functions; Fenchel duality for convex optimization problems; algorithms for non-differentiable optimization; non-smooth analysis and optimisation for non-convex objects. [3-0-0] Lecture  In Person Learning  Wed Fri  11:00 a.m. - 12:30 p.m.

MATH_O 590-D_501  MATH_O D D_501 Graduate Seminar  W1
Presentation and discussion of recent results in the mathematical, statistical, or related literature. Credit may be obtained more than once. Pass/Fail. [0-0-0] The credit value for this course will be determined in consultation with the student prior to the registration Seminar  In Person Learning  Thu  8:00 a.m. - 11:00 a.m.

MGCO_O 409-001  MGCO_O 001 Ph.D. Thesis  W1
Pass/Fail. Thesis  In Person Learning  Arranged  Arranged

MGCO_O 499-001  MGCO_O 001 Ph.D. Thesis  W1-2
Pass/Fail. Thesis  In Person Learning  Arranged  Arranged

MDST_O 110-001  MDST_O 001 Introduction to Computational Art and Design I  W1
Code as material; design principles; mathematics for space and time; computer programming languages for computational art and design. Studio  In Person Learning  Tue  8:00 a.m. - 11:00 a.m.

MDST_O 210-001  MDST_O 001 Creative Coding  W1
Theory and practice of encoding creative process and designing software for visualization, simulation, sonification, and generative systems. Techniques from artificial intelligence, machine learning, cognitive science, graphics and sound generation. Credit will be granted for only one of MDST 210 and MDST 320. Prerequisite: Either (a) VISA 108 and one of COSC 222, COSC 223; or (b) MDST 120.
Lecture  In Person Learning  Wed Fri  12:00 p.m. - 2:00 p.m.

MDST_O 311-001  MDST_O 001 Computational Poetics  W2
The impact of computer technology and composition strategies on systems of representations and the question of meaning in the interdisciplinary field of computational art and design. Concepts are developed and applied through the creation of a computational multimedia model and the consequent artistic experience. Prerequisite: MDST 210.
Studio  In Person Learning  Thu  11:00 a.m. - 2:00 p.m.

MDST_O 490-001  MDST_O 001 Seminar Series  W1
Presents topics of relevance to media studies. Pass/Fail. Prerequisite: Fourth-year standing Corequisite: MDST 490.
Lecture  Online Learning  Tue  11:00 a.m. - 3:00 p.m.

MDST_O 499-001  MDST_O 001 Capstone Media Project  W1-2
Capstone project in teams. Prerequisite: 3 credits of 3rd-year MDST and 3 credits of 3rd-year DIHU. Corequisite: MDST 490.
Studio  In Person Learning  Mon  10:00 a.m. - 2:00 p.m.

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: 15 credits of 300-level MATH.
MISCGO_O 401-101  MISCGO_O 01 Co-op Education Work Experience I  W1
Experiential  In Person Learning  Arranged  Arranged

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 who accepted to the Management Co-operative Education Program. Prerequisite: MISCGO 401.
MISCGO_O 402-101  MISCGO_O 01 Co-op Education Work Experience II  W1
Experiential  In Person Learning  Arranged  Arranged

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: MISCGO 401.
MISCGO_O 403-101  MISCGO_O 01 Co-op Education Work Experience III  W2
Experiential  In Person Learning  Arranged  Arranged

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: MISCGO 401.
MISCGO_O 404-101  MISCGO_O 01 Co-op Education Work Experience IV  W3
Experiential  In Person Learning  Arranged  Arranged
MGMT 101-W01
Introduction to Business
In Person Learning
10:00 a.m. - 11:00 a.m.

L06
Co-op Education Work Experience VI
11:00 a.m. - 12:00 p.m.

MGMT 100-L06
Introduction to Management Thought and Social Responsibility
Laboratory
In Person Learning
6:30 p.m. - 9:30 p.m.

L05
101
Introduction to Business
In Person Learning
3:00 p.m. - 4:00 p.m.

L03
Laboratory
In Person Learning
12:00 p.m. - 2:00 p.m.

L02
MGMT 100-L02
Introduction to Business
In Person Learning
2:00 p.m. - 3:00 p.m.

L01
Laboratory
In Person Learning
5:00 p.m. - 6:00 p.m.

W1
MGMT 100-L01
Introduction to Business
In Person Learning
4:00 p.m. - 5:00 p.m.

W1
Lecture
In Person Learning
2:00 p.m. - 3:00 p.m.

W1
Workshop
In Person Learning
5:00 p.m. - 6:00 p.m.

W1
MGMT 100-L03
Introduction to Business
In Person Learning
2:00 p.m. - 3:00 p.m.

W1
Laboratory
In Person Learning
4:00 p.m. - 5:00 p.m.

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<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 230-L01</td>
<td>Introduction to Organizational Behaviour</td>
<td>3-0-0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MGMT 290-101</td>
<td>Industry Analysis Project</td>
<td>3-0-0</td>
<td>Applications of management concepts to the study of the nature and dynamics of an industry.</td>
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</tr>
<tr>
<td>MGMT 290-102</td>
<td>Industry Analysis Project</td>
<td>3-0-0</td>
<td>Applications of management concepts to the study of the nature and dynamics of an industry.</td>
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<tr>
<td>MGMT 210-103</td>
<td>Industry Analysis Project</td>
<td>3-0-0</td>
<td>Applications of management concepts to the study of the nature and dynamics of an industry.</td>
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</tr>
<tr>
<td>MGMT 310-101</td>
<td>Introduction to Finance</td>
<td>3-0-0</td>
<td>Framework development for analyzing a firm's investment and financing decisions and a foundation in the basic concepts underlying modern corporate finance.</td>
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</tr>
<tr>
<td>MGMT 310-W01</td>
<td>Introduction to Finance</td>
<td>3-0-0</td>
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<tr>
<td>MGMT 355-101</td>
<td>Operations Management</td>
<td>3-0-0</td>
<td>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.</td>
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<tr>
<td>MGMT 355-W02</td>
<td>Operations Management</td>
<td>3-0-0</td>
<td>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.</td>
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</tr>
<tr>
<td>MGMT 355-W03</td>
<td>Operations Management</td>
<td>3-0-0</td>
<td>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 and investment decisions, revenue analysis, performance evaluation, management incentive systems, and strategy analysis.</td>
<td>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 and investment decisions, revenue analysis, performance evaluation, management incentive systems, and strategy analysis.</td>
</tr>
<tr>
<td>MGMT 401-001</td>
<td>Intermediate Managerial Accounting</td>
<td>3-0-0</td>
<td>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.</td>
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</tr>
<tr>
<td>MGMT 402-001</td>
<td>Introduction to Income Taxes in Canada</td>
<td>3-0-0</td>
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<tr>
<td>MGMT 404-101</td>
<td>Advanced Financial Accounting</td>
<td>3-0-0</td>
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Develops an understanding of the diverse areas in human resources management. Examines analysis, planning, staffing, performance evaluation, compensation, training and development, labor relations, employee safety, health, human resource management, and an understanding of cultural differences and its impact on the organization. [3-0-0] Prerequisite: MGMT 230 and third-year standing.

Explores the latest concepts and/or issues in information technology management (ITM). Data warehousing, IS security, IT auditing and control, global ITM, and other related topics within the field of ITM. Not intended for topics routinely covered in the curriculum. Credit will be granted for only one of MGMT 429 or MGMT 329 when the subject matter is of the same nature. Prerequisite: Fourth-year standing.

Explores the latest concepts and/or issues in information technology management (ITM). Data warehousing, IS security, IT auditing and control, global ITM, and other related topics within the field of ITM. Not intended for topics routinely covered in the curriculum. Credit will be granted for only one of MGMT 429 or MGMT 329 when the subject matter is of the same nature. Prerequisite: Fourth-year standing.

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-arbitrage models), security analysis, and investment performance evaluation. [3-0-0] Prerequisite: MGMT 310 and third-year standing.

Introduction to theories and methods of corporate finance policy used by senior managers and the board of directors to direct the financial operations and strategy of the firm. Policies examined include financial structure, dividend policy, mergers and acquisitions, and risk management. [3-0-0] Prerequisite: MGMT 310 and third-year standing.

Examines from a marketing perspective the process of conceptualising, designing, developing, launching and ongoing marketing of new products or services. Topics include reasons for new product failure, barriers to new product adoption, stage gates and project planning tools, idea generation, design trade-offs, decision making, concept testing, and forecasting. [3-0-0] Prerequisite: All of MGMT 220, MGMT 290. Third-year standing.

Examines from a marketing perspective the process of conceptualising, designing, developing, launching and ongoing marketing of new products or services. Topics include reasons for new product failure, barriers to new product adoption, stage gates and project planning tools, idea generation, design trade-offs, decision making, concept testing, and forecasting. [3-0-0] Prerequisite: All of MGMT 220, MGMT 290. Third-year standing.

Methods to assess the efficiency of health-related programs; theoretical and practical empirical methods for conducting, analysing 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: SECH 400

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.

Examines from a marketing perspective the process of conceptualising, designing, developing, launching and ongoing marketing of new products or services. Topics include reasons for new product failure, barriers to new product adoption, stage gates and project planning tools, idea generation, design trade-offs, decision making, concept testing, and forecasting. [3-0-0] Prerequisite: All of MGMT 220, MGMT 290. Third-year standing.

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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 100, MGMT 110. Third-year standing and 3 credits of ENGL. Workshop In Person Learning Mon 2:00 p.m. - 3:30 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 100, MGMT 110. Third-year standing and 3 credits of ENGL. Workshop In Person Learning Fri 9:30 a.m. - 11:00 a.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 100, MGMT 110. 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 100, MGMT 110. Third-year standing and 3 credits of ENGL. Workshop In Person Learning Thu 3:30 p.m. - 5:00 p.m.

Culminating 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. [3-0-0] 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 economics 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 Nle?kepmx visual arts. The language of instruction is Nle?kepmx. Restricted to students in the Bachelor of Nlekepmx Language Fluency program. [1-0-4] Prerequisite: NLEK 351. Corequisite: NLEK 352. Lecture Online Learning Arranged Arranged

Intensive language immersion class demonstrating, in and through practice, traditional Nle?kepmx visual arts. The language of instruction is Nle?kepmx. Restricted to students in the Bachelor of Nlekepmx Language Fluency program. [1-0-4] Prerequisite: NLEK 351. Corequisite: NLEK 352. Laboratory Online Learning Arranged Arranged

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, oral traditions, literacy, grammatical understanding, and the cultural contextualization of language use in these domains. The language of instruction is Nle?kepmx. Restricted to students in the Bachelor of Nlekepmx Language Fluency program. [1-0-4] Prerequisite: NLEK 351. Corequisite: NLEK 352. Lecture Online Learning Arranged Arranged

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, oral traditions, literacy, grammatical understanding, and the cultural contextualization of language use in these domains. The language of instruction is Nle?kepmx. Restricted to students in the Bachelor of Nlekepmx Language Fluency program. [1-0-4] Prerequisite: NLEK 351. Corequisite: NLEK 352. Laboratory Online Learning Arranged Arranged

Project designed to provide students an intensive language immersion experience on a specific topic or domain. Restricted to students in the Bachelor of Nle?kepmx Language Fluency program. Corequisite: INDI 499. Lecture Online Learning Arranged Arranged

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 111, NRSG 113. Lecture In Person Learning Mon 2:00 p.m. - 5:00 p.m.

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 111, NRSG 113. Lecture In Person Learning Wed 2:00 p.m. - 5:00 p.m.

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 111, NRSG 113. Lecture In Person Learning Tue 12:30 p.m. - 2:00 p.m.

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 111, NRSG 113. Lecture In Person Learning Wed 12:30 p.m. - 2:00 p.m.
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<th>Code</th>
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<tbody>
<tr>
<td>NRSG 111-001</td>
<td>Relational Practice I</td>
<td>001</td>
<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Lecture In Person Learning Tue 8:00 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>NRSG 111-002</td>
<td>Relational Practice I</td>
<td>002</td>
<td>Understanding of self and the capacity to be in caring relation with others (individual, groups, populations, communities). Reflecting on personal perspectives and experiences to understand ones own attitudes, beliefs, and values. Pass/Fail [1-0-0] Prerequisite: First-year BSN-O Standing Corequisite: All of NRSG 111, NRSG 112. Lecture In Person Learning Tue 9:30 a.m. - 11:00 a.m.</td>
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<td>Understanding of self and the capacity to be in caring relation with others (individual, groups, populations, communities). Reflecting on personal perspectives and experiences to understand ones own attitudes, beliefs, and values. Pass/Fail [1-0-0] Prerequisite: First-year BSN-O Standing Corequisite: All of NRSG 111, NRSG 112. Lecture In Person Learning Wed 9:30 a.m. - 11:00 a.m.</td>
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<tr>
<td>NRSG 111-005</td>
<td>Relational Practice I</td>
<td>005</td>
<td>Understanding of self and the capacity to be in caring relation with others (individual, groups, populations, communities). Reflecting on personal perspectives and experiences to understand ones own attitudes, beliefs, and values. Pass/Fail [1-0-0] Prerequisite: First-year BSN-O Standing Corequisite: All of NRSG 111, NRSG 112. Lecture In Person Learning Fri 8:00 a.m. - 9:30 a.m.</td>
</tr>
<tr>
<td>NRSG 111-006</td>
<td>Relational Practice I</td>
<td>006</td>
<td>Understanding of self and the capacity to be in caring relation with others (individual, groups, populations, communities). Reflecting on personal perspectives and experiences to understand ones own attitudes, beliefs, and values. Pass/Fail [1-0-0] Prerequisite: First-year BSN-O Standing Corequisite: All of NRSG 111, NRSG 112. Lecture In Person Learning Fri 9:30 a.m. - 11:00 a.m.</td>
</tr>
<tr>
<td>NRSG 201-001</td>
<td>Nursing Lab Practice II</td>
<td>001</td>
<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Seminar In Person Learning Tue 8:00 a.m. - 9:30 a.m.</td>
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<tr>
<td>NRSG 201-002</td>
<td>Nursing Lab Practice II</td>
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<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Seminar In Person Learning Wed 8:00 a.m. - 9:30 a.m.</td>
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<td>Nursing Lab Practice II</td>
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<td>Nursing Lab Practice II</td>
<td>003</td>
<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Wed 10:00 a.m. - 1.00 p.m.</td>
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<tr>
<td>NRSG 201-004</td>
<td>Nursing Lab Practice II</td>
<td>004</td>
<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Wed 10:00 a.m. - 1.00 p.m.</td>
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<tr>
<td>NRSG 201-005</td>
<td>Nursing Lab Practice II</td>
<td>005</td>
<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Thu 10:00 a.m. - 1.00 p.m.</td>
</tr>
<tr>
<td>NRSG 201-006</td>
<td>Nursing Lab Practice II</td>
<td>006</td>
<td>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 236 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 213, NRSG 226, NRSG 236, HINT 231. Laboratory In Person Learning Thu 10:00 a.m. - 1.00 p.m.</td>
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NRSG_O 201-L07  Nursing Lab Practice II  WA  Nursing Lab Practice II  Laboratory  In Person Learning  Fri  10:00 a.m. - 1:00 p.m.

NRSG_O 201-L08  Nursing Lab Practice II  WA  Nursing Lab Practice II  Laboratory  In Person Learning  Fri  10:00 a.m. - 1:00 p.m.

NRSG_O 201-L09  Nursing Lab Practice II  WA  Nursing Lab Practice II  Laboratory  In Person Learning  Tue  10:00 a.m. - 1:00 p.m.

NRSG_O 201-L10  Nursing Lab Practice II  WA  Nursing Lab Practice II  Laboratory  In Person Learning  Wed  10:00 a.m. - 1:00 p.m.

NRSG_O 201-L11  Nursing Lab Practice II  WA  Nursing Lab Practice II  Laboratory  In Person Learning  Thu  10:00 a.m. - 1:00 p.m.

NRSG_O 201-L12  Nursing Lab Practice II  WA  Nursing Lab Practice II  Laboratory  In Person Learning  Fri  10:00 a.m. - 1:00 p.m.

NRSG_O 210-001  Pharmacology for Nursing I  WA  Pharmacology for Nursing I  Lecture  In Person Learning  Tue  2:00 p.m. - 3:30 p.m.

NRSG_O 210-002  Pharmacology for Nursing I  WA  Pharmacology for Nursing I  Lecture  In Person Learning  Wed  2:00 p.m. - 3:30 p.m.

NRSG_O 213-001  Relational Practice III  WA  Relational Practice III  Lecture  In Person Learning  Wed  3:30 p.m. - 5:00 p.m.

NRSG_O 213-002  Relational Practice III  WA  Relational Practice III  Lecture  In Person Learning  Thu  2:00 p.m. - 3:30 p.m.

NRSG_O 226-001  Health & Healing II  WA  Health & Healing II  Lecture  In Person Learning  Mon  9:30 a.m. - 11:00 a.m.

NRSG_O 226-002  Health & Healing II  WA  Health & Healing II  Lecture  In Person Learning  Mon  9:30 a.m. - 11:00 a.m.

NRSG_O 228-001  Community Health  WA  Community Health  Lecture  In Person Learning  Mon  11:00 a.m. - 12:30 p.m.

NRSG_O 229-001  Mental Health in Nursing  WA  Mental Health in Nursing  Lecture  In Person Learning  Mon  11:00 a.m. - 12:30 p.m.

NRSG_O 236-P01  Nursing Practice II  WA  Nursing Practice II  Experiential  In Person Learning  Tue  9:00 a.m. - 3:00 p.m.

NRSG_O 236-P02  Nursing Practice II  WA  Nursing Practice II  Experiential  In Person Learning  Tue  9:00 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. Experiential In Person Learning Tue 9:00 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. Experiential In Person Learning Tue 9:00 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. Experiential In Person Learning Wed 9:00 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. Experiential In Person Learning Wed 9:00 a.m. - 3:00 p.m.

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<th>Code</th>
<th>Type</th>
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<th>Co-requisite</th>
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<tr>
<td>NRSG_O 236-P15</td>
<td>P15</td>
<td>Nursing Practice II</td>
<td>All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>NRSG_O 236-P16</td>
<td>P16</td>
<td>Nursing Practice II</td>
<td>All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>NRSG_O 236-P17</td>
<td>P17</td>
<td>Nursing Practice II</td>
<td>All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>NRSG_O 236-P18</td>
<td>P18</td>
<td>Nursing Practice II</td>
<td>All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>Nursing Practice II</td>
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<td>NRSG_O 236-P20</td>
<td>P20</td>
<td>Nursing Practice II</td>
<td>All of BIOL 131, BIOL 133. and Second-Year BSN-O Standing Corequisite.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>NRSG_O 238-P01</td>
<td>P01</td>
<td>Nursing Practice in Community</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<tr>
<td>NRSG_O 238-P02</td>
<td>P02</td>
<td>Nursing Practice in Community</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>NRSG_O 238-P03</td>
<td>P03</td>
<td>Nursing Practice in Community</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>NRSG_O 238-P04</td>
<td>P04</td>
<td>Nursing Practice in Community</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>Nursing Practice in Community</td>
<td>All of NRSG 201, NRSG 210, NRSG 213, NRSG 226, HINT 231.</td>
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<td>Nursing Practice in Community</td>
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NRSG 238-P06
NRSG 239-P01
NRSG 239-P02
NRSG 239-P05
NRSG 239-P05
NRSG 239-P07
NRSG 239-P08
NRSG 301-001
NRSG 301-010
NRSG 301-012
NRSG 301-013
NRSG 301-014
NRSG 302-001
NRSG 302-010
NRSG 302-012
NRSG 302-012

In Person Learning Laboratory

Fri
001
L01
In Person Learning
Laboratory
L02
L03
P02
In Person Learning
L04
Nursing Practice in Mental Health
Experiential
Mon
P07
W1
Experiential
P03
In Person Learning
W1
1:00 p.m. - 3:00 p.m.

Nursing Practice in Mental Health

W1
Nursing Lab Practice V
Laboratory
Mon
11:00 a.m. - 12:30 p.m.

Seminar
Experiential
Fri
001
L01
Nursing Lab Practice IV
Seminar
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 medical settings. [0-2-1.5] Prerequisite: All of BIOL 131, BIOL 133, and Third-Year BSN-O Standing Corequisite: NRSG 287.

In Person Learning Fri
8:00 a.m. - 12:00 p.m.

Seminar
Experiential
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 medical settings. [0-2-1.5] Prerequisite: All of BIOL 131, BIOL 133, and Third-Year BSN-O Standing Corequisite: NRSG 287.

In Person Learning Mon
8:00 a.m. - 12:00 p.m.

Laboratory
Experiential
Mon
1:00 p.m. - 3:00 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 medical settings. [0-2-1.5] Prerequisite: All of BIOL 131, BIOL 133, and Third-Year BSN-O Standing Corequisite: NRSG 287.

In Person Learning Mon
8:00 a.m. - 12:00 p.m.

Laboratory
Experiential
Mon
1:00 p.m. - 3:00 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 medical settings. [0-2-1.5] Prerequisite: All of BIOL 131, BIOL 133, and Third-Year BSN-O Standing Corequisite: NRSG 287.

In Person Learning Mon
8:00 a.m. - 12:00 p.m.

Laboratory
Experiential
Mon
3:30 p.m. - 5:30 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 medical settings. [0-2-1.5] Prerequisite: All of BIOL 131, BIOL 133, and Third-Year BSN-O Standing Corequisite: NRSG 287.

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

Laboratory
Experiential
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 medical settings. [0-2-1.5] Prerequisite: All of BIOL 131, BIOL 133, and Third-Year BSN-O Standing Corequisite: NRSG 287.

In Person Learning Mon
1:00 p.m. - 3:00 p.m.

Laboratory
Experiential
Mon
1:00 p.m. - 3:00 p.m.
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<td>302</td>
<td>NRSG 302-103</td>
<td>W1</td>
<td>3</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>3:30 p.m. - 5:30 p.m.</td>
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<td>304</td>
<td>NRSG 304-104</td>
<td>W1</td>
<td>3</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>3:30 p.m. - 5:30 p.m.</td>
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<td>300-001</td>
<td>Palliative Approach to Chronic Illness</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Tue</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<tr>
<td>300-002</td>
<td>Palliative Approach to Chronic Illness</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Thu</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<tr>
<td>311-001</td>
<td>Relational Practice V</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Tue</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>311-002</td>
<td>Relational Practice V</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Thu</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<td>306-001</td>
<td>Health &amp; Healing IV</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Wed</td>
<td>8:00-11:00 a.m.</td>
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<tr>
<td>307-001</td>
<td>Health &amp; Healing V</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Wed</td>
<td>8:00-11:00 a.m.</td>
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<td>328-002</td>
<td>Health of the Childbearing Family</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>328-002</td>
<td>Health of the Childbearing Family</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<td>301-001</td>
<td>Child Health</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>301-001</td>
<td>Child Health</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Mon</td>
<td>8:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>336-P01</td>
<td>Nursing Practice in Medical Settings</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Wed</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<tr>
<td>336-P02</td>
<td>Nursing Practice in Medical Settings</td>
<td>W2</td>
<td>3</td>
<td>Lecture</td>
<td>Wed</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<tr>
<td>336-P03</td>
<td>Nursing Practice in Medical Settings</td>
<td>W1</td>
<td>3</td>
<td>Lecture</td>
<td>Wed</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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</table>
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 NRSG 131, NRSG 133, HINT 231, BIOL 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326.

Experiential 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. [0-16-0] Prerequisite: All of NRSG 131, NRSG 133, HINT 231, BIOL 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326.

Experiential 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. [0-16-0] Prerequisite: All of NRSG 131, NRSG 133, HINT 231, BIOL 232. and Third-year BSN-O Standing. Corequisite: All of NRSG 301, NRSG 326.

Experiential 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. [0-16-0] Prerequisite: All of NRSG 131, NRSG 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.

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Experiential In Person Learning Thu Fri
7:00 a.m. - 3:00 p.m.
<table>
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<tr>
<th>Course Code</th>
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<tr>
<td>NRSG 337-P07</td>
<td>P07</td>
<td>Nursing Practice in Surgical Settings</td>
<td>Experiential</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P06</td>
<td>P06</td>
<td>Nursing Practice in Surgical Settings</td>
<td>Experiential</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P09</td>
<td>P09</td>
<td>Nursing Practice in Surgical Settings</td>
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<td>7:00 a.m. - 3:00 p.m.</td>
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<td>NRSG 337-P10</td>
<td>P10</td>
<td>Nursing Practice in Surgical Settings</td>
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<td>Thu Fri</td>
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<td>NRSG 337-P11</td>
<td>P11</td>
<td>Nursing Practice in Surgical Settings</td>
<td>Experiential</td>
<td>Thu Fri</td>
<td>7:00 a.m. - 3:00 p.m.</td>
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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. Prerequisite: All of NRSG 301, NRSG 326, NRSG 336. Third-year BSN-O Standing. Corequisite: All of NRSG 302, NRSG 327.

Corequisite: NRSG 328.

Bachelor of Science in Nursing. Pass/Fail. Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232.
NRSG_O 338-P10  P10  Nursing Practice with Childbearing Families  W1  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 326. Ethical considerations common to this area of practice will be explored. Restricted to students in the Bachelor of Science in Nursing. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 328.  Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P01  P01  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Tue 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P02  P02  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Wed 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P03  P03  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P04  P04  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P05  P05  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Tue 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P06  P06  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Wed 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P07  P07  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Thu 7:00 a.m. - 3:00 p.m.

NRSG_O 339-P08  P08  Nursing Practice in Child Health  W1  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. Pass/Fail. [0-8-0] Prerequisite: All of BIOL 131, BIOL 133, HINT 231, BIOL 232. Corequisite: NRSG 329.  Experiential In Person Learning Fri 7:00 a.m. - 3:00 p.m.

NRSG_O 421-001  P01  Capstone Review  W1  A comprehensive review of entry-level nursing knowledge, skills, and abilities in preparation for writing the nursing entry to practice regulatory examination. Through simulation and interactive case studies participants will have opportunities to apply previous learning and clinical reasoning to situations commonly seen in the first year of registered nursing practice. [0-8-0] Theory and research for evidence-informed practice for the assessment and care of the complex, unstable, acutely ill patient. Understanding challenging etiology, pathophysiology, manifestations, diagnostics and intervention to inform advanced clinical reasoning. [0-8-0] Prerequisite: NRSG 421. Fourth-Year BSN-O Standing Corequisite: All of NRSG 422, NRSG 432.  Lecture In Person Learning Tue Thu 11:00 a.m. - 2:00 p.m.

NRSG_O 422-001  P01  Leadership  W1  Theory and research for evidence-informed practice for the assessment and care of the complex, unstable, acutely ill patient. Understanding challenging etiology, pathophysiology, manifestations, diagnostics and intervention to inform advanced clinical reasoning. [0-8-0] Prerequisite: Fourth-Year BSN-O Standing Corequisite: All of NRSG 421, NRSG 432.  Lecture In Person Learning Wed Fri 11:00 a.m. - 2:00 p.m.

NRSG_O 423-001  P01  Advanced Clinical Reasoning for Care of the Cor  W1  Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail. [0-8-0] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. and the recommendation of practice advising committee.  Lecture In Person Learning Tue Thu 11:00 a.m. - 2:00 p.m.

NRSG_O 431-P01  P01  Capstone Acute Care Preceptorship  W1  Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail. [0-8-0] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. and the recommendation of practice advising committee.  Experiential In Person Learning Arranged Arranged

NRSG_O 431-P02  P02  Capstone Acute Care Preceptorship  W1  Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail. [0-8-0] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. and the recommendation of practice advising committee.  Experiential In Person Learning Arranged Arranged

NRSG_O 431-P03  P03  Capstone Acute Care Preceptorship  W1  Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail. [0-8-0] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. and the recommendation of practice advising committee.  Experiential In Person Learning Arranged Arranged

NRSG_O 431-P04  P04  Capstone Acute Care Preceptorship  W1  Preceptored practice course consolidates acute care clinical knowledge, skills, and abilities. Demonstrates evidence-informed practice at a graduate nurse level. Pass/Fail. [0-8-0] Prerequisite: All of NRSG 421, NRSG 422, NRSG 432. and the recommendation of practice advising committee.  Experiential In Person Learning Arranged Arranged
<table>
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<tr>
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<th>Course Title</th>
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<td>NRSG 437-B_P01</td>
<td>Community Health Nursing Preceptorship</td>
<td>In Person Learning</td>
<td>4 credits</td>
<td>Prerequisite: All of NRSG 421, NRSG 422, NRSG 428, NRSG 432. and recommendation of practice advising committee. <em>Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks]</em></td>
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<td>NRSG 437-B_P02</td>
<td>Mental Health Preceptorship</td>
<td>In Person Learning</td>
<td>4 credits</td>
<td>Prerequisite: All of NRSG 421, NRSG 422, NRSG 432 and one of NRSG 429, HINT 429.</td>
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<td>NRSG 437-B_P03</td>
<td>Mental Health Preceptorship</td>
<td>In Person Learning</td>
<td>4 credits</td>
<td>Prerequisite: All of NRSG 421, NRSG 422, NRSG 432 and one of NRSG 429, HINT 429.</td>
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<td>NRSG 437-B_P04</td>
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<td>4 credits</td>
<td>Prerequisite: All of NRSG 421, NRSG 422, NRSG 432 and one of NRSG 429, HINT 429.</td>
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*Dependent on availability. [4 credits 120 hours over 4 weeks or 8 credits 240 hours over 8 weeks]
NRSG_O 440-R 001
Research Preceptorship
WS
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: acceptance of a faculty supervisor and research-elective (3/3) as determined by faculty supervisor.
Experiential
In Person Learning
Arranged
Arranged

NRSG_O 506-001
NRSG_O 001
Qualitative Research
WS
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 of the Graduate Program Coordinator, School of Nursing.
Lecture
Online Learning
Wed
3:30 p.m. - 5:00 p.m.

NRSG_O 522-001
NRSG_O 001
Introduction to Nursing Education
WS
Examines issues and trends in nursing education including implications for the teaching practices of nurse educators. [3-0-0] Corequisite: NRSG 504 or permission of the Graduate Program Coordinator, School of Nursing.
Lecture
Online Learning
Arranged
Arranged

NRSG_O 542-001
NRSG_O 001
Introduction to Nursing Leadership and Management
WS
Tools for dealing with both everyday and more technical arguments and concepts. Analysis and resolution of confusions, ambiguities, and fallacies. This course is restricted to students with fewer than 90 credits. [3-0-0]
Lecture
Online Learning
Arranged
Arranged

NRSG_O 580-001
NRSG_O 001
Philosophy of Evidence in Nursing
WS
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, NRSG) unless permission is given by the program coordinator. Prerequisite: NRSG 500.
Lecture
Online Learning
Tue
10:00 a.m. - 12:00 p.m.

NRSG_O 558-001
NRSG_O 001
Scholarly Project
WS-2
Pass/Fail.
Independent Study
Online Learning
Arranged
Arranged

NRSG_O 558-002
NRSG_O 002
Scholarly Project
WS
Pass/Fail.
Independent Study
Online Learning
Arranged
Arranged

NRSG_O 599-101
NRSG_O 101
Research Thesis
WS
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_O 599-102
NRSG_O 102
Research Thesis
WS-2
Pass/Fail.
Thesis
Online Learning
Arranged
Arranged

NRSG_O 601-102
NRSG_O 101
Doctoral Seminar
WS-2
Seminar
Online Learning
Wed (Alternates)
8:00 a.m. - 9:30 a.m.

NRSG_O 699-001
NRSG_O 001
Doctoral Dissertation
WS-2
Pass/Fail.
Thesis
Online Learning
Arranged
Arranged

NSYL_O 333-101
NSYL_O 101
Language Practice and Pedagogy: Creative, Conversational
WS
Lecture
In Person Learning
Arranged
Arranged

NSYL_O 352-101
NSYL_O 101
Language Applications: Literature and Performative
WS
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, oral traditions, literacy, 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. [1-0-4] Prerequisite: NSYL 331. Corequisite: NSYL 352.
Lecture
In Person Learning
Arranged
Arranged

NSYL_O 439-101
NSYL_O 101
Captivate: Language Immersion
WS
Project designed to provide students an intensive language immersion experience on a specific topic or domain. Restricted to students in the Bachelor of Nsyilxcn Language Fluency program. Corequisite: NSYL 499.
Lecture
In Person Learning
Arranged
Arranged

NSYL_O 439-L01
NSYL_O 101
Captivate: Language Immersion
WS
Project designed to provide students an intensive language immersion experience on a specific topic or domain. Restricted to students in the Bachelor of Nsyilxcn Language Fluency program. Corequisite: NSYL 499.
Lecture
In Person Learning
Arranged
Arranged

PHEL_O 111-001
PHEL_O 001
Introduction to Philosophy I
WS
Introduction to outstanding philosophers and their systems. Ethics, political philosophy, metaphysics, and philosophy of religion. [3-0-0]
Lecture
In Person Learning
Tue Thu
9:30 a.m. - 11:00 a.m.

PHEL_O 111-002
PHEL_O 002
Introduction to Philosophy I
WS
Introduction to outstanding philosophers and their systems. Ethics, political philosophy, metaphysics, and philosophy of religion. [3-0-0]
Lecture
In Person Learning
Tue Thu
11:00 a.m. - 12:30 p.m.

PHEL_O 120-001
PHEL_O 001
Introduction to Logic and Critical Thinking
WS
Tools for dealing with both everyday and more technical arguments and concepts. Analysis and resolution of confusions, ambiguities, and fallacies. This course is restricted to students with fewer than 90 credits. [3-0-0]
Lecture
In Person Learning
Wed
9:30 a.m. - 11:00 a.m.

PHEL_O 120-002
PHEL_O 002
Introduction to Logic and Critical Thinking
WS
Tools for dealing with both everyday and more technical arguments and concepts. Analysis and resolution of confusions, ambiguities, and fallacies. This course is restricted to students with fewer than 90 credits. [3-0-0]
Lecture
In Person Learning
Mon Wed
12:30 p.m. - 2:00 p.m.

PHEL_O 121-001
PHEL_O 001
Introduction to Philosophy II
WS
Introduction to outstanding philosophers and their systems. Theory of knowledge, logic, and contemporary philosophy. [3-0-0]
Lecture
In Person Learning
Tue Thu
11:00 a.m. - 12:30 p.m.

PHEL_O 120-001
PHEL_O 001
Symbolic Logic I
WS
Sentential and predicate logic. Translation from natural language; truth tables and interpretations; systems of natural deduction up to relational predicate logic with identity; alternative proof methods. Some sections may use computer-based materials and tests. [3-0-0]
Lecture
In Person Learning
Mon Wed
2:00 p.m. - 3:30 p.m.

PHEL_O 230-001
PHEL_O 001
Ethics
WS
Theories of obligation and value; moral reasoning; normative ethics, descriptive ethics, and metaethics. Readings in classic and contemporary texts. [3-0-0] Prerequisite: Second-year standing.
Lecture
In Person Learning
Wed
3:30 p.m. - 5:00 p.m.

PHEL_O 233-001
PHEL_O 001
Biomedical Ethics
WS
Moral problems arising in the health sciences. Topics may include abortion, death and euthanasia, genetic engineering, behaviour modification, compulsory treatment, experimentation with human beings and animals, and/or the relationship between professionals and their patients, subjects, or clients. Credit will be granted for only one of PHIL 233 or PHIL 433. [3-0-0] Prerequisite: Second-year standing.
Lecture
In Person Learning
Mon Wed
11:00 a.m. - 12:30 p.m.
PHIL_O 331-001
PHIL_O 001
Computer Ethics
WS
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 PHYS, or third-year standing in a Science program. Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

PHIL_O 331-002
PHIL_O 002
Computer Ethics
WS
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 PHYS, or third-year standing in a Science program. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

PHIL_O 345-001
PHIL_O 001
Theory of Knowledge
WS
Examines the criteria of knowing, problems of perception, and theories of truth. [3-0-0] Prerequisite: Third-year standing and 6 credits of PHYS. Lecture In Person Learning Wed Fri 8:00 a.m. - 9:30 a.m.

PHIL_O 418-H_001
PHIL_O H 001
Topics in 20th-Century Philosophy
WS
Intensive study of a major philosopher such as Wittgenstein, Russell, or Heidegger, or school such as pragmatism or logical empiricism. [3-0-0] Prerequisite: Third-year standing and 3 credits of PHYS. Lecture In Person Learning Mon Wed 6:30 p.m. - 8:00 p.m.

PHIL_O 425-001
PHIL_O 001
Philosophy of Language
WS
Philosophical approaches to reference, meaning, and truth, given their correlation with linguistic expressions and speech. Topics may include interpretation and translation, literal and figurative language, pragmatics and the norms of conversation, the nature of language. [3-0-0] Prerequisite: Third-year standing and 6 credits of PHYS, including one of PHYS 11, 12, 130, 131. Lecture In Person Learning Wed Fri 11:00 a.m. - 12:30 p.m.

PHIL_O 435-001
PHIL_O 001
Environmental Ethics
WS
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 PHYS or SLCT 101. Third-year standing. Lecture In Person Learning Mon Wed 9:30 a.m. - 11:00 a.m.

PHIL_O 437-001
PHIL_O 001
Philosophy and the Global Order
WS
Central contemporary philosophical approaches to global political systems and governance. Clarifying the meaning of basic political concepts (e.g., citizenship, civil society, liberty and human rights) in both a global context and when necessary outside the traditional framework of the nation state. [3-0-0] Prerequisite: Third-year standing and 3 credits of PHYS. Lecture In Person Learning Tue Thu 12:30 p.m. - 2:00 p.m.

PHYS_O 111-001
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.

PHYS_O 111-001
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.

PHYS_O 111-001
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.

PHYS_O 111-002
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.

PHYS_O 111-003
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.

PHYS_O 111-004
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.

PHYS_O 111-005
PHYS_O 001
Introductory Physics for the Physical Sciences I
WS
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, gravitational, 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.
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.

Laboratory In Person Learning Wed (Alternate weeks) 6:30 p.m. - 9:30 p.m.

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.

Laboratory In Person Learning Thu (Alternate weeks) 9:00 a.m. - 12:00 p.m.

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.

Laboratory In Person Learning Thu (Alternate weeks) 12:30 p.m. - 3:30 p.m.

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.

Laboratory In Person Learning Wed (Alternate weeks) 6:30 p.m. - 9:30 p.m.

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.

Laboratory In Person Learning Wed (Alternate weeks) 9:30 a.m. - 12:30 p.m.

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.

Laboratory In Person Learning Wed (Alternate weeks) 9:00 a.m. - 12:00 p.m.

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.

Laboratory In Person Learning Thu (Alternate weeks) 9:00 a.m. - 12:00 p.m.

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.

Laboratory In Person Learning Tue (Alternate weeks) 9:00 a.m. - 12:00 p.m.

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.

Laboratory In Person Learning Tue (Alternate weeks) 12:30 p.m. - 3:30 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Disk</th>
<th>Section</th>
<th>Title</th>
<th>Unit</th>
<th>Time</th>
<th>Location</th>
<th>Days</th>
<th>In Person Learning</th>
<th>Code</th>
<th>Notes</th>
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<tbody>
<tr>
<td>PHYS_111-L15</td>
<td></td>
<td>L15</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Wed (Alternate weeks)</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>PHYS_111-L16</td>
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<td>L16</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Thu (Alternate weeks)</td>
<td>9:00 a.m. - 12:00 p.m.</td>
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<td>PHYS_111-L17</td>
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<td>L17</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Thu (Alternate weeks)</td>
<td>12:30 p.m. - 3:30 p.m.</td>
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<td>PHYS_111-L18</td>
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<td>L18</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Laboratory</td>
<td>In Person Learning</td>
<td>Thu (Alternate weeks)</td>
<td>6:30 p.m. - 9:30 p.m.</td>
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<tr>
<td>PHYS_111-T01</td>
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<td>T01</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Discussion</td>
<td>In Person Learning</td>
<td>Wed</td>
<td>8:00 a.m. - 9:00 a.m.</td>
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</tr>
<tr>
<td>PHYS_111-T02</td>
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<td>T02</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Discussion</td>
<td>In Person Learning</td>
<td>Wed</td>
<td>8:00 a.m. - 9:00 a.m.</td>
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<tr>
<td>PHYS_111-T03</td>
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<td>T03</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Discussion</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>1:00 p.m. - 2:00 p.m.</td>
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<td>PHYS_111-T04</td>
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<td>T04</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Discussion</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>10:00 a.m. - 11:00 a.m.</td>
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<tr>
<td>PHYS_111-T05</td>
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<td>T05</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>WS</td>
<td>5</td>
<td>Discussion</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>5:00 p.m. - 6:00 p.m.</td>
<td></td>
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</tbody>
</table>

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.

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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<th>Course Code</th>
<th>Section</th>
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<th>Class Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
<th>Prerequisites</th>
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<tr>
<td>PHYS 111-T06</td>
<td>W1</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>2:30 p.m. - 5:30 p.m.</td>
<td>Tue Thu</td>
<td>In Person Learning</td>
<td>PHYS 111-002</td>
<td>2:30 p.m. - 5:30 p.m.</td>
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<td>PHYS 111-T07</td>
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<td>Introductory Physics for the Physical Sciences I</td>
<td>2:00 p.m. - 3:30 p.m.</td>
<td>Tue</td>
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<td>PHYS 111-001</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<td>PHYS 111-T06</td>
<td>W1</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>6:30 p.m. - 8:00 p.m.</td>
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<td>PHYS 111-001</td>
<td>6:30 p.m. - 8:00 p.m.</td>
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<td>PHYS 111-XM1</td>
<td>XM1</td>
<td>Introductory Physics for the Physical Sciences I</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>PHYS 111-001</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>PHYS 111-XM2</td>
<td>XM2</td>
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<td>2:30 p.m. - 3:30 p.m.</td>
<td>Wed</td>
<td>Laboratory</td>
<td>PHYS 111-001</td>
<td>2:30 p.m. - 3:30 p.m.</td>
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<td>MATH 100 is strongly recommended. PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking one of MATH 116.</td>
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<td>PHYS 111-001</td>
<td>001</td>
<td>Introductory Physics for the Life Sciences I</td>
<td>6:30 p.m. - 8:00 p.m.</td>
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<td>PHYS 111-001</td>
<td>6:30 p.m. - 8:00 p.m.</td>
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<td>2:00 p.m. - 3:30 p.m.</td>
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<td>Lecture</td>
<td>PHYS 111-001</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<td>PHYS 112-LO1</td>
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<td>Introductory Physics for the Life Sciences I</td>
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<td>Wed Alternate weeks</td>
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<td><strong>PHYS_O 112-L05</strong></td>
<td><strong>PHYS_O 112-L06</strong></td>
<td><strong>PHYS_O 112-L07</strong></td>
<td><strong>PHYS_O 112-L08</strong></td>
<td><strong>PHYS_O 112-L09</strong></td>
<td><strong>PHYS_O 112-L10</strong></td>
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<td><strong>L05</strong></td>
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<td><strong>6:30 p.m. - 9:30 p.m.</strong></td>
<td><strong>9:30 a.m. - 12:30 p.m.</strong></td>
<td><strong>2:30 p.m. - 5:30 p.m.</strong></td>
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<td><strong>Tue (Alternate weeks)</strong></td>
<td><strong>Wed (Alternate weeks)</strong></td>
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Laboratory In Person Learning Tue (Alternate weeks) 6:30 p.m. - 9:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Wed (Alternate weeks) 2:30 p.m. - 5:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

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Laboratory In Person Learning Wed (Alternate weeks) 9:30 a.m. - 12:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

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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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Tue (Alternate weeks) 6:30 p.m. - 9:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Wed (Alternate weeks) 2:30 p.m. - 5:30 p.m.
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<th>Course Code</th>
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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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Thu (Alternate weeks) 6:30 p.m. - 9:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Wed (Alternate weeks) 9:30 a.m. - 12:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Tue (Alternate weeks) 2:30 p.m. - 5:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Wed (Alternate weeks) 2:30 p.m. - 5:30 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Laboratory In Person Learning Fri (Alternate weeks) 10:00 a.m. - 11:00 a.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

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

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Discussion In Person Learning Mon 4:00 p.m. - 5:00 p.m.

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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.

Discussion In Person Learning Mon 4:00 p.m. - 5:00 p.m.
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<th>WS</th>
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<td><strong>In Person Learning</strong></td>
<td><strong>Fri</strong></td>
<td>8:00 a.m. - 9:00 a.m.</td>
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<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<th>T06</th>
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<tr>
<td><strong>Discussion</strong></td>
<td><strong>In Person Learning</strong></td>
<td><strong>Mon</strong></td>
<td>9:00 a.m. - 10:00 a.m.</td>
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<tr>
<th>PHYS_O 112-T07</th>
<th>PHYS_O</th>
<th>T07</th>
<th>Introductory Physics for the Life Sciences I</th>
<th>WS</th>
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<tr>
<td><strong>Discussion</strong></td>
<td><strong>In Person Learning</strong></td>
<td><strong>Thu</strong></td>
<td>1:00 p.m. - 2:00 p.m.</td>
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<tr>
<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<th>PHYS_O 112-T08</th>
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<td><strong>In Person Learning</strong></td>
<td><strong>Tue</strong></td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<th>PHYS_O 112-T09</th>
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<td><strong>Discussion</strong></td>
<td><strong>In Person Learning</strong></td>
<td><strong>Wed</strong></td>
<td>5:00 p.m. - 6:00 p.m.</td>
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<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<td><strong>Wed</strong></td>
<td>5:00 p.m. - 6:00 p.m.</td>
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<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<td><strong>Tue</strong></td>
<td>1:00 p.m. - 2:00 p.m.</td>
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<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<td>5:00 p.m. - 6:00 p.m.</td>
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<td>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 XM2 tutorial section. (3-3*-1) Prerequisite: One of MATH 12, PREC 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.</td>
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<td>5:00 p.m. - 6:00 p.m.</td>
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PHYS 112-XM1  PHYS 112-XM2
XM1  XM2
Introductory Physics for the Life Sciences I  Introductory Physics for the Life Sciences II

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 XM2 tutorial section. [3-3*-1] Prerequisite: One of MATH 12, PRIN 12, MATH 125, MATH 126. Physics 11 and Physics 12 are strongly recommended. Concurrently taking MATH 140 is strongly recommended.  Laboratory  In Person Learning  Arranged  Arranged

PHYS 215-101
101 Thermodynamics

Thermodynamics at an intermediate level. Temperature, heat and work, the First Law, heat transfer, heat engines, entropy, and the Second Law. [3-0-0] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122.  Lecture  In Person Learning  Mon Wed 9:30 a.m. - 11:00 a.m.

PHYS 231-001
001 Introduction to Electronics

Design and analysis of analog AC circuits, digital circuits, and analog-to-digital conversion methods. Basic physics laboratory skills including data collection, presentation of results, and analysis of uncertainties. [2-3-0] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122.  Lecture  In Person Learning  Mon Wed 1:00 p.m. - 2:00 p.m.

PHYS 231-101
101 Introduction to Electronics

Design and analysis of analog AC circuits, digital circuits, and analog-to-digital conversion methods. Basic physics laboratory skills including data collection, presentation of results, and analysis of uncertainties. [2-3-0] Prerequisite: One of MATH 101, MATH 103 and one of PHYS 121, PHYS 122.  Laboratory  In Person Learning  Thu 9:00 a.m. - 12:00 p.m.

PHYS 301-001
001 Electricity and Magnetism

Electric fields and potentials of static charge distributions, current, fields of moving charges, magnetic field, electromagnetic induction, Maxwell’s equations. [3-0-1] Prerequisite: MATH 117 and one of PHYS 121, PHYS 122.  Lecture  In Person Learning  Mon Wed 2:00 p.m. - 3:00 p.m.

PHYS 301-501
501 Electricity and Magnetism

Interior treatment of wave production, propagation, reception. Acoustics, electrical transmission lines, electromagnetics, scalar wave equation. Finite difference time domain computer simulation, boundary conditions, normal modes, input impedance, energy density, power flow/propagation across boundaries at normal and oblique incidence, sonic transducers, alternating current sources, and antennas. [3-0-0] Prerequisite: MATH 200 and one of PHYS 200, PHYS 216.  Lecture  In Person Learning  Mon Wed Fri 12:00 p.m. - 1:00 p.m.

PHYS 304-001
001 Introduction to Quantum Mechanics

Intermediate advanced physics experiments in solid-state physics, fluid dynamics, particle physics, astrophysics, optics, nonlinear dynamics or electromagnetism. Experimental design, construction, and formal presentation of results. [3-3-1.5] Prerequisite: All of PHYS 231, PHYS 232.  Lecture  In Person Learning  Thu 2:00 p.m. - 3:30 p.m.

PHYS 324-001
001 Waves

Experimental Physics I

Selected advanced physics experiments in solid-state physics, fluid dynamics, particle physics, astrophysics, optics, nonlinear dynamics or electromagnetism. Experimental design, construction, and formal presentation of results. [0-3-1.5] Prerequisite: All of PHYS 231, PHYS 232.  Lecture  In Person Learning  Thu 12:30 p.m. - 2:00 p.m.

PHYS 331-001
001 Experimental Physics I

Experimental Physics I

Selected advanced physics experiments in solid-state physics, fluid dynamics, particle physics, astrophysics, optics, nonlinear dynamics or electromagnetism. Experimental design, construction, and formal presentation of results. [0-3-1.5] Prerequisite: All of PHYS 231, PHYS 232.  Laboratory  In Person Learning  Tue 9:30 a.m. - 12:30 p.m.

PHYS 402-101
101 Advanced Quantum Mechanics

Quantum mechanical methods and concepts emphasizing operator algebra approaches. Commutation relations; quantum dynamics; approximation methods including stationary-state and time-dependent perturbation theory; interaction of radiation with matter; identical particles. [3-0-0] Prerequisite: PHYS 304.  Lecture  In Person Learning  Wed Fri 12:30 p.m. - 2:00 p.m.

PHYS 403-001
001 Statistical Mechanics

Ensemble theory, application to classical and quantum gases, and Boltzmann equation. Principles and applications of statistical mechanics. Ideal gases, degenerate Fermi gases, Bose-Einstein condensation, black body radiation, fluctuations and phase transitions. [3-0-0] Prerequisite: All of MATH 200, PHYS 215.  Lecture  In Person Learning  Wed Fri 3:30 p.m. - 5:00 p.m.

PHYS 448-A_001
A_001 Directed Studies in Physics

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  Arranged

PHYS 448-A_002
A_002 Directed Studies in Physics

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  Arranged

PHYS 448-B_101
B_101 Directed Studies in Physics

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  Arranged
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<tr>
<th>Course Code</th>
<th>Department</th>
<th>Level</th>
<th>Title</th>
<th>Credit Value</th>
<th>Type</th>
<th>Mode</th>
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<td>C C_001</td>
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<td>Radiotherapy Physics I</td>
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<td>9:30 a.m. - 11:00 a.m.</td>
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<td>PHYS_O 540-001</td>
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<td>Medical Imaging</td>
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<td>1:30 p.m. - 3:00 p.m.</td>
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<td>PHYS_O 548-A_001</td>
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<td>Special Topics in Medical Physics</td>
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<td>Wed Fri</td>
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<td>POLI_O 100-T01</td>
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<td>Introduction to Politics</td>
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<td>POLI_O 100-T02</td>
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<td>Introduction to Politics</td>
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<td>Discussion</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>8:00 a.m. - 9:30 a.m.</td>
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<td>POLI_O 100-T03</td>
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<td>Introduction to Politics</td>
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<td>Discussion</td>
<td>In Person Learning</td>
<td>Mon</td>
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<td>POLI_O 100-T04</td>
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<td>Introduction to Politics</td>
<td>WS</td>
<td>Discussion</td>
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<td>Introduction to Politics</td>
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<td>POLI_O 201-001</td>
<td>POLI_O</td>
<td>001</td>
<td>Introduction to Philosophy, Politics and Economics</td>
<td>WS</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<td>POLI_O 203-001</td>
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<td>001</td>
<td>Introduction to Law and Politics</td>
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<td>Thu</td>
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<td>POLI_O 250-001</td>
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<td>001</td>
<td>Introduction to Political Theory</td>
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<td>Lecture</td>
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<td>Mon Wed</td>
<td>8:00 a.m. - 9:30 a.m.</td>
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<td>POLI_O 309-A_001</td>
<td>POLI_O</td>
<td>A A_001</td>
<td>Topics in Political Science</td>
<td>WS</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Wed Fri</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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</table>
PSYO 313-001  PSYO_O  Cognition: An Interdisciplinary Perspective  WS  Introduction to Psychology: Basic Processes. Methods and statistics, the nervous system and physiological processes, sensation and perception, learning, cognition and memory. [3-0-0] Prerequisite: All of PSYO 111, PSYO 121. Or all of PSYC 101, PSYC 102, or PSYC 100.

PSYO 314-001  PSYO_O  Developmental Psychology  WS  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 121. Or all of PSYC 101, PSYC 102, or PSYC 100.

PSYO 315-001  PSYO_O  Personality  WS  Introduction to psychology. Sensation, perception, learning, memory, thinking, and emotion. Life span development, social processes, personality, psychopathology, and psychotherapy. [3-0-0] Prerequisite: PSYO 111.

PSYO 316-001  PSYO_O  Research Methods and Design  WS  Introduction to the procedures and difficulties in the design and critical evaluation of research in experimental psychology. Various research designs and basic statistics. Required for students majoring in Psychology, restricted to students majoring in Psychology. [3-0-0] Prerequisite: PSYO 111, PSYO 121. Or all of PSYC 101, PSYC 102, or PSYC 100.

PSYO 317-001  PSYO_O  Learning  WS  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 121. Or all of PSYC 101, PSYC 102, or PSYC 100.

PSYO 318-001  PSYO_O  Perception  WS  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 121. Or all of PSYC 101, PSYC 102, or PSYC 100.

PSYO 319-001  PSYO_O  Lifespan Development  WS  Introduction to psychological processes, sensation and perception, learning, cognition and memory. [3-0-0] Prerequisite: All of PSYO 111, PSYO 121. Or all of PSYC 101, PSYC 102, or PSYC 100.

PSYO 320-101  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: POLI 302 or PSYO 327.

PSYO 321-001  PSYO_O  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 322-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 323-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 324-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 325-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 326-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 327-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 328-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 329-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 330-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 331-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 332-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 333-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 334-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 335-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 336-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 337-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 338-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 339-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.

PSYO 340-001  PSYO_O  Seminar in Canadian Politics Topics  WS  Seminar on selected topics in Canadian politics. Credit will only be granted for one of PSYO 464 or PSYO 449 when on the same topic. Repeatable for up to 6 credits with different topics. [0-0-3] Prerequisite: PSYO 330-149.
PSYO_035-001  PSYO_035-001
001  Basic Clinical Diagnostics  PSYO 035-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
8:00 a.m. - 11:00 a.m.

PSYO_036-001  PSYO_037-001
001  Adolescence Development  PSYO 036-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
9:30 a.m. - 11:00 a.m.

PSYO_046-001  PSYO_047-001
001  Introduction to Counselling and Interviewing  PSYO 046-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
9:30 a.m. - 11:00 a.m.

PSYO_056-001  PSYO_057-001
001  Contemporary Theories of Psychology  PSYO 056-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
9:30 a.m. - 11:00 a.m.

PSYO_058-001  PSYO_059-001
001  Clinical Assessment  PSYO 058-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
9:30 a.m. - 11:00 a.m.

PSYO_060-001  PSYO_061-001
001  Psychological Assessment I  PSYO 060-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
9:30 a.m. - 11:00 a.m.

PSYO_062-001  PSYO_063-001
001  Psychological Intervention I: Process, Motivation  PSYO 062-001-001
W1  In Person Learning
Lecture
Mon Wed Fri
9:30 a.m. - 11:00 a.m.
PSYO 625-001  PSYO 001 Internship Preparation  W1-2  Restricted to the Graduate Clinical Psychology Program. Credit will be granted for only one of PSYO 625 or PSYO 525. [0-0-1]  Seminar  In Person Learning  Mon  11:00 a.m. - 2:00 p.m.

PSYO 630-C_001  PSYO C C_001 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-E_201  PSYO E E_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-G_001  PSYO G G_001 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-H_201  PSYO H H_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-I_201  PSYO I I_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-K_201  PSYO K K_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-L_201  PSYO L L_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-N_001  PSYO N N_001 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-P_201  PSYO P P_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-Q_201  PSYO Q Q_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-R_201  PSYO R R_201 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-S_001  PSYO S S_001 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-T_001  PSYO T T_001 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 630-Y_001  PSYO Y Y_001 Clinical Psychology Practicum (Doctoral)  W1-2  Focus on clinical skills. Students work under the supervision of a clinical faculty member. Training contracts are established at the start of the term. Restricted to the Graduate Clinical Psychology Program. The credit value for this course will be determined in consultation with the student prior to the registration.  Experiential  In Person Learning  Arranged  Arranged

PSYO 639-001  PSYO 001 Doctoral Dissertation  W1  Pass/Fail.  Thesis  In Person Learning  Arranged  Arranged

PSYO 669-001  PSYO 001 Doctoral Dissertation  W1-2  Pass/Fail.  Thesis  In Person Learning  Arranged  Arranged

PSYO 730-001  PSYO 001 Clinical Psychology Internship  W1-2  Pass/Fail.  Experiential  In Person Learning  Arranged  Arranged
SECH_O 400-001  SECH_O 001  Applied Health Economics  WS  Methods to assess 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.  Lecture  In Person Learning  Thu  2:00 p.m. - 5:00 p.m.

SECH_O 500-001  SECH_O 001  Applied Health Economics  WS  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.  Lecture  In Person Learning  Thu  2:00 p.m. - 5:00 p.m.

SOCI_O 111-001  SOCI_O 001  Introduction to Sociology  WS  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? [3-0-0]  Lecture  In Person Learning  Mon Wed  2:00 p.m. - 3:30 p.m.

SOCI_O 111-002  SOCI_O 002  Introduction to Sociology  WS  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? [3-0-0]  Lecture  In Person Learning  Mon Wed  6:30 p.m. - 8:00 p.m.

SOCI_O 209-001  SOCI_O 001  Foundations of Sociological Thought  WS  Foundational ideas in the historical development of sociological thought. Ways in which these ideas have influenced new generations of sociologists. [3-0-0] Prerequisite: SOCI 111.  Lecture  In Person Learning  Mon Wed  11:00 a.m. - 12:30 p.m.

SOCI_O 212-001  SOCI_O 001  Sociology of Race and Ethnicity  WS  Key concepts and theoretical ideas of race and ethnicity; how race and ethnicity shape power, cultural expressions, identities, and resistance movements. [3-0-0] Prerequisite: SOCI 111.  Lecture  In Person Learning  Tue Thu  12:30 p.m. - 2:00 p.m.

SOCI_O 228-001  SOCI_O 001  Sociology of the Anthropocene  WS  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 228E. [3-0-0] Prerequisite: SOCI 111.  Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

SOCI_O 249-001  SOCI_O 001  Crime and Society  WS  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. [3-0-0] Prerequisite: SOCI 111.  Lecture  In Person Learning  Wed Fri  3:30 p.m. - 5:00 p.m.

SOCI_O 291-001  SOCI_O 001  Fundamentals of Sociological Research  WS  Overview of quantitative and qualitative research designs and methodologies. Topics include sampling, operationalization, ethics, data collection and analysis, scientific and sociological literacy. Credit will be granted for only one of SOCI 291 or SOCI 271. [3-0-0] Prerequisite: SOCI 111.  Lecture  In Person Learning  Wed Fri  11:00 a.m. - 3:30 p.m.

SOCI_O 309-101  SOCI_O 001  Sociology of Race and Ethnicity  WS  Social, historical, cultural, and political roots of violence in intimate relations. Primary focus on women, children and the elderly. [3-0-0] Prerequisite: SOCI 111 and third-year standing.  Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

SOCI_O 374-001  SOCI_O 001  Sexuality, Law, and Society  WS  Examination of government, control, and privacy. Theories and concepts from the interdisciplinary field of surveillance and power. Surveillance as a social phenomenon, involving differences in power and visibility. How surveillance is related to governance, control, and privacy. Equivalency: SOCI 212.  Lecture  In Person Learning  Tue Thu  11:00 a.m. - 12:30 p.m.

SOCI_O 376-001  SOCI_O 001  Classical Sociological Theory  WS  Classical sociological theories and their relationship to methodological issues. Focus on the procedures by which sociological explanations are made. Credit will be granted for only one of SOCI 376 or SOCI 375. [3-0-0] Prerequisite: SOCI 209 and third-year standing.  Lecture  In Person Learning  Tue Thu  9:30 a.m. - 11:00 a.m.

SOCI_O 395-201  SOCI_O 001  Sociological Methods: Qualitative Research  WS 2  The role of fear in the production, control, and management of individuals and societies. [3-0-0] Prerequisite: SOCI 111 and third-year standing. Seminar  In Person Learning  Fri  11:00 a.m. - 2:00 p.m.

SOCI_O 412-001  SOCI_O 001  Sociology of Fear  WS  The role of fear in the production, control, and management of individuals and societies. [3-0-0] Prerequisite: SOCI 111 and third-year standing. Seminar  In Person Learning  Fri  11:00 a.m. - 2:00 p.m.

SOCI_O 413-001  SOCI_O 001  Theories of Social Justice and Inequality  WS  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 492 or SOCI 496 when on the same topic. [2-0-1] Prerequisite: SOCI 111 and third-year standing. Seminar  In Person Learning  Tue Thu  2:00 p.m. - 5:00 p.m.

SOCI_O 456-001  SOCI_O 001  Sociology of Elites  WS  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? [3-0-0] Prerequisite: SOCI 111 and third-year standing.  Seminar  In Person Learning  Mon Wed  2:00 p.m. - 3:30 p.m.

SOCI_O 492-001  SOCI_O 001  Surveillance and Society  WS  Surveillance as a social phenomenon, involving differences in power and visibility. How is surveillance related to governance, control, and privacy? How does it influence social relations, power, and politics? Equivalency: MGMT 492. [3-0-0] Prerequisite: SOCI 111 and third-year standing.  Seminar  In Person Learning  Tue Thu  12:30 p.m. - 2:00 p.m.

SOCW_O 511-001  SOCW_O 001  Introduction to Social Work  WS  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.  Lecture  In Person Learning  Mon  11:00 a.m. - 2:00 p.m.

SOCW_O 511-002  SOCW_O 002  Introduction to Social Work  WS  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.  Lecture  In Person Learning  Mon  11:00 a.m. - 2:00 p.m.

SOCW_O 512-001  SOCW_O 001  Theories and Interventions for Clinical Social Work  WS  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.  Lecture  In Person Learning  Mon Tue  11:00 a.m. - 2:00 p.m.

SOCW_O 512-002  SOCW_O 002  Theories and Interventions for Clinical Social Work  WS  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.  Lecture  In Person Learning  Wed  11:00 a.m. - 2:00 p.m.

SOCW_O 514-001  SOCW_O 001  Diversity and Critical Reflexive Practice  WS  Restricted to students in the M.S.W. program.  Lecture  In Person Learning  Wed  2:00 p.m. - 5:00 p.m.

SOCW_O 514-002  SOCW_O 002  Diversity and Critical Reflexive Practice  WS  Restricted to students in the M.S.W. program.  Lecture  In Person Learning  Thu  11:00 a.m. - 2:00 p.m.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
<th>Schedule</th>
<th>Mode</th>
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<tbody>
<tr>
<td>SOCW 517-001</td>
<td>Social Work and Indigenous Peoples in Canada</td>
<td>WS</td>
<td>Overview of historical and current issues confronting social work with First Nations, Mifs, 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>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<td>Social Work and Indigenous Peoples in Canada</td>
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<td>Overview of historical and current issues confronting social work with First Nations, Mifs, 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>
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<td>In Person Learning</td>
<td>Wed</td>
<td>2:00 p.m. - 5:00 p.m.</td>
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<tr>
<td>SOCW 517-003</td>
<td>Social Work and Indigenous Peoples in Canada</td>
<td>WS</td>
<td>Overview of historical and current issues confronting social work with First Nations, Mifs, 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>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>11:00 a.m. - 2:00 p.m.</td>
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<tr>
<td>SOCW 519-P03</td>
<td>Social Work Field Education I</td>
<td>WS-2</td>
<td>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.</td>
<td>Experiential</td>
<td>In Person Learning</td>
<td>Arranged</td>
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<tr>
<td>SOCW 551-001</td>
<td>Advanced Clinical Social Work Theory and Practice</td>
<td>WS</td>
<td>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.</td>
<td>Lecture</td>
<td>In Person Learning</td>
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<td>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.</td>
<td>Lecture</td>
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<td>Tue</td>
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<td>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.</td>
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<td>In Person Learning</td>
<td>Thu</td>
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<tr>
<td>SOCW 553-002</td>
<td>Research Knowledge and Evidence in Clinical Soc Wa</td>
<td>WS</td>
<td>Knowledge and skills for utilizing empirical evidence to guide clinical social work practice. Prerequisite: Restricted to students in the M.S.W. program.</td>
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<td>Wed</td>
<td>5:00 p.m. - 8:00 p.m.</td>
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<tr>
<td>SOCW 554-001</td>
<td>Mental Health and Mental Illness</td>
<td>WS</td>
<td>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.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon</td>
<td>5:00 p.m. - 8:00 p.m.</td>
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<td>Lecture</td>
<td>In Person Learning</td>
<td>Wed</td>
<td>11:00 a.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>SOCW 554-003</td>
<td>Mental Health and Mental Illness</td>
<td>WS</td>
<td>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.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Thu</td>
<td>2:00 p.m. - 5:00 p.m.</td>
</tr>
<tr>
<td>SOCW 559-P03</td>
<td>Social Work Field Education II</td>
<td>WS-2</td>
<td>Provides 2nd year Foundational and Advanced One-Year track students an opportunity to apply and integrate theory and practice in clinical social work practice settings. Pass/Fail. Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Experiential</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
</tr>
<tr>
<td>SOCW 598-001</td>
<td>Graduate Paper</td>
<td>WS</td>
<td>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.</td>
<td>Independent Study</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
</tr>
<tr>
<td>SOCW 598-003</td>
<td>Graduate Paper</td>
<td>WS-2</td>
<td>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.</td>
<td>Independent Study</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
</tr>
<tr>
<td>SOCW 599-001</td>
<td>Thesis</td>
<td>WS</td>
<td>An independent research or scholarly project which aims to develop knowledge and practice implications for clinical social work practice. Pass/Fail. Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Thesis</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
</tr>
<tr>
<td>SOCW 599-003</td>
<td>Thesis</td>
<td>WS</td>
<td>An independent research or scholarly project which aims to develop knowledge and practice implications for clinical social work practice. Pass/Fail. Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Thesis</td>
<td>In Person Learning</td>
<td>Arranged</td>
<td>Arranged</td>
</tr>
<tr>
<td>SPAN 101-001</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>1:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>SPAN 101-002</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>2:00 p.m. - 3:00 p.m.</td>
</tr>
<tr>
<td>SPAN 101-003</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>9:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>SPAN 101-004</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>2:00 p.m. - 3:00 p.m.</td>
</tr>
<tr>
<td>SPAN 101-005</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>4:00 p.m. - 5:00 p.m.</td>
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<td>SPAN 101-006</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>1:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>SPAN 101-007</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>3:00 p.m. - 4:00 p.m.</td>
</tr>
<tr>
<td>SPAN 101-008</td>
<td>Spanish I</td>
<td>WS</td>
<td>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). Prerequisite: Restricted to students in the M.S.W. program.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>9:00 a.m. - 10:00 a.m.</td>
</tr>
<tr>
<td>SPAN 201-001</td>
<td>Advanced Beginners’ Spanish I</td>
<td>WS</td>
<td>Spanish, 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.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>1:00 p.m. - 2:00 p.m.</td>
</tr>
<tr>
<td>SPAN 201-002</td>
<td>Advanced Beginners’ Spanish I</td>
<td>WS</td>
<td>Spanish, 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.</td>
<td>Lecture</td>
<td>In Person Learning</td>
<td>Mon Wed Fri</td>
<td>10:00 a.m. - 11:00 a.m.</td>
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</table>
SPAN_O 201-003  SPAN_O 003  Advanced Beginners’ Spanish I  WS
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
11:00 a.m. - 12:00 p.m.

SPAN_O 301-001  SPAN_O 001  Intermediate Spanish I  WS
11:00 a.m. - 12:00 p.m.

SPAN_O 303-001  SPAN_O 001  Conversational Spanish  WS
Development of speaking and listening skills through active learning activities and discussions about a variety of topics that may include social media, streaming programs, movies, and current events. Corresponds to level B1 of the Common European Framework of Reference for Languages (CEFR). Prerequisite: SPAN 202. Lecture  In Person Learning  Tue Thu
9:30 a.m. - 11:00 a.m.

SPAN_O 419-001  SPAN_O 001  Introduction to Translation and Interpretation II  WS
9:30 a.m. - 11:00 a.m.

STAT_O 124-001  STAT_O 001  Business Statistics  WS
Introduction to statistical reasoning and basic business statistics. Topics include frequency distributions, central tendency, dispersion, probability, sampling theory, statistical inference, hypothesis testing, confidence intervals, and the use of statistical software packages. Prerequisite: One of MATH 101, MATH 103. Lecture  In Person Learning  Tue Thu
12:30 p.m. - 2:00 p.m.

STAT_O 203-001  STAT_O 001  Introduction to Probability  WS
Applied statistics for students with a first-year calculus background. Estimation and testing of hypotheses, problem formulation, models and basic methods in analysis of variance, linear regression, and non-parametric methods. Statistical concepts and probability are presented as a basis for such procedures. Prerequisite: One of MATH 101, MATH 103. Lecture  In Person Learning  Wed Fri
11:00 a.m. - 12:00 p.m.

STAT_O 230-001  STAT_O 001  Introductory Statistics  WS
Multivariate normal distribution, t- and F-tests. Prerequisite: One of MATH 101, MATH 103. Lecture  In Person Learning  Mon Wed
2:00 p.m. - 3:30 p.m.

STAT_O 303-001  STAT_O 001  Intermediate Probability  WS
Development of broad guidelines for a comprehensive approach to data analysis with a focus on communicating statistical ideas from planning experiments to the presentation of results. Topics include criteria for selection of suitable methodologies, data preparation, outlier detection, and exploratory data analysis. Credit will be granted for only one of DATA 300 or STAT 402 when the subject matter is of the same nature. Prerequisite: One of STAT 301, STAT 302. Lecture  In Person Learning  Mon Wed
12:30 p.m. - 2:00 p.m.

STAT_O 400-001  STAT_O 001  Statistical Communication and Consulting  WS
Statistical concepts and methods in environmental science and management. Scientific problem-solving using statistical methods. Integration of the formulation of objectives, study design, and quantitative methods appropriate for the design. The role and use of statistical software packages. Prerequisite: DATA 310. Lecture  In Person Learning  Tue Thu
2:00 p.m. - 3:30 p.m.

STAT_O 486-001  STAT_O 001  Environmetrics  WS
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. Lecture  In Person Learning  Wed Fri
9:30 a.m. - 11:00 a.m.

STAT_O 547-1_801  STAT_O I 1 001  Topics in Statistics  WS
Intensive language immersion course to enhance and improve proficiency, focused on language pertaining to topics specific to a particular language or domain. The language of instruction is Spanish. May be offered on the land. Restricted to students in the Bachelor of St’át’imc Language Fluency program. Lecture Online Learning  Arranged

STMIC_O 433-001  STMIC_O 001  Special Topics in Language Practice and Pedagogy  WS
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. Lecture  In Person Learning  Mon Wed
11:00 a.m. - 12:30 p.m.

SUST_O 100-001  SUST_O 001  Sustainability: People, Place, and Process  WS
Introduces key concepts, topics, and theories in sustainability. Lecture  In Person Learning  Mon Wed
3:30 p.m. - 5:00 p.m.

SUST_O 104-101  SUST_O 101  Introduction to Environmental Humanities  WS
Explores the contribution of historical, philosophical, anthropological, and literary scholarship to elucidation and mitigation of a specific environmental issue. Lecture  In Person Learning  Tue Thu
3:30 p.m. - 5:00 p.m.

SUST_O 104-001  SUST_O 001  Introduction to Environmental Humanities  WS
Explores the contribution of historical, philosophical, anthropological, and literary scholarship to elucidation and mitigation of a specific environmental issue. Lecture  In Person Learning  Mon Wed
3:30 p.m. - 5:00 p.m.

SUST_O 200-001  SUST_O 001  Application, Practice and Management Approaches  WS
Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Lecture  In Person Learning  Mon Wed
5:00 p.m. - 6:30 p.m.

SUST_O 201-001  SUST_O 001  Introduction to Research in Sustainability and GeWS
Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Lecture  In Person Learning  Mon
12:00 p.m. - 2:00 p.m.

SUST_O 201-001  SUST_O 001  Introduction to Research in Sustainability and GeWS
Introduces skills required to conduct, critically assess, and present research in geography and sustainability. Lecture  In Person Learning  Fri
10:00 a.m. - 11:00 a.m.
SUST_O 201-002  SUST_O 002 Introduction to Research in Sustainability and GIS  
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 SUST 201, GEOG 201, or GEOG 371. [2.0-0-1] Equivalency: GEOG 201  
Discussion  
In Person Learning  
Wed  
12:00 p.m. - 1:00 p.m.

SUST_O 202-001  SUST_O 001 Community Service Learning  
WS-2  
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. [0-0-1] Prerequisite: SUST 202.  
Discussion  
In Person Learning  
Tue (Alternate weeks)  
12:00 p.m. - 2:00 p.m.

SUST_O 302-001  SUST_O 001 Community Service Learning  
WS-2  
Apply sustainability learning and knowledge to the broader community through a self-directed project  
invoking at least 30 hours of community service. Development of personal sustainability goals. Restricted to  
students in the Bachelor of Sustainability program. [0-0-1] Prerequisite: SUST 202.  
Experiential  
In Person Learning  
Tue (Alternate weeks)  
12:00 p.m. - 2:00 p.m.

SUST_O 302-001  SUST_O 001 Community Service Learning  
WS-2  
Apply sustainability learning and knowledge to the broader community through a self-directed project  
invoking at least 30 hours of community service. Development of personal sustainability goals. Restricted to  
students in the Bachelor of Sustainability program. [0-0-1] Prerequisite: SUST 202.  
Experiential  
In Person Learning  
Tue (Alternate weeks)  
12:00 p.m. - 2:00 p.m.

SUST_O 304-001  SUST_O 001 Place-based Methods for Interdisciplinary Reuse WS  
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. [1-0-2]  
Prerequisite: SUST 201.  
Lecture  
In Person Learning  
Mon-Thur  
8:00 a.m. - 9:30 a.m.

SUST_O 304-001  SUST_O 001 Place-based Methods for Interdisciplinary Reuse WS  
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. [1-0-2]  
Prerequisite: SUST 201.  
Lecture  
In Person Learning  
Mon-Thur  
8:00 a.m. - 9:30 a.m.

THTR_O 101-001  THTR_O 001 Performance Improvisation WS  
A physical approach to improvisation as it relates to the creation of live performance events. [3 hours/week  
studio]  
Studio  
In Person Learning  
Tue  
9:00 a.m. - 12:00 p.m.

THTR_O 103-001  THTR_O 001 Acting for Stage and Screen WS  
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 103 or FILM 103. [3 hours/week studio] Equivalency: FILM 103  
Studio  
In Person Learning  
Mon  
2:00 p.m. - 5:00 p.m.

THTR_O 104-001  THTR_O 001 The Art of Public Speaking WS  
Verbal and nonverbal communication skills as well as knowledge of basic communications 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_O 180-001  THTR_O 001 Theatre Appreciation: The Power of Live Perform WS  
Explores how live performances (stand-up comedy, circus, puppetry, performance art, theatre, dance and  
music) engage an audience and reveal the shifting dynamics of public communication.  
Lecture  
In Person Learning  
Fri  
2:00 p.m. - 5:00 p.m.

THTR_O 303-001  THTR_O 001 Narrative Film Production WS  
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 THTR 303, ARTH 303, CULT 303, or  
WRLD 303. Prerequisite: Third-year standing. Equivalency: CULT 303; FILM 303  
Studio  
In Person Learning  
Thu  
12:00 p.m. - 3:00 p.m.

THTR_O 309-001  THTR_O 001 Performance Art: Global Perspectives WS  
A theoretical study of performance art in the context of world cultures and world politics. Credit will be  
granted for only one of THTR 309, ARTH 309, CULT 309, or WRLD 309. Prerequisite: Third-year standing. Equivalency: ARTH 309, CULT 309, WRLD 309  
Lecture  
In Person Learning  
Wed  
2:00 p.m. - 5:00 p.m.

THTR_O 411-001  THTR_O 001 Performance Studies WS  
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. [2-1-0] Prerequisite: Third-year standing. Equivalency: CULT411, WRLD411  
Lecture  
In Person Learning  
Tue  
2:00 p.m. - 5:00 p.m.

VGRS_O 509-001  VGRS_O 001 Visiting Graduate Research Students WS  
Invisiting Graduate Research Students  
Independent Study  
In Person Learning  
Arranged  
Arranged

VGRS_O 509-003  VGRS_O 001 Visiting Graduate Research Students WS-2  
Visiting Graduate Research Students  
Independent Study  
In Person Learning  
Arranged  
Arranged

VISA_O 090-001  VISA_O 001 Safety Training WS  
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  
9:00 a.m. - 1:00 p.m.

VISA_O 090-002  VISA_O 001 Safety Training WS  
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  
Tue  
1:00 p.m. - 5:00 p.m.

VISA_O 090-003  VISA_O 001 Safety Training WS  
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  
Wed  
9:00 a.m. - 1:00 p.m.

VISA_O 090-004  VISA_O 001 Safety Training WS  
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  
Fri  
1:00 p.m. - 5:00 p.m.

VISA_O 090-005  VISA_O 001 Safety Training WS  
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 (Alternate weeks)  
9:00 a.m. - 1:00 p.m.

VISA_O 090-006  VISA_O 001 Safety Training WS  
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  
Tue  
1:00 p.m. - 5:00 p.m.

VISA_O 090-007  VISA_O 001 Safety Training WS  
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  
Wed  
9:00 a.m. - 1:00 p.m.

VISA_O 090-008  VISA_O 001 Safety Training WS  
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  
Fri  
1:00 p.m. - 5:00 p.m.
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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<tr>
<td>VISA 090-009</td>
<td>009</td>
<td>Safety Training</td>
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<tr>
<td>VISA 101-001</td>
<td>001</td>
<td>Drawing and Two-Dimensional Art Practices I</td>
</tr>
<tr>
<td>VISA 102-002</td>
<td>002</td>
<td>Drawing and Two-Dimensional Art Practices I</td>
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<td>Drawing and Two-Dimensional Art Practices I</td>
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<td>VISA 104-001</td>
<td>001</td>
<td>Three-Dimensional Art Practices I</td>
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<td>VISA 105-001</td>
<td>001</td>
<td>Introduction to Digital Media I</td>
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<td>VISA 106-101</td>
<td>010</td>
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<td>VISA 106-102</td>
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<td>016</td>
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<td>VISA 137-001</td>
<td>001</td>
<td>Introduction to Art I</td>
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<td>VISA 201-001</td>
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<td>Painting I</td>
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<td>VISA 201-002</td>
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<td>Painting I</td>
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<td>VISA 203-001</td>
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<td>Printmaking: Screenprinting I</td>
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<td>VISA 205-001</td>
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<td>Sculpture I</td>
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<td>VISA 244-001</td>
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<td>Photography I</td>
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<td>VISA 255-001</td>
<td>001</td>
<td>Introduction to Printmaking: Linocut and Letter</td>
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<td>VISA 261-001</td>
<td>001</td>
<td>Video I</td>
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<tr>
<td>VISA 269-001</td>
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<td>Strategies in Digital Art: Visual Communication</td>
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<tr>
<td>VISA 269-002</td>
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<td>Strategies in Digital Art: Visual Communication</td>
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<td>VISA 282-001</td>
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<td>Drawing III</td>
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<td>VISA 300-W_001</td>
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<td>Advanced Practice in Drawing</td>
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<td>VISA 312-A_001</td>
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<td>Advanced Practice in Painting</td>
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<td>VISA 323-A_001</td>
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<td>Advanced Practice in Sculpture</td>
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<td>VISA 336-A_001</td>
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<td>Advanced Practice in Printmaking</td>
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<td>VISA 363-W_001</td>
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<td>Advanced Practice in Photography</td>
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