SOC APPROVALS
March 12, 2025

The following proposals were approved at the March 12, 2025 meeting of the Subcommittee on Undergraduate Academic Courses (SOC).

FACULTY OF ARTS AND HUMANITIES

DEPARTMENT OF CLASSICAL STUDIES

Course Introduction – Effective September 1, 2025, the following course be introduced:

CLASSICAL STUDIES 3315F/G
SEXUALITY IN ANCIENT GREECE

Course Description
This course gives students insight into ancient Greek sexuality and categories of gender using primary sources. The wide body of artistic evidence available from the ancient world on this topic (in the form of sculpture, vases, mosaics, and everyday objects) is supplemented by close reading of literary sources in translation.

Antirequisite(s): Classical Studies 3300F/G.

Extra Information: 3 hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

CLASSICAL STUDIES 3355F/G
SEXUALITY IN ANCIENT ROME

Course Description
This course gives honours-level students insight into sexuality and categories of gender in ancient Rome using primary sources. It draws on a wide range of artistic and archaeological evidence, including vase-paintings, sculpture, and everyday objects, supplemented with close readings of literary sources in translation.

Antirequisite(s): Classical Studies 3300F/G.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

CLASSICAL STUDIES 3890F/G
MEDIEVAL MANUSCRIPTS

Course Description
Using physical and digital resources, this course will familiarize students with the investigation of medieval manuscripts, focusing on questions of construction, contents, contexts, and conservation. It will introduce medieval scripts, the description of a medieval manuscript, issues of provenance and date, and the decoration used.

Antirequisites: Classical Studies 3906F/G if taken in 2023-24; Medieval Studies 3022F/G.

Extra Information: 3 lecture hours. Cross-listed with Medieval Studies 3022F/G.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDIEVAL STUDIES 3022F/G
INTRODUCTION TO MEDIEVAL MANUSCRIPTS

Course Description
Using materials ~~available~~ in the Rare Books Room and ~~from~~ private collections, this course will familiarize students with ~~the investigation of~~ medieval manuscripts. It will introduce ~~medieval scripts, the description of a medieval manuscript,~~ issues of provenance**,** ~~and~~ date~~,~~ and ~~the decoration used~~ **style**. Students will **also** consider the preparation of ink and pigments~~,~~ and the kinds of illumination and decoration ~~available~~ **employed** through**out** the medieval period.

Antirequisite(s): Classical Studies 3890F/G, Classical Studies 3906F/G if taken in 2023-24.

Prerequisite(s): 70% or higher in 1.0, Medieval Studies 1022, or both Medieval Studies 1025A/B and Medieval Studies 1026A/B, or the former Medieval Studies 1020E.

Extra Information: 3 hours. **Cross-listed with Classical Studies 3890F/G.**
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN GREEK AND ROMAN HISTORY

Admission Requirements

Completion of first-year requirements. Classical Studies 1000 is recommended. With permission of the Department, students may have the Classical Studies 1000 requirement waived in those courses at the 2000-level or above for which it is normally a prerequisite.

Module

4.0 courses:

2.0 courses: Classical Studies 3410E, Classical Studies 3450E.
2.0 courses from: Classical Studies 2300, Classical Studies 2301A/B, Classical Studies 2350A/B, Classical Studies 2440A/B, Classical Studies 2480A/B, Classical Studies 2500A/B, Classical Studies 2525A/B, Classical Studies 2700A/B, Classical Studies 2840A/B, Classical Studies 3010F/G, Classical Studies 3050F/G, Classical Studies 3151F/G, Classical Studies 3181F/G, Classical Studies 3210F/G, Classical Studies 3300F/G, Classical Studies 3302E, Classical Studies 3303F/G, Classical Studies 3310F/G, **Classical Studies 3315F/G,** Classical Studies 3350F/G, **Classical Studies 3355F/G,** Classical Studies 3490F/G, Classical Studies 3515F/G, Classical Studies 3525F/G, Classical Studies 3530E, Classical Studies 3550E, Classical Studies 3551F/G, Classical Studies 3552F/G, Classical Studies 3553F/G, Classical Studies 3555E, Classical Studies 3585F/G, Classical Studies 3636F/G, Classical Studies 3676F/G, Classical Studies 3850F/G, Classical Studies 4410F/G, Classical Studies 4450F/G, Classical Studies 4580F/G, Classical Studies 4585F/G, the former Classical Studies 3200F/G (with a maximum of 1.0 course from the 2000-2999 level).

Appropriate course substitutions may be made with the permission of the Department.

DEPARTMENT OF PHILOSOPHY

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHILOSOPHY 1230A/B
REASONING AND CRITICAL THINKING

Course Description
An introduction to ~~the~~ basic principles of reasoning and critical thinking ~~designed to enhance the~~ **aimed at enhancing** student~~'~~s**'** ability~~y~~**ies** to evaluate ~~various~~ forms of reasoning ~~found~~ in everyday life ~~as well as~~ **and** in academic disciplines. ~~The course will deal with such topics as~~ **Topics may include** inductive and deductive reasoning, ~~the nature and function of~~ definitions, ~~types of fallacies, the~~ use and misuse of statistics, and ~~the rudiments of logic~~ **fallacies and biases**. Primarily for first year students.

Antirequisite(s) at Main campus: Philosophy 1000E, Philosophy 1200.
Antirequisite(s) at Huron campus: Philosophy 1200.

Extra Information: ~~2~~**3** lecture hours~~, 1 tutorial hour (Main); 3 lecture hours (Huron)~~.
Course Weight: 0.50

Administrative Note: Philosophy 1230A/B is also offered at Huron University College. Huron University College has agreed that the Course Description revisions apply.

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHILOSOPHY 2037F/G
PHILOSOPHY AND ARTIFICIAL INTELLIGENCE

Course Description
Will robots take all our jobs? Will humans become cyborgs? Will nano-technology revolutionize medicine? As we rely more on machines, they are changing how we interact with the world and one another. In this course we will consider the impact of technology on our current lives, and on our future.

Extra Information: ~~2~~**3** lecture hours~~, 1 tutorial hour~~.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHILOSOPHY 2082F/G
INTRODUCTION TO THE PHILOSOPHY OF FOOD

Course Description
A philosophical reflection on food and our current food system. Issues may include food and climate change, food justice, local and global hunger and food insecurity, the industrization of food and agriculture, the moral and political dimensions of genetically modified food, or the treatment of animals and lab cultured meat.

Antirequisite(s): The former Philosophy 2010F/G, the former Philosophy 3010F/G.

Extra Information: ~~2~~**3** lecture hours~~, 2 tutorial hours, 0.5 course~~.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHILOSOPHY 2715F/G
HEALTH CARE ETHICS

Course Description
An examination of key concepts in health care ethics, such as respect for patient autonomy, medical paternalism, patient competence, justice in health care, "death with dignity," "sanctity of life," commodifying human life. Goals are to understand these ideas and how to apply them to practical issues in health care.

Antirequisite(s): Health Sciences 2610F/G.

Extra Information: ~~2~~**3** lecture hours~~, 1 tutorial hour~~.
Course Weight: 0.50

DEPARTMENT OF VISUAL ARTS

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

MUSEUM AND CURATORIAL STUDIES 3620A/B/Y
INTRODUCTION TO EXHIBITION DESIGN & MUSEUM MANAGEMENT

Course Description
This course provides a "behind the scenes" study of museums. Working with community partners, students learn about collections management, conservation, funding strategies and fundraising, cultural policy, and graphic design for museums. The course promotes experiential learning and provides vital transferable skills for students aiming to work in the cultural sector.

Antirequisite(s): the former VAH 3383A/B/Y, the former VAS 3383A/B/Y.

Prerequisite(s): 1.0 from Art History 1640 or two of Art History 1641A/B, Art History 1642A/B, Art History 1644A/B, Art History 1646A/B, Art History 1648A/B, Art History 1649A/B or 1.0 essay course from Arts and Humanities, FIMS, or Social Science, or permission of the Department.

Extra Information: 3 hours, lecture, blended or online format.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

STUDIO ART 4603
EXPERIENTIAL LEARNING

Course Description
The course offers BFA students the opportunity for studio visits of established artists, field trips to galleries in and outside London, the coordinating and organizing of exhibitions, artists' talks, high school presentations, etc. It is specifically intended to round out the in-studio practice taught in SA 4605.

Prerequisite(s): Minimum 1.5 3000-level studio courses, plus Studio Art 2602A/B/Y, Studio Art 3602A/B/Y, or the former VAS 2282A/B and the former VAS 3382A/B. Acceptance into SA 4605, or permission of Department.
Corequisite(s): Studio Art 4605.

Extra Information: lecture, blended or online format. NOTE: This course will be assigned to the Undergraduate Chair in the Department of Visual Arts.
Course Weight: 1.00

Course Introduction – Effective September 1, 2025, the following course be introduced:

ART HISTORY 4609A/B
ART IN THE CITY

Course Description
Students study and experience first-hand the vibrant artistic culture of a select city. Emphasis is placed on artistic movements, key figures, and museums and galleries that contribute to the historical and contemporary life of that city. Includes fee for a mandatory field trip, which may occur during reading week.

Antirequisite(s): Museum and Curatorial Studies 4609A/B, Studio Art 4609A/B, the former Studio Art 4603.

Prerequisite(s): Registration in years 3 or 4 of a Department of Visual Arts module, or permission of the Department.

Extra Information: 3 hours: seminar, workshop, lecture, blended or online format. Field trip to selected city, 5 days minimum. Cross-listed with Museum and Curatorial Studies 4609A/B and Studio Art 4609A/B.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

MUSEUM AND CURATORIAL STUDIES 3674F/G
SUSTAINABILITY AND ART

Course Description
This course explores the growing field of art works and art writing related to the environment, ecology, and sustainability. Students will learn how artists and museums have considered, responded to, and proposed solutions for complex environmental issues such as climate change, environmental justice, waste, and energy production.

Antirequisite(s): Art History 3674F/G.

Prerequisite(s): 1.0 from Art History 1640 or two of Art History 1641A/B, Art History 1642A/B, Art History 1644A/B, Art History 1646A/B, Art History 1648A/B, Art History 1649A/B or 1.0 essay course from Arts and Humanities, FIMS, or Social Science, or permission of the Department.

Extra Information: 3 hours: lecture, blended, or online format. Cross-listed with Art History 3674F/G.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

MUSEUM AND CURATORIAL STUDIES 4609A/B
ART IN THE CITY

Course Description
Students study and experience first-hand the vibrant artistic culture of a select city. Emphasis is placed on artistic movements, key figures, and museums and galleries that contribute to the historical and contemporary life of that city. Includes fee for a mandatory field trip, which may occur during reading week.

Antirequisite(s): Art History 4609A/B, Studio Art 4609A/B, the former Studio Art 4603.

Prerequisite(s): Registration in years 3 or 4 of a Department of Visual Arts module, or permission of the Department.

Extra Information: 3 hours: seminar, workshop, lecture, blended or online format. Field trip to selected city, 5 days minimum. Cross-listed with Art History 4609A/B and Studio Art 4609A/B.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

STUDIO ART 4609A/B
ART IN THE CITY

Course Description
Students study and experience first-hand the vibrant artistic culture of a select city. Emphasis is placed on artistic movements, key figures, and museums and galleries that contribute to the historical and contemporary life of that city. Includes fee for a mandatory field trip, which may occur during reading week.

Antirequisite(s): Art History 4609A/B, Museum and Curatorial Studies 4609A/B, the former Studio Art 4603.

Prerequisite(s): Registration in years 3 or 4 of a Department of Visual Arts module, or permission of the Department.

Extra Information: 3 hours: seminar, workshop, lecture, blended or online format. Field trip to selected city, 5 days minimum. Cross-listed with Art History 4609A/B and Museum and Curatorial Studies 4609A/B.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

ART HISTORY 3674F/G
SUSTAINABILITY AND ART

Course Description
This course explores the growing field of art works and art writing related to the environment, ecology, and sustainability. Students will learn how artists and museums have considered, responded to, and proposed solutions for complex environmental issues such as climate change, environmental justice, waste, and energy production.

Antirequisite(s): Museum and Curatorial Studies 3674F/G.

Prerequisite(s): 1.0 from Art History 1640 ~~or the former VAH 1040~~ or two of Art History 1641A/B, **Art History 1642A/B, Art History 1644A/B, Art History 1646A/B, Art History 1648A/B, Art History 1649A/B** ~~– 1649A/B or the former VAH 1041A/B – 1045A/B~~ or 1.0 essay course from Arts and Humanities, FIMS, or Social Science, or permission of the Department.

Extra Information: 3 hours: lecture, blended, or online format. **Cross-listed with Museum and Curatorial Studies 3674F/G.**
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MUSEUM AND CURATORIAL STUDIES 2620A/B
INTRODUCTION TO ~~GALLERY,~~ MUSEUM ~~&~~ AND CURATORIAL STUDIES

(Short Title: Introduction to Museum Studies)

Course Description
This course ~~introduces to the ways that museums function. Class materials cover~~ **is a behind the scenes look at** different kinds of museums, collections, and archives ~~through case studies, debates, and problem solving. The class includes both the study of existing museums, collections, and exhibitions as well as participatory assignments and curatorial work~~. Students learn about collections management, conservation, funding, policy, and design for museums and develop skills to work in the cultural sector.

Antirequisite(s): The former Museum and Curatorial Studies 3620A/B/Y.

Prerequisite(s): 1.0 from Art History 1640 or two of Art History 1641A/B, Art History 1642A/B, Art History 1644A/B, Art History 1646A/B, Art History 1648A/B, Art History 1649A/B or 1.0 essay course from Arts and Humanities, FIMS, or Social Science, or permission of the Department.

Extra Information: 3 hours: lecture, blended, or online format.
Course Weight: 0.50

INTERFACULTY LINGUISTICS PROGRAM

Course Introduction – Effective September 1, 2025, the following course be introduced:

LINGUISTICS 1027A/B
INTRODUCTION TO LINGUISTICS

Course Description
Introduction to basic concepts and methods of modern linguistics. Topics include articulatory and acoustic phonetics, phonology, morphology, syntax and semantics. This course is a prerequisite for subsequent linguistics courses in the Department of Anthropology and/or the Linguistics program.

Antirequisite(s): Anthropology 1027A/B; Linguistics 2288A/B.

Extra Information: 3 hours.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN LINGUISTICS

Admission Requirements

Completion of first year requirements with at least 75% average and a minimum mark of 60% in 3.0 principal courses, including **Linguistics 1027A/B or** Anthropology 1027A/B and Linguistics 1028A/B. Students must consult with one of the program Co-directors prior to admission. Enrolment in this module is limited. Meeting the minimum requirements does not guarantee admission.

Module
9.0 courses:

1.0 course: Linguistics 2247A/B and Linguistics 2248A/B. At least 75% in each course is required for progression in the module.
2.5 courses: Anthropology 3339F/G, Linguistics 2242A/B, Linguistics 4247A/B, Linguistics 4248A/B, Linguistics 4490F/G.
1.0 Language course(s) to be selected in consultation with one of the Linguistics Co-directors.
1.5 courses from Formal approaches to language: Anthropology 3237A/B, Anthropology 3343A/B, Communication Sciences and Disorders 4411A/B, Communication Sciences and Disorders 4439A/B, French 2805A/B, French 2806A/B, French 3810A/B, French 3830A/B, French 4811F/G, French 4821F/G, French 4830F/G, French 4841F/G, French 4881F/G, Linguistics 2244A/B, Linguistics 3100A/B, Linguistics 3102A/B, Philosophy 3260F/G, Philosophy 3270F/G, Philosophy 4210F/G, Psychology 2134A/B, Spanish 3303A/B, Spanish 3318A/B, Spanish 3319A/B, Spanish 4415A/B.
1.5 courses from Social aspects of language: Anthropology 2245F/G, Anthropology 2249F/G, Anthropology 2251A/B, Anthropology 2252A/B, Anthropology 3243F/G, French 3870A/B, French 4040A/B, French 4850F/G, Spanish 3314F/G, Spanish 4412F/G.
1.5 additional courses from the following or any course from above not already taken: Anthropology 2246A/B, Anthropology 2250A/B, Anthropology 2253A/B, Anthropology 4412F/G, Classical Studies 2800A/B, English 3300, English 3310, French 4100F/G, Indigenous Studies 2253A/B, Linguistics 2130A/B, Linguistics 3340A/B, Linguistics 3390A/B, Philosophy 2020, Philosophy 2250, Philosophy 2260F/G, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Spanish 2121A/B, Spanish 2214A/B, Spanish 2956A/B-2960A/B, or other courses by permission of the Program, the former Philosophy 3201A/B.

Note: Some courses are offered only in alternate years, and some have specific prerequisites. Students must consult one of the Co-Directors of the Inter-Faculty Program in Linguistics when planning their module.

Module Requirements

Students who are enrolled in the Honours Specialization in Linguistics must maintain a minimum cumulative modular average of 75% with a minimum mark of 60% in each course and a passing grade in each option to progress in the module. In addition, students must attain at least 75% in Linguistics 2247A/B and Linguistics 2248A/B or the former Anthropology 2247A/B and the former Anthropology 2248A/B.

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN LINGUISTICS

Admission Requirements

Completion of first-year requirements, including **Linguistics 1027A/B or** Anthropology 1027A/B and Linguistics 1028A/B with a mark of at least 60%.

Module
6.0 courses:

2.0 courses: Anthropology 3339F/G, Linguistics 2242A/B, Linguistics 2247A/B, Linguistics 2248A/B.
1.0 courses from "Formal approaches to language": Anthropology 3237A/B, Anthropology 3343A/B, Communication Sciences and Disorders 4411A/B, Communication Sciences and Disorders 4439A/B, French 2805A/B, French 2806A/B, French 3810A/B, French 3830A/B, French 4811F/G, French 4821F/G, French 4830F/G, French 4841F/G, French 4881F/G, Linguistics 2244A/B, Linguistics 3100A/B, Linguistics 3102A/B, Philosophy 3260F/G, Philosophy 3270F/G, Philosophy 4210F/G, Psychology 2134A/B, Spanish 3303A/B, Spanish 3318A/B, Spanish 3319A/B, Spanish 4415A/B.
1.0 courses from "Social aspects of language": Anthropology 2245F/G, Anthropology 2249F/G, Anthropology 2251A/B, Anthropology 2252A/B, Anthropology 3243F/G, French 3870A/B, French 4040A/B, French 4850F/G, Spanish 3314F/G, Spanish 4412F/G.
2.0 additional courses from the following or any course from above not already taken: Anthropology 2246A/B, Anthropology 2250A/B, Anthropology 2253A/B, Anthropology 4412F/G, Classical Studies 2800A/B, English 3300, English 3310, French 4100F/G, Indigenous Studies 2253A/B, Linguistics 2130A/B, Linguistics 3340A/B, Linguistics 3390A/B, Linguistics 4490F/G, Philosophy 2020, Philosophy 2250, Philosophy 2260F/G, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Spanish 2214A/B, Spanish 2956A/B-2960A/B, or other courses by permission of the Program, the former Philosophy 3201A/B.

Note: Some courses are offered only in alternate years. Students are advised to consult one of the Co-Directors of the Inter-Faculty Program in Linguistics when planning their module.

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN LINGUISTICS

Admission Requirements

Completion of first-year requirements, including **Linguistics 1027A/B or** Anthropology 1027A/B and Linguistics 1028A/B with a mark of at least 60%.

Module
4.0 courses

1.0 courses: Linguistics 2247A/B, Linguistics 2248A/B.
0.5 course: Anthropology 3339F/G or any 3000-level course from the categories "Formal approaches to language" or "Social aspects of language" not already taken.
0.5 course from "Formal approaches to language": Anthropology 3237A/B, Anthropology 3343A/B, Communication Sciences and Disorders 4411A/B, Communication Sciences and Disorders 4439A/B, French 2805A/B, French 2806A/B, French 3810A/B, French 3830A/B, French 4811F/G, French 4821F/G, French 4830F/G, French 4841F/G, French 4881F/G, Linguistics 2242A/B, Linguistics 2244A/B, Linguistics 3100A/B, Linguistics 3102A/B, Philosophy 3260F/G, Philosophy 3270F/G, Philosophy 4210F/G, Psychology 2134A/B, Spanish 3303A/B, Spanish 3318A/B, Spanish 3319A/B, Spanish 4415A/B.
0.5 course from "Social aspects of language": Anthropology 2245F/G, Anthropology 2249F/G, Anthropology 2251A/B, Anthropology 2252A/B, Anthropology 3243F/G, French 3870A/B, French 4040A/B, French 4850F/G, Spanish 3314F/G, Spanish 4412F/G.
1.5 additional courses from the following or any course from above not already taken: Anthropology 2246A/B, Anthropology 2250A/B, Anthropology 2253A/B, Anthropology 4412F/G, Classical Studies 2800A/B, English 3300, English 3310, French 4100F/G, Indigenous Studies 2253A/B, Linguistics 2130A/B, Linguistics 3340A/B, Linguistics 3390A/B, Linguistics 4490F/G, Philosophy 2020, Philosophy 2250, Philosophy 2260F/G, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Spanish 2121A/B, Spanish 2214A/B, Spanish 2956A/B-2960A/B, or other courses by permission of the Program, the former Philosophy 3201A/B.

Note: Some courses are offered only in alternate years. Students are advised to consult one of the Co-Directors of the Inter-Faculty Program in Linguistics when planning their module.

FACULTY OF ENGINEERING

DEPARTMENT OF CHEMICAL AND BIOCHEMICAL ENGINEERING

Program Revision – Effective September 1, 2025, the following changes be made:

F. CHEMICAL ENGINEERING AND BIOMEDICAL ENGINEERING OPTION

Admission Requirements

The Chemical Engineering and Biomedical Engineering Option (Option F) is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Chemical Engineering and a BESc in Biomedical Engineering (non-accredited). Admission to Option F is competitive; meeting the minimum requirements does not guarantee admission.

Students apply to Option F while in first year through the Intent-to-Register process. The Department of Chemical and Biochemical Engineering, in collaboration with the Director of Biomedical Engineering, will accept students into Option F. To be eligible for Option F, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 70%.

Acceptance into Option F does not guarantee acceptance into the concurrent degree program. Students apply to the concurrent degree program during their second year in Engineering by the published deadline. To be eligible for the concurrent degree program, students must complete all of the requirements of the second-year program in Option F of the Chemical Engineering Program, obtaining a minimum year-weighted average (YWA) of 70% and a minimum grade of 70% in ~~Biomedical Engineering~~ **BME** 3201A/B.

Students who are not accepted into the concurrent degree program after second year will still be eligible to complete a BESc in Chemical Engineering provided that they meet the requirements for progression in Engineering. In this case, the BME 3201A/B course may count as a 0.5 technical elective in the program.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

(Three of the half courses are taken in each term as scheduled.)

Second Year Program

Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2277A/B, BME 3201A/B, CBE 2206A/B, CBE 2207A/B, CBE 2214A/B, CBE 2220A/B, CBE 2221A/B, CBE 2224A/B, CBE 2290A/B, CBE 2291A/B, Statistical Sciences 2143A/B.

Third Year Program

Biology 1001A, Biology 1002B, CBE 3307A/B, CBE 3310A/B, CBE 3315A/B, CBE 3316A/B, CBE 3318A/B, CBE 3319A/B, CBE 3322A/B, CBE 3323A/B, CBE 3324A/B, CBE 3395Y, 0.5 non-technical elective.

Fourth Year Program

Biochemistry 2280A, BME 3301A/B, BME 3303A/B, ECE 4455A/B, MME 4469A/B, Physiology 2130, 1.5 Biomedical Sciences Electives, 1.0 Healthcare Non-technical Electives, 0.5 open elective.

Fifth Year Program

BME 4400E, CBE 4421A/B, CBE 4497, ELI 4110F/G, ELI 3200A/B or ELI 3000A/B or ELI 4200A/B **or ELI 3100A/B or ELI 4300A/B**, 1.0 BME technical electives, 1.0 CBE technical electives.

Biomedical Sciences Electives (Courses that do not appear on this list require special permission):

Anatomy and Cell Biology 2200A/B, Biochemistry 3385B, Biochemistry 3386B, Biology 2382A/B, Biology 2581A/B, Chemistry 2213A/B, Chemistry 2223B, Communication Sciences and Disorders 4417A/B, Health Sciences 2300A/B, Health Sciences 3300A/B, **Kinesiology 2000A/B, Medical Biophysics 4700B, Medical Biophysics 4730A/B,** Medical Sciences 4931F/G, Physiology 3140A, Psychology 2220A/B.

Biomedical Engineering (BME) Technical Electives (Courses that do not appear on this list require special permission):

AISE 4025A/B, CBE 4422A/B, CBE 4423A/B, **Medical Biophysics 3330F, Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B, Medical Biophysics 4720B** ~~Medical Biophysics 3507G, Medical Biophysics 3645A/B, Medical Biophysics 4475A/B, Medical Biophysics 4535A/B~~.

Non-technical Electives:

Selection of the non-technical electives must be approved by the Director of the School of Biomedical Engineering to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences. An approved list can be found on the Engineering website. In addition, 1.0 courses must focus on topics related to health care and the health-care system and its effects on individuals and society.

Healthcare Non-technical Electives:

Anthropology 2240A/B, Anthropology 2290A/B or the former Anthropology 2290F/G, Economics 2169F/G, GSWS 2244, **History 2818F/G, History 2819F/G,** History 2195A/B ~~(King's)~~, Law 3101A/B, Philosophy 2272F/G (King's) or the former Philosophy 2072F/G, Philosophy 2715F/G, Political Science 2276F/G, **Psychology 2036A/B, Psychology 2135A/B,** Religious Studies 2239F/G (King's), Sociology 2179A/B, Sociology 2180A/B, Writing 3222F/G, the former Philosophy 2071E.

For the course credit designated as an "open elective", students may select any course from the lists of biomedical science electives, BME technical electives, CBE technical electives, healthcare non-technical electives, or Faculty of Engineering approved non-technical electives.

Program Revision – Effective September 1, 2025, the following changes be made:

G. CHEMICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Admission Requirements

The *Chemical Engineering and Artificial Intelligence Systems Engineering (option G)* is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Chemical Engineering and a BESc in Artificial Intelligence Systems Engineering (non-accredited). Admission to Option G is competitive; meeting the minimum requirements does not guarantee admission. Students apply to Option G while in first-year through the Intent-to-Register process. To be eligible for Option G, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 75%.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B. (Three of the half courses are taken in each term as scheduled.)

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2277A/B, CBE 2206A/B, CBE 2207A/B, CBE 2214A/B, CBE 2220A/B, CBE 2221A/B, CBE 2224A/B, CBE 2290A/B, CBE 2291A/B, Statistical Sciences 2143A/B.

Third Year Program

AISE 3010A/B, AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), CBE 2291A/B, CBE 3315A/B, CBE 3324A/B, CBE 3322A/B, CBE

3323A/B, Data Science 3000A/B, Writing 2130F/G, One 0.5 non-technical elective.

Fourth Year Program

CBE 3307A/B, CBE 3310A/B, CBE 3318A/B, CBE 3316A/B, CBE 3395Y, CBE 3319A/B, AISE 4010A/B, AISE 4020A/B, AISE 4430A/B (or the former SE 4430A/B), one 0.5 AISE technical elective**, one 0.5 nontechnical elective.

Fifth Year Program

AISE 3020A/B, AISE 4050, AISE 4450A/B (or former ECE 4450A/B), ELI 4110F**/G**, two 0.5 CBE technical electives, one 0.5 AISE technical elective, one 0.5 non-technical electives*.

Technical Electives:

CBE 4404A/B, CBE 4405A/B, CBE 4407A/B, CBE 4409A/B, CBE 4411A/B, CBE 4413A/B, CBE 4416A/B, CBE 4417A/B, CBE 4420A/B, CBE 4421A/B, CBE 4422A/B, CBE 4423A/B, CBE 4427A/B, CBE 4428A/B, CBE 4432A/B, CBE 4463A/B, CBE 4485A/B, CBE 4493A/B, CBE 4484A/B.

*Selection of the non-technical elective must be approved by the department to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. More information about approved non-technical electives can be found on the Engineering website.

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, Computer Science 3340A/B, Computer Science 4417A/B, ECE 4438A/B, ECE 4445A/B, SE 4455A/B, Statistical Sciences 4861A/B.

Some technical electives may not be offered in a given academic year.

Related Information

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering.

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Course Revision – Effective September 1, 2025, the following change(s) be made:

CIVIL AND ENVIRONMENTAL ENGINEERING 3321A/B
SOIL MECHANICS & HYDROGEOLOGIC ENGINEERING

Course Description
Soil classification, clay mineralogy, effective stress principle, site investigation practice, soil compaction, and one and two dimensional steady state flow in natural and engineered systems.

Prerequisite(s): CEE 2202A/B, CEE 2224.

Extra Information: ~~3~~ **2** lecture hours per week, 2 lab hours 4 times per term, 4 tutorial hours 4 times per term.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

H. CIVIL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING, SMART CITIES AND STRUCTURAL ENGINEERING OPTION

Admission Requirements

The *Civil Engineering and Artificial Intelligence Systems Engineering (AISE), Smart Cities and Structural Engineering (Option H)* is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Civil Engineering and a BESc in Artificial Intelligence Systems Engineering (non-accredited). Admission to Option H is competitive; meeting the minimum requirements does not guarantee admission.

Students apply to Option H while in first-year through the Intent-to-Register process. To be eligible for Option H, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year weighted average (YWA) of 75%.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B. (Three of the half courses are taken in each term as scheduled.)

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), CEE 2202A/B, CEE 2217A/B, CEE 2219A/B, CEE 2220A/B, CEE 2221A/B, CEE 2224, Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2277A/B, Statistical Sciences 2143A/B.

Third Year Program

AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), CEE 3348A/B, CEE 4411A/B, CEE 4412A/B, D**ata** S**cience** 3000A/B, AISE 3010A/B, Earth Sciences 2281A/B, Writing 2130F/G, two 0.5 non-technical electives.

Note: CEE 3324A**/B** (Surveying). This course is available each summer (10 days) and must be completed before a student may graduate from a Civil Engineering program.

Fourth Year Program

CEE 3321A/B, CEE 3322A/B, CEE 3340A/B, CEE 3343A/B, CEE 3344A/B, CEE 3346A/B, CEE 3347A/B, CEE 3358A/B, CEE 3369A/B, CEE 4413A/B, AISE 4010A/B, AISE 4430A/B (or the former SE 4430A/B).

Fifth Year Program

AISE 3020A/B, AISE 4020A/B or CEE 4420A/B, AISE 4050 or CEE 4442, AISE 4450A/B (or the former ECE 4450A/B), CEE 4426A/B, CEE 4478A/B, CEE 4491A/B, CEE 4415A/B, ELI 4110F/G, one 0.5 technical elective, one 0.5 non-technical elective.

*Selection of the non-technical elective must be approved by the department to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. More information about approved non-technical electives can be found on the Engineering website.

Technical electives: Structural Engineering Option

CEE 3355A/B, CEE 4414A/B, CEE 4418A/B, CEE 4428A/B, CEE 4429A/B, CEE 4438A/B, CEE 4440, CEE 4458A/B, CEE 4459A/B, CEE 4465A/B, CEE 4476A/B, CEE 4480A/B, CEE 4485A/B, Earth Sciences 3340A/B, Earth Sciences 4440A/B. Some technical electives may not be offered in a given academic year.

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, CEE 4417A/B, Computer Science 3340A/B, Computer Science 4417A/B, ECE 4438A/B, ECE 4445A/B, SE 4455A/B, Statistical Sciences 4861A/B.

Some technical electives may not be offered in a given academic year.

Related Information

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering.

Program Revision – Effective September 1, 2025, the following changes be made:

I. CIVIL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING, SMART CITIES AND ENVIRONMENTAL ENGINEERING OPTION

Admission Requirements

The *Civil Engineering and Artificial Intelligence Systems Engineering (AISE), Smart Cities and Environmental Engineering (Option I)* is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Civil Engineering and a BESc in Artificial Intelligence Systems Engineering (non-accredited). Admission to Option I is competitive; meeting the minimum requirements does not guarantee admission.

Students apply to Option I while in first-year through the Intent-to-Register process. To be eligible for Option I, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year weighted average (YWA) of 75%.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B. (Three of the half courses are taken in each term as scheduled.)

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), CEE 2202A/B, CEE 2217A/B, CEE 2219A/B, CEE 2220A/B, CEE 221A/B, CEE 2224, Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2277A/B, Statistical Sciences 2143A/B.

Third Year Program

AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the

former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), CEE 3348A/B, CEE 4411A/B, CEE 4412A/B, D**ata** S**cience** 3000A/B, AISE 3010A/B, Writing 2130F/G, Earth Sciences 2281A/B, 1.0 non-technical electives.

Note: CEE 3324~~a~~**A/B** (Surveying). This course is available each summer (10 days) and must be completed before a student may graduate from a Civil Engineering program.

Fourth Year Program

CEE 3321A/B, CEE 3322A/B, CEE 3355A/B, CEE 3362A/B, CEE 3369A/B, CEE 3386A/B, CEE 4476A/B, CBE 4409A/B, AISE 4010A/B, AISE 4430A/B (or the former SE 4430A/B), Earth Sciences 3340A/**B**, one 0.5 non-technical elective.

Fifth Year Program

AISE 3020A/B, AISE 4020A/B or CEE 4420A/B, AISE 4050 or CEE 4442, AISE 4450A/B (or the former ECE 4450A/B), CEE 4426A/B, CEE 4463A/B, CEE 4465A/B, CEE 4478A/B, CEE 4414A/B, CEE 4416A/B, ELI 4110F/G.

*Selection of the non-technical elective must be approved by the department to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. More information about approved non-technical electives can be found on the Engineering website.

Environmental Engineering Technical Electives:

CEE 4418A/B, CEE 4428A/B, CEE 4429A/B, CEE 4438A/B, CEE 4440, CEE 4458A/B, CEE 4479A/B, CEE 4480A/B, CEE 4485A/B, CBE 4405A/B, CBE 4463A/B.

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, CEE 4414A/B, CEE 4417A/B, ECE 4445A/B, ECE 4438A/B, Computer Science 3340A/B, Computer Science 4417A/B, SE 4455A/B, Statistical Sciences 4861A/B.

Some technical electives may not be offered in a given academic year.

Related Information

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Course Introduction – Effective September 1, 2025, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 4025A/B INTRODUCTION TO COMPUTER ASSISTED SURGERY: THEORY AND PRACTICE

(Short Title: Comp. Assist. Surgery)

Course Description
Modern surgical theatres are equipped with advanced computing and mechatronic resources to assist surgeons in performing surgical interventions. In this course, mathematical foundations and practical implementation of computer-assisted surgery, such as medical image processing, robotics, and surgical navigation using virtual and augmented reality environments, are explored at an advanced level.

Prerequisite(s): (Engineering Science 1036A/B or Computer Science 1025A/B or Computer Science 1026A/B) and (NMM 2276A/B or NMM 2277A/B) and ECE 4445A/B.

Extra Information: 3 lecture hours, 2 laboratory hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 4030A/B REINFORCEMENT LEARNING

Course Description
Reinforcement Learning (RL) is a field of AI where agents learn to make decisions through trial-and-error to maximize rewards. This course covers core RL concepts, algorithms, and applications, including Q-Learning, Deep RL, and policy-based methods, with hands-on experience to solve real-world problems in robotics, games, and recommendation systems.

Prerequisites: Data Science 3000A/B and (NMM 2276A/B or NMM 2277A/B).

Extra Information: 3 lecture hours.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING PROGRAM

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering. The objective of the program is to educate students in the fundamentals of Artificial Intelligence, deep learning, online learning, algorithms and data structure to solve engineering problems.

Students in the Artificial Intelligence Systems Engineering program follow the same curriculum for the first year as other engineering students.

Admission Requirements

Students entering the Artificial Intelligence Systems Engineering program must have completed the entire first-year program in Engineering, with no outstanding credits to be taken, and have a Year Weighted Average (YWA) of at least 75%. First consideration will be given to applicants with a minimum grade of 60% in each course of the first-year engineering program.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression. MSE students who entered their progression in September 2022 will also have to follow their original AISE program progression.

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B or Numerical and Mathematical Methods 2277A/B, Statistical Sciences 2141A/B or Statistical Sciences 2143A/B, Writing 2130F/G, up to 3.0 credits from the student's core engineering discipline*.

Third Year Program

Data Science 3000A/B, AISE 3010A/B, AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), up to 3.5 credits from the student's core engineering discipline*.

Fourth Year Program

AISE 4010A/B, AISE 4020A/B, AISE 4430A/B (or the former SE 4430A/B), up to 4.0 credits from the student's core engineering discipline*, 0.5 credit from AISE technical electives**

Fifth Year Program

AISE 3020A/B, AISE 4050, AISE 4450A/B (or the former ECE 4450A/B), ELI 4110F/G, up to 3.5 credits from the student's core engineering discipline*, 0.5 credit from AISE technical electives**

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, Computer Science 3340A/B, Computer Science 4417A/B, ECE 4438A/B, ECE 4445A/B, SE 4455A/B, Statistical Sciences 4861A/B.

Some technical electives may not be offered in a given academic year.

* The 'core engineering discipline' refers to the accredited engineering degree being taken concurrently with the AISE degree program. Required technical and non-technical core courses, as well as approved technical and non-technical electives are listed under the AISE dual degree option for each engineering discipline.

** AISE technical electives refer to a list of AI-based technical courses approved by the AISE program committee. The list consists of AI-based courses offered by the Faculty of Engineering and Faculty of Science at Western. The list will be updated every year.

Program Revision – Effective September 1, 2025, the following changes be made:

A. ELECTRICAL ENGINEERING PROGRAM

Admission Requirements

Students entering the Electrical Engineering program must have completed the entire first-year program in Engineering, with no outstanding credits to be taken, and have a year-weighted average (YWA) of at least 60%. First consideration will be given to applicants with a minimum grade of 60% in each of the following courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Engineering Science 1036A/B, and Physics 1402A/B.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

(Three of the half courses are taken in each term as scheduled)

Module/Program Information

Second Year Program

Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, Computer Science 1027A/B, ECE 2205A/B, ECE 2231A/B, ECE 2233A/B, ECE 2236A/B, ECE 2240A/B, ECE 2242A/B, ECE 2277A/B, MME 2234A/B, Writing 2130F/G.

Third Year Program

Numerical and Mathematical Methods 3415A/B, ECE 3330A/B, ECE 3331A/B, ECE 3332A/B, ECE 3333A/B, ECE 3336A/B, ECE 3337A/B, ECE 3399A/B, ECE 3370A/B, ECE 3375A/B, Statistical Sciences 2141A/B, 0.5 non-technical elective.

Selection of the non-technical elective must be approved by the Department Counsellor to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences. An approved list can be found on the Engineering website.

Fourth Year Program

ECE 4416, ECE 4429A/B, ECE 4437A/B, ELI 4110F/G or the former ES 4498F/G, Five 0.5 technical electives, 1.0 non-technical elective*.

*Selection of the non-technical elective must be approved by the Department Counsellor to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. An approved list can be found on the Engineering website.

Technical Electives: Electrical Engineering

AISE 4025A/B, AISE 4030A/B, ECE 3349A/B, ECE 3380A/B, ECE 4430A/B, ECE 4431A/B, ECE 4432A/B, ECE 4433A/B, ECE 4436A/B, ECE 4438A/B, ECE 4439A/B, ECE 4445A/B, ECE 4451A/B, ECE 4455A/B, ECE 4456A/B, ECE 4457A/B, ECE 4460A/B, ECE 4464A/B, ECE 4468A/B, ECE 4469A/B, MME 4452A/B, MME 4473A/B, MME 4482A/B, MME 4487A/B, the former ECE 4470A/B, the former ECE 4489A/B.

*Up to two MME half courses from the approved list may be used as technical electives.

Some technical electives may not be offered in a given academic year.

For students registered in a concurrent degree program in Computer Science up to two computer science half courses at the 3000 level or higher may be used as technical electives.

Program Revision – Effective September 1, 2025, the following changes be made:

D. MECHATRONIC SYSTEMS ENGINEERING AND BIOMEDICAL ENGINEERING OPTION

Admission Requirements

The Mechatronic Systems Engineering and Biomedical Engineering Option (Option D) is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Mechatronic Systems Engineering and a BESc in Biomedical Engineering (non-accredited). Admission to Option D is competitive; meeting the minimum requirements does not guarantee admission.

Students apply to Option D while in first year through the Intent-to-Register process. The Mechatronic Systems Engineering Program, in collaboration with the Director of Biomedical Engineering, will accept students into Option D. To be eligible for Option D, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 70%.

Acceptance into Option D does not guarantee acceptance into the concurrent degree program. Students apply to the concurrent degree program during their second year in Engineering by the published deadline. To be eligible for the concurrent degree program, students must complete all of the requirements of the second-year program in Option D of the Mechatronic Systems Engineering Program, obtaining a minimum year-weighted average (YWA) of 70% and a minimum grade of 70% in ~~Biomedical Engineering~~ **BME** 3201A/B.

Students who are not accepted into the concurrent degree program after second year will still be eligible to complete a BESc in Mechatronic Systems Engineering provided that they meet the requirements for progression in Engineering. In this case, the BME 3201A/B course may count as a 0.5 technical elective in the program.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

(Three of the half courses are taken in each term as scheduled.)

Second Year Program

Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, BME 3201A/B, Computer Science 1037A/B, ECE 2205A/B, MSE 2200Q/R/S/T, MSE 2201A/B, MSE 2202A/B, MSE 2212A/B, MSE 2213A/B, MSE 2214A/B, MSE 2233A/B, MSE 2273A/B.

Third Year Program

Biology 1001A, Biology 1002B, ECE 2277A/B, ECE 3330A/B, ECE 3331A/B, ECE 3375A/B, MSE 2221A/B, MSE 3301A/B, MSE 3302A/B, MSE 3310A/B, MSE 3360A/B, MSE 3380A/B, MSE 3381A/B.

Fourth Year Program

Biochemistry 2280A, BME 3301A/B, BME 3303A/B, ECE 4455A/B, MME 4469A/B, Physiology 2130, Statistical Sciences 2141A/B, 1.5 biomedical sciences electives, 1.0 healthcare non-technical electives.

Fifth Year Program

BME 4400E, ECE 4445A/B, ELI 3200A/B or ELI 3000A/B or ELI 4200A/B **or ELI 3100A/B or ELI 4300A/B**, ELI 4110F/G, MSE 4401A/B, MSE 4499, 1.0 BME technical electives, 0.5 MSE technical elective, 0.5 non-technical elective.

Biomedical Sciences Electives (Courses that do not appear on this list require special permission):

Anatomy and Cell Biology 2200A/B, Biochemistry 3385A, Biochemistry 3386B, Biology 2382A/B, Biology 2581A/B, Chemistry 2213A/B, Chemistry 2223B, Communication Sciences and Disorders 4417A/B, Health Sciences 2300A/B, Health Sciences 3300A/B, **Kinesiology 2000A/B, Medical Biophysics 4700B, Medical Biophysics 4730A/B,** Medical Sciences 4931F/G, Physiology 3140A, Psychology 2220A/B.

Biomedical Engineering (BME) Technical Electives (Courses that do not appear on this list require special permission):

AISE 4025A/B, CBE 4421A/B, **CBE 4422A/B,** ECE 4438A/B, **Medical Biophysics 3330F, Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B, Medical Biophysics 4720B, MME 4470A/B** ~~Medical Biophysics 3507G, Medical Biophysics 3645A/B, Medical Biophysics 4475A/B, Medical Biophysics 4535A~~.

Non-technical Electives:

Selection of the non-technical electives must be approved by the Director of the School of Biomedical Engineering to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences. An approved list can be found on the Engineering website. In addition, 1.0 courses must focus on topics related to health care and the health-care system and its effects on individuals and society.

Healthcare Non-technical Electives:

Anthropology 2240A/B, Anthropology 2290A/B or the former Anthropology 2290F/G, Economics 2169F/G, GSWS 2244, **History 2818F/G, History 2819F/G,** History 2195A/B ~~(King's)~~, Law 3101A/B, Philosophy 2272F/G (King's) or the former Philosophy 2072F/G, Philosophy 2715F/G, Political Science 2276F/G, **Psychology 2036A/B, Psychology 2135A/B,** Religious Studies 2239F/G (King's), Sociology 2179A/B, Sociology 2180A/B, Writing 3222F/G, the former Philosophy 2071E.

Program Revision – Effective September 1, 2025, the following changes be made:

E. MECHATRONIC SYSTEMS ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Admission Requirements

The *Mechatronic Systems Engineering and Artificial Intelligence Systems Engineering (option E)* is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Mechatronic Systems Engineering and a BESc in Artificial Intelligence Systems Engineering (non-accredited). Admission to Option E is competitive; meeting the minimum requirements does not guarantee admission. Students apply to Option E while in first-year through the Intent-to-Register process. To be eligible for Option E, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year weighted average (YWA) of 75%.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression. MSE students who entered their progression in September 2022 will also have to follow their original AISE program progression.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, MSE 2212A/B, MSE 2213A/B, MSE 2214A/B, MSE 2221A/B, MSE 2273A/B, MSE 2200Q/R/S/T, Statistical Sciences 2141A/B, two 0.5 non-technical electives.

Third Year Program

AISE 3010A/B, AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), ECE 2205A/B, MSE 2201A/B, MSE 2202A/B, MSE 2233A/B, MSE

3360A/B, Data Science 3000A/B, Writing 2130F/G, one 0.5 non-technical elective.

Fourth Year Program

AISE 4010A/B, AISE 4020A/B, AISE 4430A/B (or the former SE 4430A/B), ECE 2277A/B, ECE 3330A/B, ECE 3375A/B, ECE 4469A/B, MSE 3302A/B, MSE 3310A/B, MSE 3380A/B, MSE 3381A/B, one 0.5 AISE technical elective.

Fifth Year Program

AISE 3020A/B, AISE 4050, AISE 4450A/B (or the former ECE 4450A/B), ELI 4110F/G, ECE 4460A/B, MSE 3301A/B, MSE 4401A/B, Three 0.5 technical electives, one 0.5 AISE technical elective.

*Selection of the non-technical elective must be approved by the department to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. More information about approved non-technical electives can be found on the Engineering website.

Technical Electives:

ECE 3380A/B, ECE 4429A/B, ECE 4438A/B, ECE 4445A/B, ECE 4455A/B, ECE 4468A/B, MME 4424A/B, MME 4425A/B, MME 4459A/B, MME 4469A/B, MME 4470A/B, MME 4473A/B, MME 4480A/B, MME 4482A/B, MME 4492A/B.

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, Computer Science 3340A/B, Computer Science 4417A/B, ECE 4438A/B, ECE 4445A/B, SE 4455A/B, Statistical Sciences 4861A/B.

Some technical electives may not be offered in a given academic year.

Related Information

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering.

Program Revision – Effective September 1, 2025, the following changes be made:

H. ELECTRICAL ENGINEERING AND BIOMEDICAL ENGINEERING OPTION

Admission Requirements

The Electrical and Biomedical Engineering Option (Option H) is a limited enrollment program. Upon completion, students will receive two degrees: a BESc in Electrical Engineering and a BESc in Biomedical Engineering (non-accredited). Admission to Option H is competitive; meeting the minimum requirements does not guarantee admission.

Students apply to Option H while in first year through the Intent-to-Register process. The Department of Electrical and Computer Engineering, in collaboration with the Director of Biomedical Engineering, will accept students into Option H. To be eligible for Option H, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 70%.

Acceptance into Option H does not guarantee acceptance into the concurrent degree program. Students apply to the concurrent degree program during their second year in Engineering by the published deadline. To be eligible for the concurrent degree program, students must complete all of the requirements of the second-year program in Option F of the Electrical Engineering Program, obtaining a minimum year-weighted average (YWA) of 70% and a minimum grade of 70% in ~~Biomedical Engineering~~ **BME** 3201A/B.

Students who are not accepted into the concurrent degree program after second year will still be eligible to complete a BESc in Electrical Engineering provided that they meet the requirements for progression in Engineering. In this case, the BME 3201A/B course may count as a 0.5 technical elective in the program.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

(Three of the half courses are taken in each term as scheduled.)

Second Year Program

Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, BME 3201A/B, Computer Science 1027A/B, ECE 2205A/B, ECE 2231A/B, ECE 2233A/B, ECE 2236A/B, ECE 2240A/B, ECE 2242A/B, ECE 2277A/B, 0.5 non-technical elective.

Third Year Program

Numerical and Mathematical Methods 3415A/B, Biology 1001A, Biology 1002B, ECE 3330A/B, ECE 3331A/B, ECE 3332A/B, ECE 3336A/B, ECE 3337A/B, ECE 3370A/B, ECE 3375A/B, ECE 3399A/B, Statistical Sciences 2141A/B.

Fourth Year Program

Biochemistry 2280A, BME 3301A/B, BME 3303A/B, ECE 4455A/B, MME 4469A/B, Physiology 2130, 1.5 Biomedical Sciences Electives, 1.0 Healthcare Non-technical Electives, 0.5 open elective.

Fifth Year Program

BME 4400E, ECE 4416, ECE 4429A/B, ECE 4437A/B, ECE 4445A/B, ELI 3200A/B or ELI 3000A/B or ELI 4200A/B **or ELI 3100A/B or ELI 4300A/B**, ELI 4110F/G, 1.0 BME technical electives, 0.5 ECE technical elective.

Biomedical Sciences Electives (Courses that do not appear on this list require special permission):

Anatomy and Cell Biology 2200A/B, Biochemistry 3385B, Biochemistry 3386B, Biology 2382A/B, Biology 2581A/B, Chemistry 2213A/B, Chemistry 2223B, Communication Sciences and Disorders 4417A/B, Health Sciences 2300A/B, Health Sciences 3300A/B, **Kinesiology 2000A/B, Medical Biophysics 4700B, Medical Biophysics 4730A/B,** Medical Sciences 4931F/G, Physiology 3140A, Psychology 2220A/B.

Biomedical Engineering (BME) Technical Electives (Courses that do not appear on this list require special permission):

AISE 4025A/B, CBE 4421A/B, ECE 4438A/B, **Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B, Medical Biophysics 4720B** ~~Medical Biophysics 3507G, Medical Biophysics 3645A/B, Medical Biophysics 4475A/B, Physics 4662A/B, Physics 4672A/B~~.

Non-technical Electives:

Selection of the non-technical electives must be approved by the Director of the School of Biomedical Engineering to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences. An approved list can be found on the Engineering website. In addition, 1.0 courses must focus on topics related to health care and the health-care system and its effects on individuals and society.

Healthcare Non-technical Electives:

Anthropology 2240A/B, Anthropology 2290A/B or the former Anthropology 2290F/G, Economics 2169F/G, GSWS 2244, **History 2818F/G, History 2819F/G,** History 2195A/B ~~(King's)~~, Law 3101A/B, Philosophy 2272F/G (King's) or the former Philosophy 2072F/G, Philosophy 2715F/G, Political Science 2276F/G, **Psychology 2036A/B, Psychology 2135A/B,** Religious Studies 2239F/G (King's), Sociology 2179A/B, Sociology 2180A/B, Writing 3222F/G, the former Philosophy 2071E.

For the course credit designated as an "open elective", students may select any course from the lists of biomedical science electives, BME technical electives, ECE technical electives, healthcare non-technical electives, or Faculty of Engineering approved non-technical electives.

Program Revision – Effective September 1, 2025, the following changes be made:

M. ELECTRICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Admission Requirements

The *Electrical Engineering and Artificial Intelligence Systems Engineering (option M)* is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Electrical Engineering and a BESc in Artificial Intelligence Systems Engineering (non-accredited). Admission to Option M is competitive; meeting the minimum requirements does not guarantee admission. Students apply to Option M while in first-year through the Intent-to-Register process. To be eligible for Option M, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 75%.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, ECE 2205A/B, ECE 2233A/B, ECE 2236A/B, ECE 2240A/B, ECE 2277A/B, Statistical Sciences 2143A/B, Writing 2130F/G.

Third Year Program

AISE 3010A/B, AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), ECE 2231A/B, ECE 2242A/B, ECE 3330A/B, ECE 3332A/B, ECE 3333A/B, ECE 3375A/B, D**ata** S**cience** 3000A/B, Numerical and Mathematical Methods 3415A/B.

Fourth Year Program

AISE 4010A/B, AISE 4020A/B, AISE 4430A/B (or the former SE 4430A/B), ECE 3336A/B, ECE 3337A/B, ECE 3370A/B, ECE 3399A/B, MME 2234A/B, one 0.5 non-technical elective, one 0.5 AISE technical elective, two 0.5 technical elective.

Fifth Year Program

AISE 3020A/B, AISE 4050, AISE 4450A/B (or the former ECE 4450A/B), ELI 4110F/G, ECE 4437A/B, Four 0.5 technical electives, one 0.5 non-technical elective, one 0.5 AISE technical elective.

*Selection of the non-technical elective must be approved by the department to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. More information about approved non-technical electives can be found on the Engineering website.

Technical Electives:

ECE 3349A/B, ECE 3380A/B, ECE 4430A/B, ECE 4431A/B, ECE 4432A/B, ECE 4433A/B, ECE 4436A/B, ECE 4438A/B, ECE 4439A/B, ECE 4445A/B, ECE 4451A/B, ECE 4455A/B, ECE 4456A/B, ECE 4457A/B, ECE 4460A/B, ECE 4464A/B, ECE 4468A/B, ECE 4469A/B, MME 4452A/B, MME 4473A/B, MME 4482A/B, MME 4487A/B, the former ECE 4470A/B, the former ECE 4489A/B.

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, Computer Science 3340A/B, Computer Science 4417A/B, ECE 4445A/B, ECE 4438A/B, SE 4455A/B, Statistical Sciences 4861A/B.

*Up to two MME half courses from the approved list may be used as technical electives.

Some technical electives may not be offered in a given academic year.

Related Information

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering.

DEPARTMENT OF MECHANICAL AND MATERIALS ENGINEERING

Program Revision – Effective September 1, 2025, the following changes be made:

F. MECHANICAL ENGINEERING AND BIOMEDICAL ENGINEERING OPTION

Admission Requirements

The Mechanical Engineering and Biomedical Engineering Option (Option F) is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Mechanical Engineering and a BESc in Biomedical Engineering (non-accredited). Admission to Option F is competitive; meeting the minimum requirements does not guarantee admission.

Students apply to Option F while in first year through the Intent-to-Register process. The Department of Mechanical and Materials Engineering, in collaboration with the Director of Biomedical Engineering, will accept students into Option F. To be eligible for Option F, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 70%.

Acceptance into Option F does not guarantee acceptance into the concurrent degree program. Students apply to the concurrent degree program during their second year in Engineering by the published deadline. To be eligible for the concurrent degree program, students must complete all of the requirements of the second-year program in Option F of the Mechanical Engineering Program, obtaining a minimum year-weighted average (YWA) of 70% and a minimum grade of 70% in ~~Biomedical Engineering~~ **BME** 3201A/B.

Students who are not accepted into the concurrent degree program after second year will still be eligible to complete a BESc in Mechanical Engineering provided that they meet the requirements for progression in Engineering. In this case, the BME 3201A/B course may count as a 0.5 technical elective in the program.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B.

(Three of the half courses are taken in each term as scheduled.)

Second Year Program

Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, BME 3201A/B, MME 2200Q/R/S/T, MME 2202A/B, MME 2204A/B, MME 2213A/B, MME 2221A/B, MME 2259A/B, MME 2260A/B, MME 2273A/B, MME 2285A/B, Statistical Sciences 2143A/B.

Third Year Program

Biology 1001A, Biology 1002B, MME 3303A/B, MME 3307A/B, MME 3325A/B, MME 3348A/B, MME 3350A/B, MME 3360A/B, MME 3374A/B, MME 3380A/B, MME 3381A/B, 0.5 non-technical elective.

Fourth Year Program

Biochemistry 2280A, BME 3301A/B, BME 3303A/B, ECE 4455A/B, MME 4469A/B, Physiology 2130, 1.5 Biomedical Sciences Electives, 1.0 Healthcare Non-technical Electives, 0.5 open elective.

Fifth Year Program

BME 4400E, MME 3334A/B, MME 4499, ELI 4110F/G, ELI 3200A/B or ELI 3000A/B or ELI 4200A/B **or ELI 3100A/B or ELI 4300A/B**, 1.5 BME technical electives, 1.0 MME technical elective.

Biomedical Sciences Electives (Courses that do not appear on this list require special permission):

Anatomy and Cell Biology 2200A/B, Biochemistry 3385B, Biochemistry 3386B, Biology 2382A/B, Biology 2581A/B, Chemistry 2213A/B, Chemistry 2223B, Communication Sciences and Disorders 4417A/B, Health Sciences 2300A/B, Health Sciences 3300A/B, **Kinesiology 2000A/B, Medical Biophysics 4700B, Medical Biophysics 4730A/B,** Medical Sciences 4931F/G, Physiology 3140A, Psychology 2220A/B.

Biomedical Engineering (BME) Technical Electives (Courses that do not appear on this list require special permission):

AISE 4025A/B, CBE 4421A/B, **CBE 4422A/B, Medical Biophysics 3330F, Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B, Medical Biophysics 4720B, MME 4470B** ~~Medical Biophysics 3507G, Medical Biophysics 3645A/B, Medical Biophysics 4475A/B, Medical Biophysics 4535A/B~~.

Non-technical Electives:

Selection of the non-technical electives must be approved by the Associate Director, Undergraduate Affairs of the School of Biomedical Engineering to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences. An approved list can be found on the Engineering website. In addition, 1.0 courses must focus on topics related to health care and the health-care system and its effects on individuals and society.

Healthcare Non-technical Electives:

Anthropology 2240A/B, Anthropology 2290A/B or the former Anthropology 2290F/G, Economics 2169F/G, GSWS 2244, **History 2818F/G, History 2819F/G,** History 2195A/B ~~(King's)~~, Law 3101A/B, Philosophy 2272F/G (King's) or the former Philosophy 2072F/G, Philosophy 2715F/G, Political Science 2276F/G, **Psychology 2036A/B, Psychology 2135A/B,** Religious Studies 2239F/G (King's), Sociology 2179A/B, Sociology 2180A/B, Writing 3222F/G, the former Philosophy 2071E.

For the course credit designated as an "open elective", students may select any course from the lists of biomedical science electives, BME technical electives, MME technical electives, healthcare non-technical electives, or Faculty of Engineering approved non-technical electives.

Program Revision – Effective September 1, 2025, the following changes be made:

H. MECHANICAL ENGINEERING – MECHANICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Admission Requirements

The *Mechanical Engineering and Artificial Intelligence Systems Engineering (option H)* is a limited-enrollment program. Upon completion, students will receive two degrees: a BESc in Mechanical Engineering and a BESc in Artificial Intelligence Systems Engineering (non-accredited). Admission to Option H is competitive; meeting the minimum requirements does not guarantee admission. Students apply to Option H while in first-year through the Intent-to-Register process. To be eligible for Option H, all of the requirements of the first-year curriculum in the Faculty of Engineering must be completed with a minimum year-weighted average (YWA) of 75%.

Module/Program Information

Students who entered the Engineering Program in September 2021 will continue to follow their original AISE program progression.

Engineering Common First Year Program

Full-year courses: Engineering Science 1050, Business Administration 1299E.
Full-year half course: Engineering Science 1022A/B/Y.
Half-year courses: Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Chemistry 1302A/B, Engineering Science 1021A/B, Engineering Science 1036A/B, Physics 1401A/B and Physics 1402A/B. (Three of the half courses are taken in each term as scheduled.)

Second Year Program

AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, MME 2200Q/R/S/T, MME 2202A/B, MME 2204A/B, MME 2259A/B, MME 2260A/B, MME 2273A/B, MME 2285A/B, Statistical Sciences 2143A/B.

Third Year Program

Writing 2130F/G, MME 2221A/B, MME 2213A/B, MME 3348A/B, MME 3374A/B, Data Science 3000A/B, AISE 3010A/B, AISE 3309A/B (or SE 3309A/B if taken prior to 2024-25), AISE 3350A/B (or the former ECE 3350A/B), AISE 3351A/B (or the former ECE 3351A/B), one 0.5 non-technical elective.

Fourth Year Program

MME 3325A/B, MME 3381A/B, MME 3303A/B, MME 3334A/B, MME 3350A/B, MME 3307A/B, MME 3360A/B, MME 3380A/B, AISE 4010A/B, AISE 4020A/B, AISE 4430A/B (or the former SE 4430A/B), one 0.5 AISE technical elective.

Fifth Year Program

AISE 3020A/B, AISE 4050, AISE 4450A/B (or the former ECE 4450A/B), ELI 4110F/G, 1.5 MME technical electives, 0.5 AISE technical elective, 1.0 non-technical electives*.

*Selection of the non-technical elective must be approved by the department to satisfy the CEAB requirements of subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences. More information about approved non-technical electives can be found on the Engineering website.

Technical Electives:

MME 3379A/B, MME 4410, MME 4423A/B, MME 4424A/B, MME 4427A/B, MME 4428A/B, MME 4429A/B, MME 4435A/B, MME 4437A/B, MME 4450A/B, MME 4452A/B, MME 4453A/B, MME 4459A/B, MME 4460A/B, MME 4469A/B, MME 4470A/B, MME 4473A/B, MME 4474A/B, MME 4475A/B, MME 4480A/B, MME 4482A/B, MME 4483A/B, MME 4485A/B, MME 4487A/B, MME 4490A/B, MME 4492A/B.

AISE Technical Electives:

AISE 4025A/B, AISE 4030A/B, Computer Science 3340A/B, Computer Science 4417A/B, ECE 4445A/B, ECE 4438A/B, SE 4455A/B, Statistical Sciences 4861A/B.

Some technical electives may not be offered in a given academic year.

Related Information

The Artificial Intelligence Systems Engineering program is offered and administered by the Department of Electrical and Computer Engineering in the Faculty of Engineering.

FACULTY OF HEALTH SCIENCES

ARTHUR LABATT FAMILY SCHOOL OF NURSING

Administrative Note: The course revisions put forward by the Arthur Labatt Family School of Nursing were originally put forward in the December 11, 2024 approvals document with an effective date of September 1, 2025. The effective date has now been revised to March 1, 2025.

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1040A/B
FOUNDATIONAL CONCEPTS OF PROFESSIONAL NURSING PRACTICE

Course Description
Students critically examine the historical development of nursing and the framework for Registered Nursing practice, including the philosophical, theoretical, and ethical tenets of the role. Using a variety of theories and conceptual frameworks, students acquire an understanding of how individual values, beliefs, perceptions, and experiences influence perspectives and nursing practice.

~~Antirequisite(s): Nursing 1060A/B and Nursing 1070A/B.~~

Prerequisite(s): Registration in Year 1 of the Western-Fanshawe Collaborative BScN Program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1050A/B
ACADEMIC AND PROFESSIONAL STRATEGIES FOR SUCCESS IN NURSING

Course Description
Students will acquire strategies to transition into the university and the BScN program which will help them acquire the foundational skills necessary to succeed both academically and in professional nursing practice.

Prerequisite(s): Registration in Year 1 of the Western-Fanshawe Collaborative BScN Program **or the Compressed Time Frame BScN Program**.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1080A/B
HOLISTIC HEALTH ASSESSMENT I: COMMUNICATION FOR HEALTH ASSESSMENT

Course Description
Development of communication skills including therapeutic communication and health history acquisition is addressed in this course. Students engage in learning opportunities to enhance capabilities in therapeutic communication, interviewing, and relational practices with clients across the lifespan. Students document client care in accordance with legal standards of practice.

Prerequisite(s): Registration in Year 1 of the Western-Fanshawe Collaborative BScN Program.

Extra Information: 2 lecture hours and ~~Laboratory Practice~~ **2 simulation hours**.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1120A/B
COMMUNITY MODELS OF CARE

Course Description
Students critically examine models of care and sources of knowledge in community nursing practice including public health, community home health and primary healthcare. Applying principles of primary healthcare, social justice, and equity, students critique how policy, practice, culture and societal norms impact health of the individual, family, community and population.

~~Antirequisite(s): Nursing 2220A/B.~~

Prerequisite(s): Registration in Year 1 of the Western-Fanshawe Collaborative BScN Program or the Compressed Time Frame BScN Program

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1180A/B
HOLISTIC HEALTH ASSESSMENT II: SYSTEMATIC HEALTH ASSESSMENT

Course Description
In this course, application of clinical judgement models provide students a framework to convey information from health assessments as a foundational part of nursing practice. Conducting a focused examination of clients using a system based approach enables students to utilize theoretical components of health assessment in the laboratory environment.

Prerequisite(s): Nursing 1080A/B, with a grade of 65% or greater**.**

Extra Information: 2 lecture hours and **2 laboratory hours** ~~Laboratory Practice~~.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1190A/B
ENACTING SOCIAL JUSTICE & EQUITY IN NURSING PRACTICE

Course Description
Introduction to social determinants of health, social justice and health equity are foundational components in this course. Impacts of policy, politics, power, and privilege are investigated to understand how historic healthcare system inequities continue to disadvantage and marginalize specific populations. The impact of colonizing practices is threaded throughout the course.

~~Antirequisite(s): Nursing 1070A/B and Nursing 1170A/B.~~

Prerequisite(s): Registration in Year 1 of the Western-Fanshawe Collaborative BScN Program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1201A/B
FOUNDATIONS OF NURSING PRACTICE

Course Description
The philosophical, theoretical and ethical tenets of the nursing profession are essential components to understanding the professional nursing role. In this course students are introduced to the history, image and framework of nursing practice, self-regulation, nursing organizations, self-awareness and emotional intelligence, interprofessional collaboration, the nurse-client relationship, and professional communication.

~~Antirequisite(s): the former Nursing 1200W/X.~~

Prerequisite(s): Registration in the Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1330A/B
HUMAN ANATOMY FOR NURSING STUDENTS

Course Description
A gross anatomical description of the systemic structure and function of the human body. Emphasis will be placed on clinical nursing applications.

Antirequisite(s): Anatomy and Cell Biology 2200A/B; Health Sciences 1300A/B; Health Sciences 2300A/B, the former Health Sciences 2330A/B, Kinesiology 1060A/B, Kinesiology 2222A/B. Note: Nursing 1330A/B must be taken if any of these antirequisite courses have been completed with a grade less than 60%.

Prerequisite(s): Registration in Year 1 of the Western-Fanshawe Collaborative BScN Program.

Extra Information: 3 theory hours**, 1 laboratory hour**.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 1335A/B
HEALTH ASSESSMENT

Course Description
In this course application of clinical judgement models provide students a framework to convey information from health assessments as a foundational part of nursing practice. Conducting a focused examination of clients using a system based approach enables students to utilize theoretical components of health assessment in the laboratory environment.

Antirequisite(s): ~~the former Nursing 1222A/B, the former Nursing 1225A/B,~~ Nursing 1180A/B.

Prerequisite(s): Registration in **the** Compressed Time Frame BScN program.

Extra Information: 2 ~~asynchronous online~~ lecture hours, 2 laboratory hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2010A/B
SPECIAL TOPICS IN NURSING

Course Description
Selected topics in Nursing. Topic and course description available in the Undergraduate Programs Office.

~~Antirequisite(s): Antirequisites and/or additional prerequisites to be determined based on the topic offered.~~

Prerequisite(s): Registration in the Western-Fanshawe Collaborative BScN Program or **the** Compressed Time Frame BScN Program.

Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2231A/B
LABORATORY & SIMULATION: SUPPORTIVE CARE FOR CLIENTS WITH NON-EMERGENT HEALTH ISSUES

Course Description
Using laboratory and simulated practice, students utilize nursing knowledge and skill in client safety and evidence-informed practice to support health. Issues of care delivery focusing on unique and diverse individual responses, beliefs and building capacity for restoration of health are components of the course.

Prerequisite(s): Registration in Year 2 **of the** Western-Fanshawe Collaborative BScN program.

Extra Information: Laboratory and Simulated Practice, Pass/Fail.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2270A/B
NURSING CARE FOR OLDER ADULTS

Course Description
Aging is a major factor impacting healthcare delivery in the 21st century, and older adults are the core consumers of health care. In this course, students apply clinical decision-making by correlating physiologic, psychological and environmental interactions with older adults while focusing on cultural, social, ethical, and legal concepts of care.

Prerequisite(s): Registration in Year 2 of the Western-Fanshawe Collaborative BScN Program. ~~Corequisite(s): Nursing 2271A/B.~~

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2271A/B
LABORATORY & CLINICAL APPLICATION: ENGAGEMENT IN CARE

Course Description
Students are introduced to the fundamentals of nursing practice by employing physical and communication skills in the care delivery for older adults in laboratory and practice settings. A focus on building relationships, the nursing role, and system transformation will be examined.

Prerequisite(s): Registration in ~~the~~ Year 2 **of the** Western-Fanshawe Collaborative BScN program.

Extra Information: Laboratory and Clinical Practice, Pass/Fail.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2440A/B
PATHOPHYSIOLOGY

Course Description
Students will analyze the development of human disease by exploring common health related problems including the age-related, genetic, environmental, and behavioural influences on disease development. While further developing critical thinking in nursing care, changes to the structure and function of tissue and organs and resultant clinical manifestations will be examined.

Antirequisite(s): Pathology 2420A/B.

Prerequisite(s): One of Nursing 1330A/B, Kinesiology 1060A/B, Kinesiology 2222A/B, Health Sciences 2300A/B, Anatomy and Cell Biology 2200A/B; AND one of Physiology 1020, Physiology 1021, Physiology 2130, Physiology and Pharmacology 2000, or registration in **the** Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2500Q/R/S/T
LABORATORY: MEDICATION ADMINISTRATION

Course Description
This course focuses on safe, effective and ethical administration of medications.

Prerequisite(s): Registration in **the** Compressed Time Frame BScN program.

Extra Information: Laboratory Practice, 6 weeks. Pass/Fail.
Course Weight: 0.25

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2600A/B
MENTAL HEALTH CARE

Course Description
Students are introduced to the nursing role in providing mental health care emphasizing awareness, prevalence and stigma associated with mental health challenges across the lifespan from a strength-based perspective.

Prerequisite(s): Registration in **the** Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2630A/B
NURSING CARE FOR CLIENTS WITH ACUTE AND CHRONIC HEALTH CHALLENGES I

Course Description
The complexity of health issues requires students to utilize multiple sources of information to understand how these conditions impact the individual, family, and society. Using clinical reasoning, focusing on integration of assessment, students develop knowledge and skill in client-centred care planning for optimal health outcomes.

~~Antirequisite(s): The former Nursing 3600W/X.~~

Prerequisite(s): Registration in Year 2 of the Western-Fanshawe Collaborative BScN program, or the Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 2660Q/R/S/T
SIMULATION: MENTAL HEALTH

Course Description
Students will apply their knowledge and skills with clients experiencing mental health challenges. Practice will take place in a simulated environment.

Prerequisite(s): Registration in **the** Compressed Time Frame BScN program.

Extra Information: Simulated Practice, Pass/Fail.
Course Weight: 0.25

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3010A/B
SPECIAL TOPICS IN NURSING

Course Description
Selected topics in Nursing. Topic and course description available in the Undergraduate Programs Office.

~~Antirequisite(s): Antirequisites and/or additional prerequisites to be determined based on the topic offered.~~

Prerequisite(s): Registration in the Western-Fanshawe Collaborative BScN Program or **the** Compressed Time Frame BScN Program.

Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3310A/B
HEALTH IN A GLOBAL CONTEXT

Course Description
Understanding how contextual factors impact health in countries or regions with limited resources is important for understanding the nurse's role in advancing health policy in a local and global perspective. Through examining current events analyze issues of social justice in health and health care.

Prerequisite(s): Registration in Year 3 **or 4** of the Western-Fanshawe Collaborative BScN program, or the Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3311A/B
PROFESSIONAL PRACTICE IN GLOBAL CONTEXT

Course Description
A supervised practicum in which students will provide culturally-appropriate care. Health promotion, caring, mutual goal-setting, social justice, and advocacy will be addressed in situations of limited resources. Preparatory and follow-up activities are required.

~~Antirequisite(s): Health Sciences 3251F/G.~~

Prerequisite(s): ~~Nursing 3310A/B, p~~ **P**ermission of the ~~Program Office,~~ **Arthur Labatt Family** School of Nursing.

Extra Information: 4 weeks, 40 hours/week, Summer term.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3400A/B
APPROACHES TO MENTAL HEALTH CARE

Course Description
~~This course c~~**C**overs foundational concepts of mental health and nursing care in the context of mental illness, including addictions. Key course principles include health promotion, a recovery orientation, trauma and violence-informed care, stigma reduction, and the continuum of mental health. Learning includes participatory engagement in mental health assessment and therapeutic communication.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 or 4 of the Western-Fanshawe Collaborative BScN Program or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3410A/B
GERONTOLOGY: CARE OF THE OLDER ADULT AND THEIR FAMILIES

Course Description
This course examines concepts associated with caring for the geriatric population through a holistic, strengths-based lens. Students will focus on common health syndromes, social factors influencing health, and family considerations, to provide the context for addressing the unique care needs of the aging adult.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 or 4 of the Western-Fanshawe Collaborative BScN Program or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3430A/B
PERINATAL HEALTH – THROUGH THE CHILD BEARING CONTINUUM

Course Description
~~The promotion of perinatal health is an integral component of professional nursing practice.~~ This course provides a philosophical and theoretical foundation for understanding individual, newborn, and family health issues through~~out the childbearing continuum from~~ preconception, pregnancy, labor, birth, neonatal transition to six weeks postpartum ~~and for developing nursing interventions to promote perinatal and newborn health~~. **Applications to the development of nursing interventions that promote perinatal and newborn health are also discussed.**

Prerequisite(s): Registration in ~~y~~**Y**ear 3 or 4 of the Western-Fanshawe Collaborative BScN Program or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3440A/B
ONCOLOGY – CARE OF INDIVIDUALS AND FAMILIES THROUGH THE CANCER CARE CONTINUUM

Course Description
This course will provide opportunities to develop an understanding of the cancer care continuum for clients and families. Students will focus on key concepts related to prevention, screening, diagnosis, management, palliation and survivorship within oncology care.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 or 4 of the Western-Fanshawe Collaborative BScN Program or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3450A/B
THE ROLE OF THE HOME CARE NURSE WITHIN PATIENT/CAREGIVER ENVIRONMENTS

Course Description
This course ~~will~~ explore**s** the roles that nurses perform in home care nursing practice. Exploration ~~will be~~ **is** guided through two mid-range theories and the application of the Canadian Home Care Nursing Practice Competencies. Learners will gain an understanding of ~~both~~ similarities and differences between nursing roles in hospitals and home care nursing practice.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 or 4 of the Western-Fanshawe Collaborative BScN Program or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3456A/B
INDIGENOUS HEALTH: THE INFLUENCE OF POLICY AND PRACTICES

Course Description
This course will provide an interprofessional learning environment with opportunities for students to critically examine and reflect on Indigenous health and health care practices. Health policy concepts will be embedded within historical, social, cultural and political realities.

Prerequisite(s): ~~Registration in the Faculty of Health Sciences or permission of the Arthur Labatt Family School of Nursing.~~ **Registration in Year 3 of the Western-Fanshawe Collaborative BScN Program or the Compressed Time Frame BScN program.**

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3460A/B
DEVELOPMENT OF NURSING PRACTICE WITHIN PATIENT CAREGIVER ENVIRONMENTS

Course Description
This course ~~will~~ explore**s** the realities of providing care within the setting in which patients and their caregivers live and work. Learners will explore levels of risk and safety for patients, family members and the nurse through learning activities designed as composites of situational experiences commonly faced by home care nurses.

Prerequisite(s): Nursing 3450A/B, or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3470A/B
MANAGEMENT OF CARE WITHIN HOME CARE PRACTICE

Course Description
~~This course p~~**P**rovides simulated learning in the application of common nursing practice skills within a variety of home**-**based situations. Students ~~will~~ learn how to make autonomous decisions and how to adapt to unique situations ~~that normally are~~ not **typically** experienced in hospital-based practice. ~~Simulated practice p~~**P**rovides a ~~"~~safe~~"~~ learning environment to practice skills and learn from peer**s** ~~evaluation~~.

Prerequisite(s): Nursing 3450A/B and Nursing 3460A/B, or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3480A/B
PEDIATRICS: CARE OF CHILDREN AND THEIR FAMILIES

Course Description
Pediatric nursing is dedicated to the health and care of young people, ranging from babies to teenagers. Children, as patients, have unique healthcare needs that require specialized knowledge and expertise in their growth, illness, and injury.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 or 4 of the Western-Fanshawe Collaborative BScN Program or permission of the Arthur Labatt Family School of Nursing.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3630A/B
NURSING CARE FOR CLIENTS WITH ACUTE AND CHRONIC HEALTH CHALLENGES II

Course Description
Changing health needs of clients across the life span requires critical thinking, application of individualized care, integration of health assessment, evidence-informed practices and diverse client support from an interprofessional team. Client safety and client-centred practices using nursing approach form the basis of this course.

~~Antirequisite(s): The former Nursing 3600W/X.~~

Prerequisite(s): Nursing 2630A/B; Registration in Year 3 of the Western-Fanshawe Collaborative BScN Program or the Compressed Time Frame BScN program. ~~Corequisite(s): Nursing 3900A/B or 3911A/B.~~

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3700Q/R/S/T
PROFESSIONAL PRACTICE I: CLIENTS WITH HEALTH CHALLENGES

Course Description
Students will apply theory and integrate concepts related to health promotion and caring with clients experiencing health challenges. The focus of this course is the acquisition of nursing skills, utilizations of technological interventions, and application of evidence informed practice.

Prerequisite(s): Registration in Compressed Time Frame BScN program.

Extra Information: 4 laboratory hours. Pass/Fail. ~~All 2000-level courses in the program must be completed successfully before enrolling in 3000-level courses.~~
Course Weight: 0.25

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3820A/B
MICROBIOLOGY AND IMMUNOLOGY FOR NURSING STUDENTS

Course Description
The host immune response to microorganisms, the biology of microorganisms with disease-causing potential and clinical aspects of infectious diseases will be covered. The role and professional attitude of the nurse in prevention, detection and control of infections will be emphasized.

Prerequisite(s): Registration in Year 3 of the Western-Fanshawe Collaborative BScN Program or the Compressed Time Frame BScN Program.

Extra Information: 2 lecture hours. ~~Enrolment is limited to students~~ ~~Registration in year 3 of the Western-Fanshawe Collaborative BScN Program and the or the Compressed Time Frame BScN Program.~~
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3900A/B
CLINICAL APPLICATION: NURSING CARE OF CLIENTS WITH HEALTH CHALLENGES

Course Description
Students will apply and integrate theory while providing nursing care to clients experiencing episodic health challenges in a hospital setting.

Prerequisite(s): Registration in **the** Compressed Time Frame BScN program. ~~Corequisite(s): Nursing 3630A/B.~~

Extra Information: Clinical Practice, Pass/Fail.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3910A/B
HEALTH PROMOTION & CARING: CLIENTS WITH HEALTH CHALLENGES I

Course Description
This course provides students with opportunity to extend their understanding of health promotion to the care of adults and children experiencing acute and chronic health challenges.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 of the Western-Fanshawe Collaborative BScN Program. **Corequisite(s):** Nursing 3911A/B.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3911A/B
CLINICAL APPLICATION: ENGAGING IN CRITICAL THINKING

Course Description
Utilizing therapeutic communication and nursing knowledge and skills, students apply patient-centred practices for clients with acute health challenges in hospital settings. Through provision of care and health promotion activities students work with the interprofessional healthcare team to integrate applicable theoretical perspectives into nursing care for these clients.

Prerequisite(s): Registration in ~~y~~**Y**ear 3 of the Western-Fanshawe Collaborative BScN Program. ~~Corequisite(s): Nursing 3630A/B.~~

Extra Information: Clinical Practice, Pass/Fail.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3920A/B
NURSING CARE OF CLIENTS WITH MENTAL HEALTH AND ILLNESS

Course Description
Using a recovery model approach, students implement techniques to assist in the care and management of individuals living with mental illness. Students learn to navigate the complexities of intersectoral, intergovernmental structures and policies that limit access to mental health services using cultural safety knowledge and trauma and violence-informed approaches.

Prerequisite(s): ~~Nursing 3910A/B or Nursing 3630A/B with a grade of 65% or higher and a PASS in Nursing 3911A/B.~~ **Registration in Year 3 of the Western-Fanshawe Collaborative BScN Program.** ~~Corequisite(s): Nursing 3921A/B.~~

Extra Information: 3 lecture hours and Simulated Practice.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 3921A/B
CLINICAL APPLICATION: MANAGING CLIENT CARE

Course Description
In a variety of healthcare settings, students will apply and integrate theory related to the care of clients with a range of complex and concurrent health challenges. Additionally, students will gain insights into a variety of nursing roles and clients' and families' experiences and the nature of illness.

Prerequisite(s): ~~Nursing 3910A/B or Nursing 3630A/B with a grade of 65% or higher and A PASS in Nursing 3911A/B.~~ **Registration in Year 3 of the Western-Fanshawe Collaborative BScN Program.** ~~Corequisite(s): Nursing 3920A/B.~~

Extra Information: Clinical Practice, Pass/Fail.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4010A/B
SPECIAL TOPICS IN NURSING

Course Description
Selected topics in Nursing. Topic and course description available in the Undergraduate Programs Office.

Antirequisite(s): Antirequisites and/or additional prerequisites to be determined based on the topic offered.

Prerequisite(s): Registration in the Western-Fanshawe Collaborative BScN Program or **the** Compressed Time Frame BScN Program.

Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4140W/X
SPECIAL TOPICS IN NURSING

Course Description
Selected topics in Nursing. Topic and course description available in the Undergraduate Programs Office.

Antirequisite(s): Antirequisites and/or additional prerequisites to be determined based on the topic offered.

Prerequisite(s): Registration in the Western-Fanshawe Collaborative BScN Program or **the** Compressed Time Frame BScN Program.

Course Weight: 1.00

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4320A/B
PROFESSIONAL ETHICAL AND LEGAL OBLIGATIONS: A CRITICAL APPRAISAL

Course Description
Students critically examine the professional, ethical, and legal accountabilities in nursing to practice safely, competently, compassionately, and ethically. A deep exploration of professional practice standards, nursing legislation, codes of ethics and ethical theories will enable students to apply these core principles to their nursing practice.

Prerequisite(s): Registration in **Year 3 or** 4 of the Western-Fanshawe Collaborative BScN program or **the** Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4400A/B
ADVANCED CONCEPTS FOR PROFESSIONAL PRACTICE

Course Description
This course will assist students to integrate multiple sources of knowledge gained in the program to engage in in-depth exploration of health/illness issues.

Prerequisite(s): Registration in Year 4 of the Western-Fanshawe Collaborative BScN program or **the** Compressed Time Frame BScN program.

Extra Information: 3 lecture hours. ~~All 3000-level courses in the program must be completed successfully before enrolling in 4000-level courses.~~
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4401W/X
INTEGRATION OF ADVANCED AND COMPLEX CONCEPTS FOR NURSING PRACTICE

Course Description
Students integrate multiple sources of knowledge and practice application to engage in management of complex health conditions. Recognition of urgent and rapidly changing client scenarios is practiced through use of critical thinking to implement interventions that improve client outcomes.

~~Antirequisite(s): Nursing 4400A/B.~~

Prerequisite(s): Registration in Year 4 of the Western-Fanshawe Collaborative BScN program or **the** Compressed Time Frame BScN program.

Extra Information: 6 lecture hours.
Course Weight: 1.00

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4410A/B
CLINICAL APPLICATION: APPLYING ADVANCED CARE CONCEPTS

Course Description
With a deeper understanding of the healthcare system and integrating principles of health equity, students will engage with clients and families experiencing health/illness challenges. Students will apply concepts learned through the program at an advanced level to work with clients and families as members within the interprofessional team.

Prerequisite(s): Registration in Year 4 of the Western-Fanshawe Collaborative BScN or **the** Compressed Time Frame BScN program. ~~Corequisite: Nursing 4401W/X.~~

Extra Information: Clinical Practice, Pass/Fail.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4440A/B
NURSES AS LEADERS IN SYSTEM TRANSFORMATION

Course Description
Students analyze the role of nursing in shaping and influencing transformation across the healthcare system by focusing on contemporary issues in nursing, healthcare and health policy. The essential role of leadership in current and future nursing practice and healthcare change is explored.

Prerequisite(s): Registration in Year 4 of the Western-Fanshawe Collaborative BScN program or **the** Compressed Time Frame BScN program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4451W/X
OPERATING ROOM INTEGRATIVE PRACTICUM

Course Description
Students work to synthesize knowledge and experience gained throughout the program, specifically in the Operating Room. Students focus on gaining proficiency in evidence-informed practice, developing leadership skills and independence, and creating an individual philosophy of practice. Ultimately, students work towards the Association of Operating Room Nurses (AORN) credentialing.

Prerequisite(s): ~~Nursing 4410A/B;~~ Registration in Year 4 of the Western-Fanshawe Collaborative BScN program or **the** Compressed Time Frame BScN program.

Extra Information: Clinical Practice, Pass/Fail.
Course Weight: 2.00

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4461W/X
INTEGRATIVE PRACTICUM

Course Description
In this course students work with a preceptor to synthesize knowledge and experience gained throughout the program. Students will focus on gaining proficiency in evidence-informed practice, developing leadership skills and independence, and creating an individual philosophy of practice.

Prerequisite(s): Registration in Year 4 of the Western-Fanshawe Collaborative BScN program or **the** Compressed Time Frame BScN program.

Extra Information: Clinical Practice, Pass/Fail.
Course Weight: 2.00

Course Revision – Effective March 1, 2025, the following change(s) be made:

NURSING 4500W/X
OPERATING ROOM NURSING

Course Description
Explore the fundamental principles and practices of perioperative nursing. Students will learn to scrub, gown, glove, and mask using strict aseptic technique. Lab practice will include draping and skin preparation. Students will be introduced to the selection and use of surgical instruments, supplies, and equipment used in the surgical suite.

~~Antirequisite(s): Nursing 4140W/X from 2013-14 to 2015-16.~~

Prerequisite(s): Registration in Year 4 of the Western-Fanshawe Collaborative BScN program **or the Compressed Time Frame Program**.

Course Weight: 1.00

SCHULICH SCHOOL OF MEDICINE & DENTISTRY

BASIC MEDICAL SCIENCES UNDERGRADUATE EDUCATION

Course Introduction – Effective September 1, 2025, the following course be introduced:

MEDICAL SCIENCES 3391A/B
TRUTH AND LIES IN BIOMEDICAL BIG DATA

(Short Title: Biomedical Big Data)

Course Description
Design of high throughput experiments, analysis of the resulting large datasets, installation and use of standard bioinformatic programs, collection of clean datasets from private and public sources, execution of exploratory and analytical analyses. Critical thinking, open science, data-sharing and reproducible analysis, and acquisition of practical skills will be common themes.

Antirequisite(s): Medical Bioinformatics 3100A/B, Computer Science 4461A/B.

Prerequisite(s): Biochemistry 2280A; Biology 2581A/B; either Biology 2244A/B or Statistical Sciences 2244A/B.

Extra Information: Blended course, 1 lecture hour, 1 lab/tutorial hour, 1 hour online instruction.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

MEDICAL SCIENCES 4000E
PARTNERING FOR IMPACT IN MEDICAL SCIENCES

(Short Title: Partnering for Impact)

Course Description
An experiential learning course in which students actively develop and apply research and project skills, both independently and collaboratively, by engaging with partners in a community, clinical, or industry setting.

Antirequisite(s): Anatomy and Cell Biology 4480E, Biochemistry 4483E, Biochemistry 4484E, Biochemistry 4955E, Epidemiology and Biostatistics 4900E, Medical Bioinformatics 4980E, Medical Biophysics 4970E, Medical Sciences 4990E, Medical Sciences 4995E, Microbiology and Immunology 4970E, One Health 4980E, Pathology 4980E, Physiology and Pharmacology 4980E.

Prerequisite(s): Registration in Year 4 of the Honours BMSc (Double Majors) degree.

Extra Information: 8-10 hours per week.
Course Weight: 1.00

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL SCIENCES 3990E
INTERDISCIPLINARY MEDICAL SCIENCES LABORATORY

Course Description
In this laboratory course, students will focus on molecular, tissue, and systems-level research practices across various medical science disciplines. Major topics include experimental design; practical laboratory skills; data analysis and interpretation; and scientific literacy and communication. Students will complete tasks both independently and collaboratively, and engage in reflective practice.

Antirequisite(s): Medical Sciences 3991F, **Physiology and Pharmacology 3000E,** the former Medical Sciences 3900F/G/Z.

Prerequisite(s): either Biology 2244A/B or Statistical Sciences 2244A/B; Biology 2290F/G; and registration ~~in Year 3 of an Honours Specialization or Specialization~~ in **a module in** Interdisciplinary Medical Sciences (IMS).

Extra Information: 2 lecture/tutorial hours or equivalent online or in-person delivery/week and 3 laboratory hours/week.
Course Weight: 1.00

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL SCIENCES 3991F
MEDICAL SCIENCES LABORATORY

Course Description
In this laboratory course, students will focus on molecular, tissue, and systems-level research practices across various medical science disciplines. Major topics include experimental design; practical laboratory skills; data analysis and interpretation; and scientific literacy and communication. Students will complete tasks both independently and collaboratively and engage in reflective practice.

Antirequisite(s): Medical Sciences 3990E, **Physiology and Pharmacology 3000E** ~~the former Medical Sciences 3900F/G/Z~~.

Prerequisite(s): one of Biology 2244A/B, Statistical Sciences 2244A/B, **Psychology 2812A/B or the former** Psychology 2810; and registration in Year 3 of an Honours Specialization in Neuroscience.

Extra Information: 2 lecture/tutorial hours or equivalent online or in-person delivery/week and 3 laboratory hours/week.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

SPECIALIZATION IN INTERDISCIPLINARY MEDICAL SCIENCES (IMS)

This module leads to a Bachelor of Medical Sciences (BMSc) degree. See BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM for more information.

Admission Requirements

Admission to this Specialization module occurs in Year 3 and requires admission to Year 3 of the Bachelor of Medical Sciences (BMSc) Program. Students will usually complete MEDICAL SCIENCES FIRST ENTRY (Medical Sciences 1 and 2) prior to admission to the Specialization module.

The 1000-level half courses listed below must each be completed with a mark of at least 60%:

1.0 course~~s~~: Biology 1001A~~*~~ and Biology 1002B~~*~~.
1.0 course~~s~~: Chemistry 1301A/B and Chemistry 1302A/B.
0.5 course from: Calculus 1000A/B, Calculus 1500A/B.
0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.
0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.
0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

~~* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

The courses below must be completed with a minimum mark of 60% in each prior to admission to the Specialization module in Year 3. These courses will also be used towards the Module requirements. See ADMISSION TO THE BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM and MODULES OFFERED IN THE BMSc PROGRAM for additional requirements (averages, course load, etc.).

0.5 course: Biochemistry 2280A.
1.5 courses: Biology 2290F/G, Biology 2382A/B, Biology 2581A/B.
0.5 course: Chemistry 2213A/B.
0.5 course from: Biology 2244A/B or Statistical Sciences 2244A/B.

Module
9.5 courses:

0.5 course: Biochemistry 2280A.
1.5 courses: Biology 2290F/G, Biology 2382A/B, Biology 2581A/B.
0.5 course: Chemistry 2213A/B.
0.5 course from: Biology 2244A/B, Statistical Sciences 2244A/B.
2.0 courses from Group 1 (these 2.0 Group 1 courses cannot all be from the same subject area, e.g., these 2.0 Group 1 courses cannot all be Anatomy and Cell Biology courses).
1.0 additional course from Groups 1, 2, and courses numbered 2100-3999 in Chemistry (up to a maximum of an additional 0.5 course in Chemistry).
1.0 course from: Biochemistry 3380G, Medical Biophysics 3980E, Medical Sciences 3990E, Microbiology and Immunology 3610F, Microbiology and Immunology 3620G, Physiology and Pharmacology 3000E, an additional 0.5 course from Group 1 or 2, or the former Medical Biophysics 3970Z.
~~2.0 additional courses from: courses from Groups 1-3 and courses numbered 2100 -3999 in Chemistry. These 2.0 courses must include 0.5 – 1.0 course from Group 3. A maximum of 1.0 course from Group 3 and a maximum of 0.5 course in Chemistry can be included within these 2.0 courses.~~
0.5 course: Medical Sciences 4931F/G.
2.0 additional courses at the 4000-level from at least two of the following subject areas: Anatomy and Cell Biology, Biochemistry, Biostatistics, Epidemiology, Medical Bioinformatics, Medical Biophysics, Medical Sciences, Microbiology and Immunology, One Health, Pathology, Pharmacology, Physiology, Physiology and Pharmacology. Note: a maximum of 1.5 of these 4000-level courses can be selected from one subject area.

Group 1: Anatomy and Cell Biology 2200A/B, Anatomy and Cell Biology 3200A/B, Anatomy and Cell Biology 3309, Biochemistry 3381A, Biochemistry 3382A, Biostatistics 3100A, Biostatistics 3110B, Epidemiology 2200A/B, Epidemiology 3200A, Medical Biophysics 3330F, Medical Biophysics 3501A, Medical Biophysics 3467B, Medical Biophysics 3503G, Medical Biophysics 3720A, Microbiology and Immunology 2500A/B, Microbiology and Immunology 3200B, Microbiology and Immunology 3300B, Microbiology and Immunology 3400A, Pathology 3500, Pharmacology 3620, Physiology 3120, Physiology 3140A, the former Medical Biophysics 3505F, the former Medical Biophysics 3507G, the former Microbiology and Immunology 3100A.

Group 2 (see Notes below): Anatomy and Cell Biology 3201A/B, Anatomy and Cell Biology 3329A/B, Biochemistry 3385B, Biochemistry 3386B, Biochemistry 3390B, **Biochemistry 3392F/G,** Epidemiology 3210B, Epidemiology 3315B, Epidemiology 3330F/G, Medical Bioinformatics 3100A/B, Medical Biophysics 3518B, Medical Biophysics 3820B, **Medical Sciences 3391A/B,** Microbiology and Immunology 3500B, Neuroscience 2000, One Health 3300A/B, One Health 3600A/B, ~~Pharmacology 2060A/B,~~ the former Medical Biophysics 3645A/B.

~~Group 3: Biochemistry 3380G, Medical Biophysics 3980E, Medical Sciences 3990E, Microbiology and Immunology 3610F, Microbiology and Immunology~~

~~3620G, Physiology and Pharmacology 3000E, the former Medical Sciences 3900F/G/Z, the former Medical Biophysics 3970Z.~~

Note~~s~~:

~~1. Chemistry 2223B is a prerequisite for the following Group 1 and 3 courses: Biochemistry 3381A, Biochemistry 3382A and Microbiology and Immunology 3610F.~~
~~2.~~ See UNDERGRADUATE COURSE INFORMATION for course requisites and the BMSc website for information about constraints (priority and restricted access) for all basic medical science courses.

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN MEDICAL SCIENCES

Admission to this module is available only to students in degrees other than Bachelor of Medical Sciences (BMSc) degrees. The Major in Medical Sciences cannot be completed in combination with any of the following Majors in a Bachelor of Science degree: Biochemistry, Epidemiology and Biostatistics, Medical Biophysics, Medical Cell Biology, Microbiology and Immunology, One Health, Pharmacology, Physiology.

ADMISSION REQUIREMENTS

Students admitted to the BMSc Program who are interested in an interdisciplinary Major should see the MAJOR IN INTERDISCIPLINARY MEDICAL SCIENCES (IMS).

Completion of first-year requirements, including a mark of at least 60% in each of the 3.0 (full or half) principal courses below:

1.0 course: Biology 1001A and Biology 1002B*.
1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.
1.0 course**: from: Applied Mathematics 1201A/B, Calculus 1000A/B or Calculus 1500A/B, Calculus 1301A/B or Calculus 1501A/B, Data Science 1000A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Statistical Sciences 1024A/B.

0.5 course in physics with a minimum mark of 60% from: Physics 1201A/B***, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

~~* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

** the former Applied Mathematics 1413 may be used in place of the 1.0 mathematics course listed above.

Note: Students considering a BMSc module must take Calculus 1000A/B or Calculus 1500A/B for admission.

*** Physics 1101A/B with a mark of at least 80% may be used in place of Physics 1201A/B. Note that admission to all other modules offered by the basic medical science departments requires either Physics 1201A/B or Physics 1501A/B, and one of Computer Science 1026A/B, Physics 1202A/B or Physics 1502A/B, and substitutions will be not permitted.

Module
6.0 courses:

0.5 course: Biochemistry 2280A.
0.5 course from: Chemistry 2213A/B, Chemistry 2273A.
0.5 course from: Biology 2244A/B, Statistical Sciences 2244A/B.
1.0 course from: Biology 2290F/G, Biology 2382A/B, Biology 2581A/B.
3.0 courses from: Groups 1 and 2 with a minimum of 1.0 course selected from Group 1 **and a minimum of 1.0 at the 3000-level**. ~~A maximum of 2.0 courses from one subject area (e.g. a maximum of 2.0 courses in Biochemistry) can be used towards this Group requirement.~~
0.5 course from: **Biology or** Chemistry numbered 2100-3999 or an additional 0.5 course from Group 1 or 2.

Group 1: Anatomy and Cell Biology 2200A/B, Anatomy and Cell Biology 3200A/B, Anatomy and Cell Biology 3309, Biochemistry 3381A, Biochemistry 3382A, Biostatistics 3100A, Biostatistics 3110B, Epidemiology 2200A/B, Epidemiology 3200A, Medical Biophysics 3330F, Medical Biophysics 3501A, Medical Biophysics 3467B, Medical Biophysics 3503G, Medical Biophysics 3720A, Microbiology and Immunology 2500A/B, Microbiology and Immunology 3200B, Microbiology and Immunology 3300B, Microbiology and Immunology 3400A, Pathology 3500, Pharmacology 3620, Physiology 3120, Physiology 3140A, the former Medical Biophysics 3505F, the former Medical Biophysics 3507G, the former Microbiology and Immunology 3100A.

Group 2 (see Notes below): Anatomy and Cell Biology 3201A/B, Anatomy and Cell Biology 3329A/B, Biochemistry 3385B, Biochemistry 3386B, Biochemistry 3390B, **Biochemistry 3392F/G,** Epidemiology 3210B, Epidemiology 3315B, Epidemiology 3330F/G, Medical Bioinformatics 3100A/B, Medical Biophysics 3518B, Medical Biophysics 3820B, **Medical Sciences 3391A/B,** Microbiology and Immunology 3500B, Neuroscience 2000, One Health 3300A/B, One Health 3600A/B, ~~Pharmacology 2060A/B,~~ the former Medical Biophysics 3645A/B.

Notes:

1. It is not mandatory to complete any Group 2 courses in the Major in Medical Sciences. A maximum of 1.0 of the following courses may be used in place of up to 1.0 course from Group 2: 4000-level half courses from the basic medical sciences (Anatomy and Cell Biology, Biochemistry, Biostatistics, Epidemiology, Medical Bioinformatics, Medical Biophysics, Medical Sciences, Microbiology and Immunology, One Health, Pathology, Pharmacology, Physiology) ~~and courses listed in Group 3 of the Honours Specialization in IMS~~ **the following Laboratory courses: Biochemistry 3380G, Medical Biophysics 3980E, Medical Sciences 3990E, Microbiology and Immunology 3610F, Microbiology and Immunology 3620G, Physiology and Pharmacology 3000E, the former Medical Biophysics 3970Z**.

2. See UNDERGRADUATE COURSE INFORMATION for the course requisites and the BMSc website for information about constraints (priority and restricted access) for all basic medical science courses (www.schulich.uwo.ca/bmsc)

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN MEDICAL SCIENCES

A Minor in Medical Sciences may not be completed in a degree containing a module in Interdisciplinary Medical Science (IMS).

ADMISSION REQUIREMENTS

Completion of first-year requirements, including the following courses with a mark of at least 60% in each (full or half) course:

1.0 course: Biology 1001A and Biology 1002B.
1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.

~~Note for Admission Requirements:~~
~~Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

Module
4.0 courses:

0.5 course: Biochemistry 2280A.
0.5 course: Chemistry 2213A/B.
1.0 course from: Biology 2290F/G, Biology 2382A/B, Biology 2581A/B.
2.0 courses from: Groups 1 and 2 (see below), with at least 1.0 course selected from Group 1 and no more than 1.5 courses from one subject area.

Group 1: Anatomy and Cell Biology 2200A/B, Anatomy and Cell Biology 3200A/B, Anatomy and Cell Biology 3309, Biochemistry 3381A, Biochemistry 3382A, Biostatistics 3100A, Biostatistics 3110B, Epidemiology 2200A/B, Epidemiology 3200A, Medical Biophysics 3330F, Medical Biophysics 3501A, Medical Biophysics 3467B, Medical Biophysics 3503G, Medical Biophysics 3720A, Microbiology and Immunology 2500A/B, Microbiology and Immunology 3200B, Microbiology and Immunology 3300B, Microbiology and Immunology 3400A, Pathology 3500, Pharmacology 3620, Physiology 3120, Physiology 3140A, the former Medical Biophysics 3505F, the former Medical Biophysics 3507G, the former Microbiology and Immunology 3100A.

Group 2: Anatomy and Cell Biology 3201A/B, Anatomy and Cell Biology 3329A/B, Biochemistry 3385B, Biochemistry 3386B, Biochemistry 3390B, **Biochemistry 3392F/G,** Epidemiology 3210B, Epidemiology 3315B, Epidemiology 3330F/G, Medical Bioinformatics 3100A/B, Medical Biophysics 3518B, Medical Biophysics 3820B, **Medical Sciences 3391A/B,** Microbiology

and Immunology 3500B, Neuroscience 2000, One Health 3300A/B, One Health 3600A/B, ~~Pharmacology 2060A/B,~~ the former Medical Biophysics 3645A/B.

Notes:

1. See UNDERGRADUATE COURSE INFORMATION for the course requisites and the BMSc website for information about constraints (priority and restricted access) for all basic medical science courses.
2. A maximum of 1.0 3000-level basic medical science laboratory course may be used in place of 1.0 course from Group 2 in the Minor in Medical Sciences.

DEPARTMENT OF BIOCHEMISTRY

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

CHEMICAL BIOLOGY 4500E
RESEARCH PROJECT IN CHEMICAL BIOLOGY

Course Description
The major laboratory course for students in the Honours Specialization in Chemical Biology. Under the supervision of a faculty member, students will work on an independent research project, submit reports, write a thesis describing research findings and present and defend their findings in an oral seminar. Professional development activities include: skills for critical analysis of research, writing technical reports, ethics.

Antirequisite(s): Biochemistry 4483E, Chemistry 4491E, the former Biochemistry 4486E.

Prerequisite(s): Biochemistry 3380G, Biochemistry 3381A and Biochemistry 3382A with marks of at least 70% in each; Chemistry 2271A, Chemistry 2272F, Chemistry 2273A, Chemistry 2374A, Chemistry 2281G, Chemistry 2283G, Chemistry 2384B; 1.0 course from: Chemistry 3371F, Chemistry 3372F/G, Chemistry 3373F, Chemistry 3374A/B; and registration in Year 4 of the Honours Specialization in Chemical Biology.

Extra Information: 15 laboratory hours/week.
Course Weight: 1.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOCHEMISTRY 2280A
BIOCHEMISTRY AND MOLECULAR BIOLOGY

Course Description
An introduction to biochemistry with emphasis on protein structure and function, intermediary metabolism and nucleic acid structure and function.

Antirequisite(s): Biochemistry 2288A.

Prerequisite(s): ~~Either~~ Biology 1001A ~~or Biology 1201A~~ and ~~either~~ Biology 1002B ~~or Biology 1202B~~; **(**Chemistry 1301A/B and Chemistry 1302A/B**) or (Chemistry 1302A/B and registration in a Biomedical Engineering Program)**. Integrated Science 1001X can be used as a prerequisite in place of Biology 1002B and Chemistry 1302A/B.

Extra Information: 3 lecture hours. Note: It is strongly recommended that a course in organic chemistry be taken previously or concurrently (e.g. Chemistry 2213A/B or Chemistry 2273A).
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOCHEMISTRY 3381A
PROTEIN STRUCTURE AND ENZYME FUNCTION

Course Description
Students gain a deeper understanding of protein structure and folding, enzyme-mediated chemical reactions, protein regulation of networks, and methods for protein structure prediction and analysis. Students develop their ability to use computational tools to represent and analyze proteins, interpret data from primary research papers, and communicate ideas to professional audiences.

Prerequisite(s): A minimum mark of 65% in either Biochemistry 2280A or Biochemistry 2288A; **and** a minimum mark of 60% in either Chemistry 2213A/B or Chemistry 2273A~~; and a minimum mark of 60% in either Chemistry 2223B or Chemistry 2283G~~. **Pre-or Corequisite(s): It is recommended, but not required, that either Chemistry 2223B or Chemistry 2283G be taken previously**.

Extra Information: 3 lecture hours, 1 seminar hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOCHEMISTRY 3382A
BIOCHEMICAL REGULATION

Course Description
Among the topics discussed will be regulation of DNA replication, regulation of gene expression, epigenetic mechanisms of gene regulation, and application of regulatory principles in synthetic biology.

Prerequisite(s): A minimum mark of 65% in ~~either~~ Biochemistry 2280A ~~or Biochemistry 2288A~~; **and** a minimum mark of 60% in either Chemistry 2213A/B or Chemistry 2273A~~; and a minimum mark of 60% in either Chemistry 2223B or Chemistry 2283G~~. **Pre-or Corequisite(s): It is recommended, but not required, that either Chemistry 2223B or Chemistry 2283G be taken previously**.

Extra Information: 3 lecture hours, 1 seminar hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOCHEMISTRY 4450A
MOLECULAR GENETICS OF HUMAN CANCER

Course Description
Mutation of specific human genes subverts normal cellular physiology creating characteristic alterations called 'hallmarks' that fuel the development of cancer. The underlying processes that alter cellular pathways and gene function will be discussed. Cancer models and molecular therapies will be related to the cancer hallmarks.

Antirequisite(s): **The former** Pathology 4450A.

Prerequisite(s): Biology 2581A/B; and either Biochemistry 3381A or Pathology 3500**.**

Extra Information: 2 lecture hours ~~Cross-listed with Pathology 4450A~~.
Course Weight: 0.50

DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOSTATISTICS 3100A
BIOSTATISTICAL METHODS FOR EPIDEMIOLOGY

Course Description
Epidemiologists work with categorical data (e.g. healthy, sick, dead) and with time to event data (e.g. time to death). This course introduces analytic methods of such data, expanding on aspects of study design and analysis introduced in Epidemiology 2200A/B. It requires a prior introduction to analyses of continuous data.

Prerequisite(s): Biology 2244A/B or Statistical Sciences 2244A/B, and Epidemiology 2200A/B, with a minimum mark of ~~75~~**60**% in each.

Extra Information: 2 lecture hours and 1 laboratory hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOSTATISTICS 3110B
MULTIVARIABLE METHODS

Course Description
This course covers frequently used multivariable regression models (linear for continuous outcomes and logistic for binary outcomes) in health research. By the end of the course students will (i) understand and critique applications of regression models appearing in the biomedical literature and (ii) carry out their own analyses.

Prerequisite(s): Biostatistics 3100A and Epidemiology 3200A, with a minimum mark of ~~70~~**60**% in each.

Extra Information: 2 lecture hours and 1 laboratory hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

BIOSTATISTICS 3400A
INTRODUCTION TO BIOSTATISTICAL COMPUTING

Course Description
This course introduces students to the use of both commercial software (i.e., SAS and Stata) and open-source software (R via RStudio) for data management, exploratory data analysis, data generation, and inferential statistical analysis. Examples will be used throughout the course to illustrate the advantages and disadvantages of each software.

Prerequisite(s): Biology 2244A/B or Statistical Sciences 2244A/B, and Epidemiology 2200A/B with marks of at least ~~75~~**60**% in each~~; and registration in a module in Epidemiology and Biostatistics~~.

Extra Information: 2 lecture hours, 1 laboratory hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EPIDEMIOLOGY 2200A/B
INTRODUCTION TO EPIDEMIOLOGY

Course Description
The calculation and interpretation of basic epidemiologic measures, the strengths and weaknesses of various study designs, and the critical appraisal of published medical and epidemiologic studies.

Pre-or Corequisite(s): One of the following: Biology 2244A/B, **Health Sciences 3801A/B,** Psychology 2811A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B, the former Psychology 2810.

Extra Information: 2 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EPIDEMIOLOGY 3200A
EPIDEMIOLOGY II

Course Description
An examination of the major research issues in epidemiology studies focusing on principal sources of bias (sampling, measurement, and confounding) and other technical issues (e.g. effect-measure modification) in estimates of exposure-outcome associations. Understanding general and design-specific issues is accomplished through critical appraisal of published papers in selected topic areas.

Prerequisite(s): One of Biology 2244A/B or Statistical Sciences 2244A/B with a mark of at least ~~75~~**60**%; Epidemiology 2200A/B, or the former Epidemiology and Biostatistics 2200A/B, with a mark of at least ~~75~~**60**%. **Pre-or Corequisite(s):** Biostatistics 3100A.

Extra Information: 2 lecture hours and 1 laboratory hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EPIDEMIOLOGY 3210B
INTERMEDIATE EPIDEMIOLOGY

Course Description
This course will teach the fundamentals of observational study designs (case-control and cohort). The course will be problem-based and taught using published studies as examples. Course assignments and projects will include development and critique of protocols.

Prerequisite(s): Biostatistics 3100A and Epidemiology 3200A, with a minimum mark of ~~70~~**60**% in each.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EPIDEMIOLOGY 3330F/G
SYSTEMIC REVIEWS AND META-ANALYSIS

Course Description
Introduction to the process of systematic reviews and meta-analysis, including formulating a research question, defining inclusion and exclusion criteria for the search, literature search method, data extraction, qualitative and quantitative synthesis of evidence.

Pre-or Corequisite(s): Biology 2244A/B or Statistical Sciences 2244A/B, and Epidemiology 2200A/B, with a minimum mark of ~~75~~**60**% in each.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EPIDEMIOLOGY 4600A
INTRODUCTION TO HEALTH ECONOMICS

Course Description
A course focusing on the economics concepts and methods relevant to understand health policy decisions from an economic perspective. This course will cover following topics: microeconomic tools for health economics, demand for and supply of healthcare, health insurance, market failure in the health sector and methods of economic evaluation.

Prerequisite(s): Biostatistics 3100A and Epidemiology 3200A, with a minimum mark of ~~70~~**60**% in each.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EPIDEMIOLOGY 4615B
HEALTH ECONOMIC EVALUATION

Course Description
This course will cover topics related to the theoretical economic foundation of cost-utility and cost-benefit analyses, and decision analytic models and statistical methods for the economic evaluation of health interventions. Application of Decision Tree Model, Markov Model and Microsimulation Model and uncertainty in health & medicine will be considered.

Prerequisite(s): One of Epidemiology 4600A or Economics 2261A/B, with a mark of at least ~~70~~**60**%.

Extra Information: 2 lecture hours and 1 laboratory hour.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN EPIDEMIOLOGY AND BIOSTATISTICS

A degree containing this module normally requires 4 years for completion. The Major in Epidemiology and Biostatistics can be completed in any regular undergraduate degree. When combined with one of the following Majors, however, this module leads to a Bachelor of Medical Sciences (BMSc) degree: Biochemistry, Interdisciplinary Medical Sciences (IMS), Medical Biophysics, Medical Cell Biology, Microbiology and Immunology, Pathology, Pharmacology or Physiology. See BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM for more information.

Admission Requirements

Both 1000- and 2000-level courses are included in the Admission Requirements for students pursuing the Major in Epidemiology and Biostatistics in BMSc degrees, since admission to the BMSc Program does not occur until Year 3. The Admission Requirements for students pursuing the Major in other regular undergraduate degrees include only 1000-level courses, since students may register in the Major in Year 2 in non-BMSc degrees. The Module requirements (below) are the same for all students completing the Major.

Admission Requirements for students pursuing this Major module in a Bachelor of Medical Sciences (BMSc) degree:

Admission to this Major module occurs in Year 3 upon admission to Year 3 of the Bachelor of Medical Sciences (BMSc) Program. Students will usually complete MEDICAL SCIENCES FIRST ENTRY (Medical Sciences 1 and 2) prior to admission to a BMSc degree.

The 1000-level half courses listed below must each be completed with a mark of at least 60%:

1.0 course: Biology 1001A* and Biology 1002B*.
1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.
0.5 course from: Calculus 1000A/B, Calculus 1500A/B.
0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.
0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.
0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

~~* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

The **2000-level** courses below must be completed with a minimum mark of 60% in each ~~(unless otherwise indicated)~~ prior to admission to the Major module in Year 3. These courses will also be used towards the Module requirements. See ADMISSION TO THE BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM and MODULES OFFERED IN THE BMSc PROGRAM for additional requirements (averages, course load, etc.).

0.5 course: Biochemistry 2280A.
0.5 course from: Biology 2382A/B, Biology 2581A/B.
0.5 course from: Biology 2244A/B or Statistical Sciences 2244A/B~~, with a mark of at least 75%~~.
0.5 course: Epidemiology 2200A/B ~~with a mark of at least 75%~~.

Admission Requirements for students pursuing this Major module in a degree other than a Bachelor of Medical Sciences (BMSc) degree:

Completion of first-year requirements, including a mark of at least 60% in each of the 3.0 (full or half) principal courses below:

1.0 course: Biology 1001A~~*~~ and Biology 1002B~~*~~.
1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.
0.5 course from: Calculus 1000A/B, Calculus 1500A/B.
0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.

The following must be completed by the end of second year, with a mark of at least 60% in each half course:

0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.
0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

~~* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

Module
6.0 courses:

0.5 course: Biochemistry 2280A.

0.5 course from: Biology 2382A/B, Biology 2581A/B.
0.5 course from: Biology 2244A/B or Statistical Sciences 2244A/B, with a minimum mark of ~~75~~**60**%.
0.5 course: Epidemiology 2200A/B with a minimum mark of ~~75~~**60**%.
1.0 course: Biostatistics 3100A with a minimum mark of ~~70~~**60**%, Biostatistics 3110B.
1.0 course: Epidemiology 3200A with a minimum mark of ~~70~~**60**%, Epidemiology 3210B.
1.0 course from: Epidemiology 4310A/B, Epidemiology 4320A/B, Epidemiology 4600A, Epidemiology 4615B~~, the former Biostatistics 4115B (see note 2)~~.
1.0 course from: Biology 2485A/B, Biology 3592A/B, Microbiology and Immunology 2500A/B, **Microbiology and Immunology 3500B**, Pathology 3500, Pathology 4400A/B, additional courses in Biostatistics and Epidemiology at the 3000- and 4000-level.

Notes:

~~1. To register in Year 4 of a degree containing this module, students must satisfy the Admission Requirements for the module and have the prerequisite to register in at least two of Epidemiology 4310A/B, Epidemiology 4320A/B, Epidemiology 4600A, and Epidemiology 4615B.~~
~~2. Epidemiology 4615B requires a minimum mark of 70% in either Epidemiology 4600A or Economics 2261A/B.~~
~~3~~**1**. BSc and BMSc students completing the Major in Epidemiology and Biostatistics in addition to another module must adhere to the Common Course Policy if the same courses at the 2000- to 4000-level appear in more than one of the modules (see faculty websites for details).
~~4~~**2**. Students are encouraged to take at least one of the following ethics courses as options: Philosophy 2715F/G – Health Care Ethics, Philosophy 3730F/G – Research Ethics.

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN EPIDEMIOLOGY AND BIOSTATISTICS

Admission Requirements

Completion of first-year requirements, including the following courses with a mark of at least 60% in each half course:

1.0 course from: Applied Mathematics 1201A/B, Calculus 1000A/B or Calculus 1500A/B, Calculus 1301A/B or Calculus 1501A/B, Data Science 1000A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Statistical Sciences 1024A/B.

Module

4.0 courses:

0.5 course from: Biology 2244A/B or Statistical Sciences 2244A/B, with a minimum mark of ~~75~~**60**%.
0.5 course: Epidemiology 2200A/B with a minimum mark of ~~75~~**60**%.
1.0 course: Biostatistics 3100A with a minimum mark of ~~70~~**60**%, Biostatistics 3110B.
1.0 course: Epidemiology 3200A with a minimum mark of ~~70~~**60**%, Epidemiology 3210B.
1.0 additional course at the 3000-level or above in Biostatistics or Epidemiology.

DEPARTMENT OF MEDICAL BIOPHYSICS

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL BIOPHYSICS 2500A/B
INTRODUCTION TO BIOPHYSICS FOR ADVANCING MEDICINE

Course Description
An introduction to the discipline of Medical Biophysics is developed through lectures on key introductory concepts and techniques used in Medical Biophysics research, real-world research seminars given by faculty members, and interactive in-class activities. Research areas include magnetic resonance imaging, molecular imaging, microvascular oxygen transport, and cancer radiation therapy.

Antirequisite(s): ~~Medical Biophysics 4445A/B, Medical Biophysics 4455A/B, Medical Biophysics 4467A/B, Medical Biophysics 4475A/B, Medical Biophysics 4518B, Medical Biophysics 4535A/B, Medical Biophysics 4700B.~~ **Cannot be taken for credit if any course in Medical Biophysics has been successfully completed.**

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL BIOPHYSICS 3503G
FUNDAMENTALS OF DIGITAL IMAGING

Course Description
Concepts of images relevant to all imaging modalities. Image formation and capture including digital cameras and the eye, pixels, aliasing, resolution, contrast, sensitivity, specificity, ROC, window/level, dynamic range, RGB, spectroscopy. Image compression and quality, quantitative analysis based on imaging software and principles of quantitative stereology.

Prerequisite(s): One of Calculus 1000A/B, Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B, plus one of Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B, **Numerical and Mathematical Methods 1411A/B,** Numerical and Mathematical Methods 1414A/B or the former Applied Mathematics 1414A/B, or the former Applied Mathematics 1413; one of Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B. Integrated Science 1001X can be used as a prerequisite in place of Calculus 1301A/B. Typically taken in third year, this course is also open to second-year students with an average of at least 70% in first year.

Extra Information: 2 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL BIOPHYSICS 3518B
INTRODUCTION TO MOLECULAR IMAGING

Course Description
An overview of the concepts and techniques used in molecular imaging research. Research areas include genetic engineering of imaging contrast, molecular probes for positron emission tomography, cell tracking using magnetic resonance imaging, and optical molecular imaging of tissue dynamics.

Antirequisite(s): The former Medical Biophysics 2582B.

Prerequisite(s): Biochemistry 2280A; 1.0 course from Applied Mathematics 1201A/B, Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Data Science 1000A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, **Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B,** Statistical Sciences 1024A/B; and 0.5 course from Physics 1201A/B, **Physics 1401A/B,** Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B. Integrated Science 1001X can be used as a prerequisite in place of Calculus 1301A/B. Open only to students who are registered in Years 3 or 4.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL BIOPHYSICS 4455A/B
BIOLOGICAL CONTROL SYSTEMS

Course Description
An introduction to linear systems and control theory as applied to organ system regulation and adaptation. Emphasis is placed on biophysical models of the respiratory and cardiovascular systems, and interactions with medical devices.

Prerequisite(s): Medical Biophysics 3501A ~~and Medical Biophysics 3505F~~; or permission of the department.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MEDICAL BIOPHYSICS 4700B
CASE STUDIES IN MEDICAL BIOPHYSICS

Course Description
Case studies will highlight specific issues that medical biophysics covers while introducing important concepts and the multidisciplinary nature of research, professionals, and applications in the field. The key themes are cardiovascular and circulatory health, molecular and cellular imaging for research, diagnostic imaging in humans, cancer radiotherapy, and medical images processing.

Prerequisite(s): Registration in Year 4 of an Honours degree that contains a module offered by the Department of Medical Biophysics or~~, with special permission,~~ registration in Year 4 of a BESc degree or**, with special permission,** an Honours BHSc, BMSc or BSc degree.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN MEDICAL BIOPHYSICS

A degree containing this module normally requires 4 years for completion. When combined with one of the following Majors, this module leads to a Bachelor of Medical Sciences (BMSc) degree: Biochemistry, Epidemiology and Biostatistics, Interdisciplinary Medical Sciences (IMS), Medical Cell Biology, Microbiology and Immunology, Pathology, Pharmacology or Physiology. See BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM for more information.

Admission Requirements

Both 1000- and 2000-level courses are included in the Admission Requirements for students pursuing the Major in Medical Biophysics in BMSc degrees, since admission to the BMSc Program does not occur until Year 3. The Admission Requirements for students pursuing the Major in other regular undergraduate degrees include only 1000-level courses, since students may register in the Major in Year 2 in non-BMSc degrees. The Module requirements (below) are the same for all students completing the Major.

Note: students are encouraged to take Medical Biophysics 2500A/B in second year if they want an introduction to the discipline of Medical Biophysics or are interested in learning how biophysics concepts are applied in translational health research.

Admission Requirements for students pursuing this Major module in a Bachelor of Medical Sciences (BMSc) degree:

Admission to this Major module occurs in Year 3 and requires admission to Year 3 of the Bachelor of Medical Sciences (BMSc) Program. Students will usually complete MEDICAL SCIENCES FIRST ENTRY (Medical Sciences 1 and 2) prior to admission to Double Major modules in a BMSc degree.

1.0 course: Biology 1001A* and Biology 1002B*.
1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.
0.5 course from: Calculus 1000A/B, Calculus 1500A/B.
0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.
0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.
0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

~~* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

The course below must be completed with a minimum mark of 60% prior to admission to the Major module in Year 3. This course will also be used towards the Module requirements. See ADMISSION TO THE BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM and MODULES OFFERED IN THE BMSc PROGRAM for additional requirements (averages, course load, etc.).

0.5 course from: Biology 2382A/B, Biology 2581A/B, Chemistry 2214A/B, Computer Science 2035A/B, Data Science 2000A/B, Data Science 2100A.

Admission Requirements for students pursuing this Major module in a degree other than a Bachelor of Medical Sciences (BMSc) degree:

Completion of first-year requirements, including a mark of at least 60% in each of the 4.0 (full or half) principal courses below:

1.0 course: Biology 1001A~~*~~ and Biology 1002B~~*~~ (may be deferred until Year 2).
1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.
0.5 course from: Calculus 1000A/B, Calculus 1500A/B.
0.5 course from: **Applied Mathematics 1201A/B,** Calculus 1301A/B, Calculus 1501A/B**, Mathematics 1600A/B**.
0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.
0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

~~* Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

Module
6.0 courses:

0.5 course from: Biology 2382A/B, Biology 2581A/B, Chemistry 2214A/B, Computer Science 2035A/B, Data Science 2000A/B, Data Science 2100A.
1.0 course from: Physics 2101A/B and Physics 2102A/B, or Physiology 2130 or Physiology and Pharmacology 2000.
1.0 course: Medical Biophysics 3330F, Medical Biophysics 3501A.
1.0 course: Medical Biophysics 3980E.
1.5 courses from: Medical Biophysics 3467B, Medical Biophysics 3503G, Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B.

1.0 course from: Medical Biophysics 4330A, Medical Biophysics 4445A/B (but only if Medical Biophysics 3503G was not taken to satisfy a requirement above), Medical Biophysics 4467B, Medical Biophysics 4501A, Medical Biophysics 4518B, Medical Biophysics 4720B, Medical Biophysics 4730A/B.

Notes:

1. Physics 2101A/B and Physics 2102A/B include the following courses in their prerequisites, with marks of at least 60%: one of Physics 1202A/B, Physics 1402A/B or Physics 1502A/B, and one of Calculus 1301A/B or Calculus 1501A/B.
2. It is recommended that 1.0 of the following modular courses be completed prior to Year 3: (Physics 2101A/B and Physics 2102A/B) or Physiology 2130 or Physiology and Pharmacology 2000.

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN MEDICAL BIOPHYSICS

Admission Requirements

Completion of first-year requirements, including the following courses with a minimum mark of 60% in each full or half course:

0.5 course from: Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.
0.5 course from: Computer Science 1026A/B, **Engineering Science 1036A/B,** Physics 1202A/B, Physics 1402A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.
0.5 course from: Calculus 1000A/B, Calculus 1500A/B**, Numerical and Mathematical Methods 1412A/B**.
0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B**, Numerical and Mathematical Methods 1411A/B, Numerical and Mathematical Methods 1414A/B**.
~~1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.~~
~~1.0 course: Biology 1001A and Biology 1002B (may be deferred until Year 2). Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.~~

Module
4.0 courses:

0.5 course from: Computer Science 2035A/B, Data Science 2000A/B, Data Science 2100A.
2.5 courses: Medical Biophysics 3330F, Medical Biophysics 3467B, Medical Biophysics 3501A, Medical Biophysics 3503G, Medical Biophysics 3518B, Medical Biophysics 3720A, Medical Biophysics 3820B, the former Medical Biophysics 3505F, the former Medical Biophysics 3507G.
1.0 courses from: Biochemistry 2280A, Biology 2382A/B, Biology 2581A/B, Calculus 2302A/B, Calculus 2303A/B, Chemistry 2214A/B, Computer Science 1025A/B or Computer Science 1026A/B or Engineering Science 1036A/B, Mathematics 1600A/B, additional courses in Medical Biophysics at the 2000- and/or 3000-level, Physics 2101A/B, Physics 2102A/B.

Notes:
1. ~~s~~**S**tudents are encouraged to take Medical Biophysics 2500A/B in second year if they want an introduction to the discipline of Medical Biophysics or are interested in learning how biophysics concepts are applied in translational health research.

2. Students may not use any of Computer Science 1026A/B, Engineering Science 1036A/B or Mathematics 1600A/B to satisfy the Modular Requirements if they were used to satisfy the Admission Requirements.

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

Course Revision – Effective September 1, 2025, the following change(s) be made:

MICROBIOLOGY AND IMMUNOLOGY 3610F
MICROBIOLOGY LABORATORY

Course Description
Laboratory techniques used in the broad discipline of microbiology, including bacteriology and virology. Laboratory exercises include the staining, biochemical characteristics and identification of live bacteria, plus genetic techniques used to study microorganisms. This course runs parallel to, and applies basic principles acquired in, Microbiology and Immunology 3100A.

Prerequisite(s): Biochemistry 2280A**,** ~~with a mark of at least 65%;~~ Biology 2581A/B**,**~~;~~ Chemistry 2213A**/B** and ~~Chemistry 2223B~~ **Microbiology and Immunology 2500A/B** with marks of at least 60% in each; ~~Microbiology and Immunology 2500A/B with a mark of at least 60%;~~ **Pre-or Corequisite(s):** Microbiology and Immunology 3400A or the former Microbiology and Immunology 3100A. It is recommended, but not required, that Biochemistry 3381A be taken previously or concurrently.

Extra Information: 1 lecture/tutorial hour, 3 laboratory hours.
Course Weight: 0.50

DEPARTMENT OF PHYSIOLOGY AND PHARMACOLOGY

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHYSIOLOGY 4420A/B
PHYSIOLOGY OF EXERCISE

Course Description
A study of the integration of neural, metabolic and vascular factors that compete to simultaneously regulate blood pressure and blood flow during physical exercise in health and disease.

Antirequisite(s): Kinesiology 4432A/B.

Prerequisite(s): Physiology 3120, and Physiology 3140a and Physiology And Pharmacology 3000E.

Extra Information: 3 lecture hours. Priority to students in Honours Specialization modules in Physiology, and Physiology and Pharmacology.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHYSIOLOGY 4620A/B
REPRODUCTIVE ENDOCRINOLOGY

Course Description
Selected topics in reproduction and its endocrine regulation.

Prerequisite(s): Physiology 3120, Physiology 3140A and Physiology and Pharmacology 3000E; or Physiology 3120 (with a mark of at least 75%) and Physiology 3140A.

Extra Information: 2 lecture hours.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHYSIOLOGY 4660A/B
BODY WATER AND RENAL PHYSIOLOGY

Course Description
Body fluid compartments and kidney function.

Prerequisite(s): Physiology 3120, and Physiology 3140A and Physiology and Pharmacology 3000E.

Extra Information: 2 lecture hours.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHYSIOLOGY 4710A/B
PHYSIOLOGY OF THE SENSES

Course Description
This course covers the physiology of the senses in the primate, including touch, taste, pain, smell, vision, motion and hearing. Each sensory modality is used to exemplify a particular aspect of sensory processing from stimulus encoding at the periphery to the feature extraction in the sensory cerebral cortex.

Prerequisite(s): Physiology 3120; or Neuroscience 2000, Physiology 3140A and registration in Year 4 of an Honours Specialization in Neuroscience.

Extra Information: 2 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHYSIOLOGY AND PHARMACOLOGY 4999E
ADVANCED RESEARCH

Course Description
Laboratory course intended for students interested in pursuing graduate-level research in Physiology and/or Pharmacology, including lectures on experimental design, statistical analysis, oral and written scientific communication, critical evaluation of scientific literature, and preparation of grant proposals; literature review of research area; attending research seminars; development of an independent research project.

Antirequisite(s): the former Pharmacology 4999E, the former Physiology 4999E.

Prerequisite(s): Physiology and Pharmacology 4980E; and permission of the department.

Extra Information: 12 laboratory hours per week, 2 hours per week in class.
Course Weight: 1.00

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHARMACOLOGY 4340A/B
GENE EXPRESSION PATHWAYS IN DRUG DISCOVERY

Course Description
This course explores how drugs and endogenous compounds mediate their biological effects through nuclear signalling pathways. The emphasis will be on aspects of gene regulation and signalling by nuclear hormone receptors - a family of ligand dependent transcription factors essential for normal metabolism, development and reproduction.

Prerequisite(s): Biochemistry 2280A and registration in Year 4, or permission of the Department.

Extra Information: 2 lecture hours.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHARMACOLOGY 4430A/B
PHARMACOLOGY AND TOXICOLOGY OF NATURAL SOURCED MEDICINES

Course Description
Contemporary use of medicines derived from natural sources. Regulatory aspects of their use and the scientific basis for assessment of efficacy, quality, and safety of these products will be discussed. The mechanism(s) of beneficial and harmful effects of selected natural health products, including herb-drug interactions, will be included.

Prerequisite(s): Pharmacology 3620 or permission of the Department.

Extra Information: 2 lecture hours per week, 1 tutorial hour.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2025, the following course be withdrawn:

PHARMACOLOGY 4540A/B
FROM GENES TO THERAPIES: TARGETED STRATEGIES IN MEDICINE

Course Description
An examination of how mechanisms that regulate cell proliferation affect normal tissue repair and cause abnormalities, such as tumour formation and poor regeneration after injury. The course explores the basic molecular and cellular processes of relevant human disorders and the clinically useful pharmacological and regenerative medical therapies.

Prerequisite(s): Physiology 3120; Physiology 3140A or Biology 3316A/B; Pharmacology 3620; or permission of the Department.

Extra information: 2.0 lecture hours.
Course weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHYSIOLOGY 3140A
CELLULAR PHYSIOLOGY

Course Description
A survey of principles of cellular physiology including membrane, ion channel, receptor, and transport protein function, and signal transduction mechanisms.

Prerequisite(s): one of Physics 1201A/B, **Physics 1401A/B,** Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; 1.0 course from: Calculus 1000A/B or Calculus 1500A/B, Calculus 1301A/B or Calculus 1501A/B, Data Science 1000A/B, Mathematics 1600A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Statistical Sciences 1024A/B, Applied Mathematics 1201A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, the former Applied Mathematics 1412A/B, the former Applied Mathematics 1413, the former Applied Mathematics 1414A/B; ~~one of~~ Biology 1001A ~~or Biology 1201A~~ and ~~one of~~ Biology 1002B ~~or Biology 1202B~~; or permission of the department. Integrated Science 1001X can be used as a prerequisite in place of Biology 1002B and Calculus 1301A/B. It is strongly recommended that Biochemistry 2280A and Biology 2382A/B be taken prior to Physiology 3140A. Open only to students who are registered in Years 3 or 4.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHYSIOLOGY AND PHARMACOLOGY 3000E
PHYSIOLOGY AND PHARMACOLOGY LABORATORY

Course Description
A laboratory course that introduces students to research techniques, methodologies, data analysis and scientific communication. Students will select different experiments covering the major systems in the human body and examine them from a physiological or pharmacological perspective. This course is intended for students interested in physiology and/or pharmacology.

Antirequisite(s): Medical Sciences 3990E.

Prerequisite(s): Biochemistry 2280A; ~~either Chemistry 2213A/B or Chemistry 2273A; one of Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B; and 1.0 course from: Applied Mathematics 1201A/B, Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Mathematics 1600A/B. Integrated Science 1001X can be used as a prerequisite in place of Calculus 1301A/B. A minimum average of 75% in the Fall/Winter of the most recent academic year is required. Open only to students who are registered in Years 3 or 4~~ **and registration in either a Major or Honours Specialization module offered by the Department of Physiology and Pharmacology or in the Honours Specialization in Biochemistry and Cancer Biology**. **Pre-or Corequisite(s):** Either Physiology 3120 or Pharmacology 3620 (Physiology 3120 is strongly recommended).

Extra Information: 3 lecture/laboratory hours.
Course Weight: 1.00

DON WRIGHT FACULTY OF MUSIC

DEPARTMENT OF MUSIC EDUCATION

Course Revision – Effective September 1, 2025, the following change(s) be made:

MUSIC 2832A/B
CHORAL TECHNIQUES

Course Description
A practice-oriented lab for interpretation, development of expressive range, and development of leadership skills in a choral music setting.

Prerequisite(s): Music 2831A/B.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

MUSIC 3841A/B
INSTRUMENTAL CONDUCTING

Course Description
An introduction to rehearsal strategies and the fundamentals of **instrumental** conducting. ~~Emphasis will be placed on the remediation of instrument-specific performance problems, modeling, terminology, score analysis, and the physical dexterity necessary for clear and fluent conducting that is stylistically appropriate.~~

Prerequisite(s): At **least one half course from Music 2861A/B or Music 2871A/B or at** least two quarter courses from **the former** Music 2865Q/R/S/T, **the former** Music 2866Q/R/S/T, **the former** Music 2875Q/R/S/T, **the former** Music 2876Q/R/S/T.

Extra Information: 3 lecture hours.
Course Weight: 0.50

FACULTY OF SCIENCE

DEPARTMENT OF EARTH SCIENCES

Course Introduction – Effective September 1, 2025, the following course be introduced:

EARTH SCIENCES 3316A/B
IGNEOUS AND METAMORPHIC PETROLOGY

(Short Title: Petrology: Igneous Metamorphic)

Course Description
Study of igneous and metamorphic processes using rock and thin section descriptions. Discussion of factors that control mineralogy, texture, and structure of igneous and metamorphic rocks (e.g. temperature, pressure, composition, fluid activity). Use of phase equilibria and geochronology to understand rock history. Relationships between rock types and plate tectonic settings.

Antirequisite(s): Earth Sciences 3313A/B, Earth Sciences 3315A/B.

Pre-or Corequisite(s): Earth Sciences 2206A/B, Earth Sciences 2230A/B or permission of the Department.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

ENVIRONMENTAL SCIENCE 2400A/B
ENVIRONMENTAL SCIENCE IN THE FIELD

(Short Title: EnviroSci Field Course)

Course Description
A foundational field and in-class course exposing students to the interdisciplinary aspects of environmental science by studying various off-campus sites throughout the term. Students will gain hands-on and team-based learning skills by investigating the problems, processes, and results of humankind's impacts on natural systems.

Prerequisite(s): Enrollment in any Environmental Science module, Honours Specialization in Integrated Science, or permission of the Department.

Extra Information: 1 lecture hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 1083~~F/G~~A/B
LIFE ON PLANET EARTH

Course Description
~~Concepts of the development of life on Earth. Darwinian evolution and modern concepts of evolution. Genetics and evolution. Mode and rate of evolution. A survey of the vertebrate fossil record with focus on particular groups, including dinosaurs. Major extinction events in the fossil record. Origin of the geological time scale.~~
A survey of the fossil record to show key events of life evolution (e.g. origin of animals, dinosaurs, birds, mammals). The course aims to improve understanding of the history of life on Earth through introduction of concepts of life evolution, minerals, rocks, and the geological time scale.

Antirequisite(s): ~~Earth Sciences 2265A/B,~~ Earth Sciences 2266F/G.

Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective March 1, 2025, the following change(s) be made:

EARTH SCIENCES 1086~~F/G~~A/B
ORIGIN AND GEOLOGY OF THE SOLAR SYSTEM

Course Description
Our best perception of the origin of the Universe, the Milky Way Galaxy, and our Solar System, meteorites, asteroids, comets and the formation of planets. The slow growth of Planetary Science reason and analysis of hypotheses. Why and how Earth evolved along a path radically different than the other planets.

Antirequisite(s): ~~Earth Sciences 2232F/G, Astronomy 2201A/B, Astronomy 2232F/G~~ **Astronomy 2022A/B**.

Extra Information: The equivalent of 3 lecture hours per week. Offered only online ~~(see Western Distance Studies)~~.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2200A/B
~~PLATE TECTONIC THEORY, ENVIRONMENTS AND PRODUCTS~~
FUNDAMENTALS OF EARTH SCIENCES

Course Description
~~Rock types and their distribution within the Earth's crust are a result of tectonics, including continental rifting, seafloor spreading, subduction, obduction, and orogenic uplift and collapse. Lectures synthesize and explain major rock types in primary and secondary tectonic settings. Laboratories examine rocks and textures in hand specimens.~~
An overview of processes operating on and within our planet in the context of plate tectonics, characteristics and distribution of materials produced by these processes, and the economic and environmental significance of these materials to humans, including mineral and energy resources. Laboratories focus on rock identification and geologic environments.

Prerequisite(s): Any 0.5 Earth Sciences course at the 1000 level**,** or registration in ~~a Major, Specialization, or Honours Specialization~~ **any module with**in the Faculty of Science or in the Basic Medical Sciences**, or permission of the Department**.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2201A/B
STRUCTURAL GEOLOGY

Course Description
Deformation of Earth's crust; description of geological structures; construction and interpretation of geologic maps, cross sections and block diagrams; stereographic and orthographic representation of structural data; mechanical behavior of rocks; origin and tectonic significance of geological structures.

Prerequisite(s): Earth Sciences 1022A/B or Earth Sciences 2200A/B **or permission of the Department**.

Extra Information: 2 lecture hours, 3 laboratory hours. Note: Grade 12 Physics or 0.5 course in first year Physics is recommended before taking this course.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2206A/B
MINERAL SYSTEMS, CRYSTALLOGRAPHY AND OPTICS

Course Description
Introduction to mineral chemistry, crystal ~~chemistry~~ **symmetry** and mineral paragenesis, with emphasis on rock-forming minerals and ore minerals. Identification of minerals and mineral properties in hand specimen and thin section.

Pre-or Corequisite(s): Earth Sciences 1022A/B or Earth Sciences 2200A/B ~~or registration in a Materials Science module~~ **or permission of the Department**.

Extra Information: 2 lecture hours, 3 laboratory hours. ~~Note: Grade 12 Chemistry or 0.5 course in Chemistry is recommended.~~
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2230A/B
INTRODUCTION TO GEOCHEMISTRY

Course Description
Effects of temperature, pressure and bulk composition on stabilities of minerals in natural geological settings are evaluated using thermodynamic principles. Reaction rates among minerals and fluids, including the effects of natural catalysts and inhibitors, and biotic mediation are addressed. Introduction to the principles of radioisotope and stable isotope geochemistry.

Prerequisite(s): Chemistry 1301A/B and **one of Earth Sciences 1022A/B or** Earth Sciences 2200A/B**,** or permission of the Department.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2250Y
INTRODUCTORY FIELD MAPPING TECHNIQUES

Course Description
Eleven-day field camp in the vicinity of Whitefish Falls, northern Lake Huron. Students will examine Precambrian metasedimentary and Early Paleozoic sedimentary rocks, make a geological map, measure a stratigraphic section and learn techniques of paleocurrent analysis.

Pre-or Corequisite(s): Earth Sciences 1022A/B or Earth Sciences 2200A/B ~~and registration in a module or program where Earth Sciences 2250Y is mandatory~~ or permission of the Department.

Extra Information: 11-day field course typically held in May. There is an associated cost with this course, see the Department of Earth Sciences website for more information.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2260A/B
STRATIGRAPHY AND SEDIMENTOLOGY: FROM BEDS TO BASINS

Course Description
Origins of sedimentary grains. Transport processes. Characteristics of the main types of sedimentary basins. Stratigraphic methods, including litho-, allo-, bio-, chrono-, and magneto-stratigraphy. Labs include examination of sedimentary rocks, well-log correlation and seismic stratigraphic analysis. At least one field trip is organized.

Pre-or Corequisite(s): Earth Sciences 1022A/B or Earth Sciences 2200A/B **or permission of the Department**.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2265A/B
PALEOBIOLOGY AND PALEOECOLOGY

Course Description
A survey of the fossil record from bacteria, protista, calcareous algae, to invertebrate animals. Topics on each group of fossils include functional morphology, evolutionary trend, ancient living environments, contribution to sediment accumulation and reef-building, utility for dating and correlating rocks and for understanding long-term biodiversity change.

Pre-or Corequisite(s): Earth Sciences 1022A/B or Earth Sciences 2200A/B **or permission of the Department**.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 2266F/G
DINOSAUR AND OTHER VERTEBRATE EVOLUTION

Course Description
Introduction to the fossil record that documents the major steps in vertebrate evolution, including the origin and radiation of fishes, amphibians, mammal-like reptiles, dinosaurs, birds, and mammals.

~~Prerequisite(s): Completion of first-year requirements, and registration in an Earth Sciences, Biology, Anthropology, or Kinesiology module.~~

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 3313A/B
IGNEOUS PETROLOGY

Course Description
Study of igneous processes using rock and thin section descriptions (petrography). Discussion of how different compositions and conditions influence the phases present in a rock (phase equilibria). Association of different rock types with plate tectonic setting.

Antirequisite(s): Earth Sciences 3316A/B.

Prerequisite(s): Earth Sciences 2206A/B**.**

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 3315A/B
METAMORPHIC PETROLOGY

Course Description
Study of metamorphic processes using rock and thin section descriptions (petrography). Discussion of factors that control the mineralogy and physical attributes of different metamorphic rocks (e.g., temperature, pressure, composition, fluids). Use of phase equilibria and geochronology to understand metamorphic histories. Association of different rock types with plate tectonic setting.

Antirequisite(s): Earth Sciences 3316A/B.

Prerequisite(s): Earth Sciences 2230A/B and Earth Sciences 3313A/B or permission of the Department.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 3341A/B
WATERS AND GLOBAL GEOCHEMICAL CYCLES

Course Description
~~Acquisition of solutes by rain, surface and subsurface waters and their transportation and deposition in natural environments (e.g., formation of ore deposits). Natural sources of potential pollutants (e.g., heavy metals). Geochemical cycles of solutes and waters.~~
This course explores fundamental chemical cycles that shape Earth's systems. We examine how minerals influence the chemistry of rain, groundwater, and seawater, and investigate the geochemical controls on soil formation, water quality, mineral resources, and climate. The course also highlights the impact of human activities on these vital biogeochemical systems.

Prerequisite(s): Earth Sciences 2230A/B or Chemistry 1301A/B or permission of the Department.

Extra Information: 2 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 3369A/B
~~GEOMICROBIOLOGY~~ **LIFE ON THE ROCKS**

Course Description
A study of biogeochemical processes in Earth's geologic record and of bacteria interactions in contemporary systems. Topics include methods for the analysis of prokaryotes, factors affecting their community structure and function, and their relationship to geochemistry. Bacteriological culture techniques relevant to geomicrobiological research are introduced in the laboratory component.

Prerequisite(s): 1.0 course from Biology 1001A, Biology 1002B, Chemistry 1301A/B, Chemistry 1302A/B, Integrated Science 1001X.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 4001Y
~~PLANETARY SCIENCE FIELD SCHOOL~~ **PLANETARY SURFACE PROCESSES FIELD SCHOOL**

(Short Title: Planetary Science Field School)

Course Description
Field study of the geology and biology of various Moon/Mars analogue sites in North America. Lectures/seminars/practical exercises will emphasize similarities and differences between the terrestrial sites and other planetary bodies, and the subtle interactions between geology and biology at each site.

Prerequisite(s): Earth Sciences 2200A/B or permission of the department.

Extra Information: A 13-day field course typically held in early May in Arizona and Utah. Note: Students expecting to graduate in the current year's spring convocation cannot take the course. There is an associated cost with this course, see the Department of Earth Sciences website for more information.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 4461A/B
~~ADVANCED PALEONTOLOGY~~ **EVOLUTION OF ANCIENT ECOSYSTEMS**

(Short Title: Ancient Ecosystem Evolution)

Course Description
Advanced topics on ~~applications of paleontological data to reconstructions of evolutionary history, ancient environments, geochronology, and paleobiogeography~~ **the evolution of the biosphere and its interactions with the lithosphere, hydrosphere, and atmosphere in deep Earth history, with emphasis on major biotic events (innovation, radiation, mass extinction, and recovery) and their relationship to environmental change and ecosystem evolution**.

Prerequisite(s): ~~Earth Sciences 2265A/B or Earth Sciences 2266F/G~~ **Environmental Science 1021F/G, Earth Sciences 1022A/B or Earth Sciences 2200A/B, and registration in Year 3 or above, any module, or permission of the Department**.

Extra Information: 2 lecture hours, ~~3 laboratory hours~~ **2 tutorial hours**.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 4462A/B
~~GLACIAL GEOLOGY AND CLIMATE~~ **GLACIERS, ICE AND CLIMATE**

Course Description
Explore glacier types, dynamics, ~~budgets~~ **landforms, sediments, and environments**. ~~Study glacial movement and erosional depositional landforms. Examine glacial sediments, facies, environments. Review sea-ice, ice shelves, fjords, lakes, bogs, paleosols, and permafrost. Investigate Quaternary timescale, climate change, dating methods, deep-sea records, ice-core stratigraphy, and Holocene climate. Analyze climate-human interactions, ancient glaciations, and glacial resources~~ **climate change impacts on the Canadian North, permafrost, Quaternary and ancient glaciations, icebergs, sea ice, and deep-ocean records. Discover Holocene-Anthropocene climate-human interactions and glacial resources. Work on environmental site assessments and Western glacial core analysis for climate insights**.

Prerequisite(s): 0.5 course from ~~Earth Sciences 2260A/B, Earth Sciences 3314A/B, Geography 2330A/B, Geography 3334A/B,~~ **Environmental Science 1021F/G, Earth Sciences 1022A/B, Earth Sciences 2200A/B,** Geography 3350A/B, ~~the former Geography 3333A/B~~ **and registration in Year 3 or above, any module,** or permission of the Department.

Extra Information: 2 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

EARTH SCIENCES 4490E
SENIOR THESIS

Course Description
A presentation of research on a chosen problem. Original data must be generated from field or laboratory studies and analyzed using appropriate methodologies. The results must be integrated into the existing literature on the topic. Independence in the conduct and reporting of research must be demonstrated.

Antirequisite(s): Environmental Science 4970F/G, Environmental Science 4999E.

Prerequisite(s): Registration in year 4 of ~~a Specialization or~~ **an** Honours Specialization offered by the Department of Earth Sciences, or permission of the Department.

Extra Information: 1 lecture hour. **Cross-listed with Environmental Science 4999E.**
Course Weight: 1.00

Course Revision – Effective September 1, 2025, the following change(s) be made:

ENVIRONMENTAL SCIENCE 2300F/G
FOUNDATIONS IN ENVIRONMENTAL SCIENCE

Course Description
A foundational course exposing students to the interdisciplinary fields of environmental science by identifying how current environmental issues (e.g., resource extraction, climate change) are addressed by different disciplines. Sustainability metrics will also be explored. Students will work through insightful case studies and assess scientific literature from different stakeholder perspectives.

Antirequisite(s): the former Environmental Science 3300F/G.

Prerequisite(s): ~~Enrolment in any Environmental Science module, Honours Specialization in Integrated Science with Environmental Science, Honours Specialization or Major in One Health, Major in Ecosystem Health,~~ **Environmental Science 1021F/G, or any 0.5 Earth Sciences course at the 1000 level, or registration in any module within the Faculty of Science or Schulich School of Medicine and Dentistry,** or permission of the Department.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

ENVIRONMENTAL SCIENCE 3350F/G
RESEARCH TECHNIQUES IN ENVIRONMENTAL SCIENCE

Course Description
A multi-module course where a case study approach will be used to acquaint students with the research tools of environmental science, and the analysis, interpretation and presentation of environmental data.

Prerequisite(s): Environmental Science 2300F/G or the former Environmental Science 3300F/G, ~~and enrolment in any Environmental Science module, Honours Specialization in Integrated Science with Environmental Science, Honours Specialization or Major in One Health, Major in Ecosystem Health,~~ or permission of the Department.

Extra Information: 3 lecture/tutorial hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

ENVIRONMENTAL SCIENCE 4999E
~~HONOURS RESEARCH PROJECT~~ **SENIOR THESIS**

Course Description
~~A major laboratory or field project that emphasizes experimental design, instrumentation, collection and analysis of data, and communication of experimental results by oral and written presentations.~~ **A presentation of research on a chosen problem. Original data must be generated from field or laboratory studies and analyzed using appropriate methodologies. The results must be integrated into the existing literature on the topic. Independence in the conduct and reporting of research must be demonstrated.**

Antirequisite(s): Earth Sciences 4490E, Environmental Science 4970F/G~~, the former Environmental Science 4971F/G~~.

Prerequisite(s): ~~Fourth year registration in the Honours Specialization in the Environmental Science module. Students must have arranged a project with a supervisor before completing registration. In the late winter, a list of potential projects for the following academic year will be available from the Undergraduate Chair of Environmental Science.~~ **Registration in year 4 of an Honours Specialization offered by the Department of Earth Sciences, or permission of the Department.**

Extra Information: ~~Minimum 15 laboratory hours per week, and during the first term an additional 2 seminar hours per week.~~ **1 lecture hour. Cross-listed with Earth Sciences 4490E.**
Course Weight: 1.~~5~~**0**0

DEPARTMENT OF PHYSICS AND ASTRONOMY

Course Revision – Effective September 1, 2025, the following change(s) be made:

ASTRONOMY 2022A/B
THE ORIGIN OF THE UNIVERSE

Course Description
This course is designed as an introduction to current ideas about the universe. It is suitable for non-science students. Topics include the Big Bang, cosmic microwave background, origin of elements, and origin of galaxies, stars, and planetary systems.

Antirequisite(s): Astronomy 4602A/B, Earth Sciences 1086~~F/G~~**A/B**.

Extra Information: 2 lecture hours. This course cannot be used for credit in any Physics and Astronomy module other than the Minor in Conceptual Astronomy.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

ASTRONOMY 2201A/B
PLANETARY SYSTEMS

Course Description
An examination of planets and their environments, both in our own Solar System and in planetary systems around other stars. Celestial mechanics; dynamics of the Earth; the Earth-Moon System; planets, including atmospheres and interiors; satellites; comets; meteors; the interplanetary medium; detection, origin and evolution of planetary systems.

Prerequisite(s): ~~(Physics 1202A/B or Physics 1402A/B or Physics 1502A/B, or the former Physics 1029A/B or the former Physics 1302A/B);~~ **(One of either Physics 1201A/B or Physics 1401A/B or Physics 1501A/B, or the former Physics 1028A/B or the former Physics 1301A/B),** (**One of either** Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B)**,** and (**One of either** Calculus 1501A/B, or Calculus 1301A/B~~ with a minimum mark of 60%~~**, or Applied Mathematics 1201A/B with a minimum mark of 60%,** or Numerical and Mathematical Methods 1414A/B**,** or the former Applied Mathematics 1414A/B)~~, or the former Applied Mathematics 1413. Integrated Science 1001X with a minimum mark of 60% can be used in place of Physics 1202A/B and Calculus 1301A/B~~.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

ASTRONOMY 2801A/B
OBSERVING THE STARS

Course Description
The properties of stars, the building blocks of the universe, and how we obtain their characteristics. The night sky, coordinates, detectors, telescopes, stellar magnitudes and fluxes, spectra, interaction of light and matter, Hertzsprung-Russell diagram, stellar evolution, and the Sun. Introduction to astrophysics, order of magnitude estimates, astronomical nomenclature and observations.

Prerequisite(s): ~~(Physics 1202A/B or Physics 1402A/B or Physics 1502A/B, or the former Physics 1029A/B or the former Physics 1302A/B);~~ **(One of either Physics 1201A/B or Physics 1401A/B or Physics 1501A/B, or the former Physics 1028A/B or the former Physics 1301A/B),** (**One of either** Calculus 1000A/B or Calculus 1500A/B or Numerical and Mathematical Methods 1412A/B or the former Applied Mathematics 1412A/B), and (**One of either** Calculus 1501A/B, or Calculus 1301A/B, **or Applied Mathematics 1201A/B with a minimum mark of 60%,** or Numerical and Mathematical Methods 1414A/B, or the former Applied Mathematics 1414A/B)**.** ~~, or the former Applied Mathematics 1413. Integrated Science 1001X with a minimum mark of 60% can be used in place of Physics 1202A/B and Calculus 1301A/B.~~

Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHYSICS 1401A/B
PHYSICS FOR ENGINEERING STUDENTS I

Course Description
An introductory calculus-based laboratory course in physics covering the foundational principles of kinematics, force and motion, energy, linear momentum, rotation, torque and angular momentum, gravitation, fluids.

Antirequisite(s): Physics 1021, Physics 1101A/B, Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

Prerequisite(s): Grade 12U Calculus and Vectors (MCV4U) or Mathematics 0110A/B**; Grade 12U Physics (SPH4U)**. **Corequisite(s): Numerical and Mathematical Methods 1412A/B (preferred) or Calculus 1000A/B or Calculus 1500A/B or the former Applied Mathematics 1412A/B.**

Extra Information: 3 lecture hours, 3 laboratory/tutorial hours. Note: Registration is restricted to students in the Faculty of Engineering.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHYSICS 1402A/B
PHYSICS FOR ENGINEERING STUDENTS II

Course Description
An introductory calculus-based laboratory course in physics covering the foundational principles of oscillations, waves, electric fields and potential, DC circuits, magnetic fields, magnetic induction.

Antirequisite(s): Physics 1021, Physics 1102A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

Prerequisite(s): One of Physics 1401A/B **or Physics 1501A/B; Numerical and Mathematical Methods 1412A/B (preferred) or Calculus 1000A/B or Calculus 1500A/B or the former Applied Mathematics 1412A/B,** or permission of the Department.

Extra Information: 3 lecture hours, 3 laboratory/tutorial hours. Note: Registration is restricted to students in the Faculty of Engineering.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHYSICS 2070A/B
UNDERSTANDING EARTH'S ATMOSPHERE

Course Description
This course ~~is designed for non-science students and~~ examines the **earth's** atmosphere ~~in which we live~~, how it affects our everyday life, and how we in turn, as the technologically dominant earth-borne species, affect it. **This course is suitable for non-science students.** Atmospheric phenomena such as wind, temperature, composition, precipitation and electricity are used to illustrate basic physical principles.

~~Antirequisite(s): Physics 1101A/B, Physics 1201A/B, Physics 1401A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.~~

Extra Information: 2 lecture hours. ~~May not be taken for credit by students in the Faculty of Science.~~ **This course cannot be used for credit in any Physics and Astronomy module other than the Minor in Conceptual Astronomy.**
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHYSICS 2300A/B
QUANTUM COMPUTATION AND INFORMATION

Course Description
This course discusses the basics of quantum information; quantum phenomena; quantum circuits and universality; basics of computational complexity; relationship between quantum and classical complexity classes; simple quantum algorithms such as quantum Fourier transform; Shor factoring algorithm; Grover search algorithm; physical realization of quantum computation; error correction and fault tolerance.

Prerequisite(s): Physics 1202A/B or Physics 1402A/B or Physics 1502A/B or the former Physics 1302A/B, each with a minimum mark of 60%; Mathematics 1600A/B **or Mathematics 1700A/B** or Numerical and Mathematical Methods 1411A/B or the former Applied Mathematics 1411A/B, each with a minimum mark of 60%; Computer Science 1026A/B, Computer Science 2120A/B, or Engineering Science 1036A/B, each with a minimum mark of 70%, or Physics 3926F/G with a minimum mark of 60%; Applied Mathematics 2402A/B or Numerical and Mathematical Methods 2270A/B. **Pre- or Corequisite(s):** Numerical and Mathematical Methods 2276A/B or Physics 2110A/B.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN CONCEPTUAL ASTRONOMY

This Minor is especially designed for students with a general interest in Astronomy. Students enrolled in any other module offered by the Department of Physics and Astronomy cannot simultaneously be enrolled in this Minor.

Admission Requirements

Completion of first-year requirements.

Module
4.0 courses:

1.0 course: Astronomy 2021A/B, Astronomy 2022A/B.
~~0.5 course from: Astronomy 2232F/G, Earth Sciences 2232F/G.~~
~~0.5 course: Physics 2070A/B.~~
0.5 course at the 2000 level or above from the Faculty of Science.
~~1~~**2.5 course** from: Astronomy 2201A/B, Astronomy 2801A/B, **(Astronomy 2232F/G or Earth Sciences 2232F/G),** Earth Sciences 2200A/B, Earth Sciences 2240F/G, Earth Sciences 3001A/B, Earth Sciences 3312A/B, Earth Sciences 3321A/B, **Geography 2090A/B,** ~~Geography 2153A/B~~ **Philosophy 2300F/G, Philosophy 2310F/G, or Physics 2070A/B**.

Note: Some courses listed in this module have prerequisites not included in the module.

FACULTY OF SOCIAL SCIENCE

DEPARTMENT OF ANTHROPOLOGY

Course Revision – Effective September 1, 2025, the following change(s) be made:

ANTHROPOLOGY 1027A/B
INTRODUCTION TO LINGUISTICS

Course Description
Introduction to basic concepts and methods of modern linguistics. Topics include articulatory and acoustic phonetics, phonology, morphology, syntax and semantics. This course is a prerequisite for subsequent linguistics courses in the Department of Anthropology and/or the Linguistics program.

Antirequisite(s): Linguistics 1027A/B; Linguistics 2288A/B.

Extra Information: 2 lecture hours, 1 tutorial hour.
Course Weight: 0.50

DEPARTMENT OF HISTORY

Course Introduction – Effective September 1, 2025, the following course be introduced:

HISTORY 1850F/G
OBJECT LESSONS: A HISTORY OF THE WORLD IN TEN OBJECTS

(Short Title: Object Lessons)

Course Description
This course offers an introduction to world history, using ten objects from different cultures, places, and times. Each object offers a portal into its own era, revealing insights about the people who made it, and about how material culture reflects and shapes societal values, technological advancements, and historical narratives.

Extra Information: 2 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

HISTORY 3885F/G
DIGITAL RESEARCH METHODS WITH ARTIFICIAL INTELLIGENCE

(Short Title: Digital Research Methods w/ AI)

Course Description
In this course students will learn how to use large language models (generative artificial intelligence) and other computational techniques ethically and effectively to find and evaluate digital sources and use them for research purposes. No previous background in the subject area is required.

Prerequisite(s): Registration in third year or above, any module.

Extra Information: 2 hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

HISTORY 1402F/G
~~EUROPE 1715 TO 1918: AN ERA OF REVOLUTIONARY CHANGE~~
NINETEENTH-CENTURY EUROPE

Course Description
~~Examines central events and themes of European history from the start of the Enlightenment through the First World War, including: origins and impact of the French and industrial revolutions; selected political thinkers from Montesquieu to Nietzsche; German and Italian unification; working-class movements; women's emancipation movements; imperialism; the First World War.~~
This course explores sweeping changes in European society and Europe's role in global affairs during the "long nineteenth century." Topics include Enlightenment social criticism; the French Revolution in global perspective; nationalism and state consolidation; imperialist expansion into Africa and Asia; scientific and technological transformations; shifts in art and culture.

Antirequisite(s): History 1401E.

Extra Information: 2 lecture hours and 1 tutorial hour per week.
Course Weight: 0.50

DEPARTMENT OF POLITICAL SCIENCE

Course Introduction – Effective September 1, 2025, the following course be introduced:

POLITICAL SCIENCE 3211F/G
ENVIRONMENTAL POLITICS

Course Description
This course examines the politics, economics, history, and current policy debates related to environmental issues in Canada and internationally. Topics covered include: the environmental movement; national and international environmental institutions; environmental economics and policies; various business responses to environmentalism; and the politics of environmental policy in Canada and globally.

Prerequisite(s): At least one 0.5 course at the 2500 level within the Department of Political Science.

Extra Information: 2 hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

POLITICAL SCIENCE 4214F/G
AMERICAN ELECTIONS AND PRIMARIES

(Short Title: American Elections)

Course Description
This course studies U.S. congressional and presidential campaigns while paying close attention to recent and upcoming races with attention to election forecasting, electoral maps and math, and presidential campaigns, with a focus on understanding the causes of successes and failures in primary and general election campaigns.

Antirequisite(s): Political Science 4511F/G, if taken in 2019-20 or 2021-22.

Prerequisite(s): Enrolment in 3rd or 4th year Political Science or International Relations and one of Political Science 2230E, Political Science 2530F/G, Political Science 2231E, Political Science 2531F/G, Political Science 2244E, Political Science 2544F/G, Political Science 2245E, Political Science 2545F/G, International Relations 2704F/G, the former International Relations 2701E, or permission from the Department.

Extra Information: 2 hours.
Course Weight: 0.50

DEPARTMENT OF PSYCHOLOGY

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN PSYCHOLOGY – BA

Admission Requirements

Enrolment in this module is limited. Meeting the minimum requirements does not guarantee admission. Students who wish to enter the Honours Specialization in Psychology – BA module after Year 1 must have completed the following first-year requirements with no failures, and have a minimum average of 75% in 3.0 principal courses, including the following psychology and mathematics courses, plus 1.0 additional course, with no mark in these principal courses below 60%:

1.0 course from: Psychology 1000 or Psychology 1002A/B AND Psychology 1003A/B.
0.5 course: Data Science 1000A/B.
0.5 course from: Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Applied Mathematics 1201A/B, ~~the former~~ Statistical Sciences 1024A/B.

Mathematics 1228A/B is recommended.

Students who wish to enter the Honours Specialization – BA after Years 2 and 3 must have a minimum cumulative average of 75% or cumulative average in their last 10.0 courses of 75%, with no mark below 60% in the module courses. Moreover, a minimum of 60% is needed in each of the 3.0 first-year principal courses, as listed in the module Admission Requirements above.

Module
9.0 courses:

1.0 course(s) from: Psychology 2801F/G, Psychology 2802F/G, the former Psychology 2800E.
1.0 course(s) from: Psychology 2811A/B, Psychology 2812A/B, the former Psychology 2810.
0.5 course from: Psychology 2100-2299.
0.5 course from: Psychology 2300-2799.
0.5 course: Psychology 3801F/G or ~~the former~~ Psychology 3800F/G.
0.5 Research course from: Psychology 3184F/G, Psychology 3185F/G, Psychology 3285F/G, Psychology 3480F/G, Psychology 3485F/G, Psychology 3580F/G, Psychology 3780F/G, Psychology 3840F/G, Psychology 3860F/G.
0.5 course from: Psychology 3100-3299 (excluding the Research courses listed above).

0.5 course from: Psychology 3300-3799 (excluding the Research courses).
1.0 course from: Psychology 2000-3999 (excluding the Research courses).
1.0 additional course in Psychology at the 3000 level or above (excluding the Research courses).
0.5 course from: Psychology 4100-4995.
0.5 course from: Psychology 2100-4999.
1.0 course from: Psychology 4850E**, Psychology 4860E, the former Psychology 4853E**.

Progression Requirements

Students who are enrolled in the BA Honours Specialization must maintain a minimum modular average of 75%, with marks of 70% or above in Psychology 2801F/G and Psychology 2811A/B, marks of 75% or above in Psychology 2802F/G and Psychology 2812A/B, and all other module course marks 60% or above to progress in the module.

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN PSYCHOLOGY – BS~~C~~c

Admission Requirements

Enrolment in this module is limited. Meeting the minimum requirements does not guarantee admission. Students who wish to enter the Honours Specialization in Psychology - BSc module after Year 1 must have completed the following first-year requirements with no failures, and have a minimum average of 75% in 3.0 principal courses, with no mark in these principal courses below 60%:

1.0 course from: Psychology 1000 or Psychology 1002A/B AND Psychology 1003A/B.
0.5 course: Data Science 1000A/B.
0.5 course from: Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Applied Mathematics 1201A/B, the former Applied Mathematics 1413, ~~the former~~ Statistical Sciences 1024A/B.
1.0 course ~~from~~: Biology 1001A ~~or Biology 1201A~~ and Biology 1002B ~~or Biology 1202B~~.
1.0 course from: Chemistry 1301A/B, Chemistry 1302A/B, Computer Science 1025A/B, Computer Science 1026A/B, Computer Science 1027A/B, ~~the former Physics 1028A/B, the former Physics 1029A/B,~~ Physics 1201A/B, Physics 1202A/B, ~~the former Physics 1301A/B, the former Physics 1302A/B,~~ Physics 1501A/B, Physics 1502A/B**, the former Physics 1028A/B, the former Physics 1029A/B, the former Physics 1301A/B, the former Physics 1302A/B**.
1.0 option.

The principal courses include Psychology, the Data Science/Mathematics/Calculus/ Statistical Science courses and one of the other science courses.

Students who wish to enter the Honours Specialization – BSc after Years 2 and 3 must have a minimum cumulative average of 75% or cumulative average in their last 10.0 courses of 75%, with no mark below 60% in the module courses. Moreover, a minimum of 60% is needed in each of the 3.0 first-year principal courses, as listed in the module Admission Requirements above.

Module
10.0 courses:

1.0 courses from: Psychology 2801F/G, Psychology 2802F/G, the former Psychology 2800E.

1.0 courses from: Psychology 2811A/B, Psychology 2812A/B, the former Psychology 2810.
1.0 course from: Psychology 2115A/B, Psychology 2134A/B, Psychology 2135A/B, Psychology 2210A/B, Psychology 2220A/B, Psychology 2221A/B.
1.0 course from: Psychology 2300-2799.
0.5 course: Psychology 3801F/G or ~~the former~~ Psychology 3800F/G.
0.5 Research course from: Psychology 3184F/G, Psychology 3185F/G, Psychology 3285F/G, Psychology 3485F/G.
1.0 course from: Psychology 3300-3899.
1.0 course from: Psychology 3130A/B, Psychology 3138F/G, Psychology 3139A/B, Psychology 3140F/G, Psychology 3209F/G, Psychology 3221F/G, Psychology 3224A/B, Psychology 3225A/B, Psychology 3226A/B, Psychology 3228A/B, **Psychology 3254A/B,** Psychology 3230F/G, Psychology 3440F/G, Psychology 3441F/G, Psychology 3442F/G, Psychology 3443F/G, Psychology 3444F/G, the former Psychology 3223F/G.
0.5 course from: Psychology 4100-4995.
0.5 course from: Psychology 2000-4999.
1.0 course from Science/Basic Medical Sciences-approved list numbered 2100 or above (see additional science requirement below).
1.0 course from: Psychology 4850E, Psychology 4851E**, Psychology 4860E, Psychology 4861E, the former Psychology 4853E**.

Note: To fulfill the BSc requirements within the Honours Specialization in Psychology - BSc module, 6.0 of the Psychology courses must be selected from the following list: Psychology 2115A/B, Psychology 2134A/B, Psychology 2135A/B, Psychology 2210A/B, Psychology 2220A/B, Psychology 2221A/B, Psychology 2801F/G, Psychology 2802F/G, Psychology 2811A/B, Psychology 2812A/B, Psychology 3130A/B, Psychology 3138F/G, Psychology 3139A/B, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Psychology 3185F/G, Psychology 3195F/G, Psychology 3209F/G, Psychology 3221F/G, Psychology 3224A/B, Psychology 3225A/B, Psychology 3226A/B, Psychology 3228A/B, Psychology 3230F/G, Psychology 3285F/G, Psychology 3295F/G, Psychology 3440F/G, Psychology 3441F/G, Psychology 3442F/G, Psychology 3443F/G, Psychology 3444F/G, Psychology 3485F/G, Psychology 3800F/G, Psychology 4115F/G, Psychology 4190F/G, Psychology 4195F/G, Psychology 4222F/G, Psychology 4223F/G, Psychology 4224F/G, Psychology 4260F/G, Psychology 4290F/G, Psychology 4295F/G, Psychology 4851E, the former Psychology 2800E, the former Psychology 2810, or the former Psychology 3223F/G.

Also, in order to satisfy graduation requirements for an Honours Bachelor of Science degree, students are required to take, outside the Psychology Honours Specialization BSc. module, an additional 1.0 course in Science/Basic Medical Science at the 2100-level or higher from the Faculty of Science; this course may be an option or part of another module (see Graduation Regulations for Honours Degrees - additional requirements for the Honours Bachelor of Science). This 1.0

course is in addition to the 1.0 Science/Medical Science course required within the Psychology Honours Specialization BSc. Module.

Progression Requirements

Students who are enrolled in the BSc Honours Specialization must maintain a minimum modular average of 75%, with marks of 70% or above in Psychology 2801F/G and Psychology 2811A/B, marks of 75% or above in Psychology 2802F/G and Psychology 2812A/B, and all other module course marks 60% or above to progress in the module.

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN DEVELOPMENTAL COGNITIVE NEUROSCIENCE – BS~~C~~c

Admission Requirements

Enrolment in this module is limited. Meeting the minimum requirements does not guarantee admission. Students who wish to enter the Honours Specialization in Psychology – Developmental Cognitive Neuroscience (DCN) (BSc) module after Year 1 must have completed the following first-year requirements with no failures, and have a minimum average of 75% in 3.0 principal courses, with no mark in these principal courses below 60%:

1.0 course from: Psychology 1000 or Psychology 1002A/B AND Psychology 1003A/B.
0.5 course: Data Science 1000A/B.
0.5 course from: Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Applied Mathematics 1201A/B, **Statistical Sciences 1024A/B,** the former Applied Mathematics 1413~~, the former Statistical Sciences 1024A/B~~.
1.0 course ~~from~~: Biology 1001A ~~or Biology 1201A~~ and Biology 1002B ~~or Biology 1202B~~.
1.0 course from: Chemistry 1301A/B, Chemistry 1302A/B, Computer Science 1025A/B, Computer Science 1026A/B, Computer Science 1027A/B, ~~the former Physics 1028A/B, the former Physics 1029A/B,~~ Physics 1201A/B, ~~the former Physics 1301A/B, the former Physics 1302A/B,~~ Physics 1501A/B, Physics 1502A/B**, the former Physics 1028A/B, the former Physics 1029A/B, the former Physics 1301A/B, the former Physics 1302A/B**.
1.0 option.

The principal courses include Psychology, the Data Science/Mathematics/Calculus/ Statistical Science courses and one of the other science courses.

Students who wish to enter the Honours DCN module after Years 2 and 3 must have a minimum cumulative average of 75% or cumulative average in their last 10.0 courses of 75%, with no mark below 60% in the module courses. Moreover, a minimum of 60% is needed in each of the 3.0 first-year principal courses, as listed in the module Admission Requirements above.

Module
10.0 courses:

0.5 course from: Psychology 2220A/B, Psychology 2221A/B.
0.5 course from: Psychology 2100-2299 (Excluding Psychology 2220A/B or Psychology 2221A/B).
0.5 course from: Psychology 2040A/B, Psychology 2410A/B.
0.5 course from: Psychology 2300-2799 (excluding **Psychology** 2410A/B)
1.0 course from: Psychology 2801F/G, Psychology 2802F/G, the former Psychology 2800E.
1.0 courses from: Psychology 2811A/B, Psychology 2812A/B, the former Psychology 2810.
2.0 courses from: Psychology 3141F/G, **Psychology 3254A/B,** Psychology 3440F/G, Psychology 3441F/G, Psychology 3442F/G, Psychology 3443F/G, Psychology 3444F/G, the former Psychology 3223F/G.
1.0 course: Psychology 3485F/G, Psychology 3801F/G (or ~~the former~~ Psychology 3800F/G).
0.5 course from: Psychology 3300-3899 (Excluding the 3000-level Research courses).
0.5 course from: Psychology 4100-4995.
1.0 course from Science/Basic Medical Sciences-approved list numbered 2100 or above. (See additional Science Requirement below).
1.0 course from: Psychology 4852E**, Psychology 4862E.**

Notes:

Psychology 4852E **and Psychology 4862E are** ~~is~~ exclusively for students in the DCN Module. Thesis advisors **for Psychology 4852E** must be approved by the DCN module coordinator.

To fulfill the BSc requirements within the Honours Specialization in Psychology – Developmental Cognitive Neuroscience – BSc module, 6.0 of the Psychology courses must be selected from the following list:

Psychology 2115A/B, Psychology 2134A/B, Psychology 2135A/B, Psychology 2210A/B, Psychology 2220A/B, Psychology 2221A/B, Psychology 2801F/G, Psychology 2802F/G, Psychology 2811A/B, Psychology 2812A/B, Psychology 3130A/B, Psychology 3138F/G, Psychology 3139A/B, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Psychology 3185F/G, Psychology 3195F/G, Psychology 3209F/G, Psychology 3221F/G, Psychology 3224A/B, Psychology 3225A/B, Psychology 3226A/B, Psychology 3228A/B, Psychology 3230F/G, Psychology 3285F/G, Psychology 3295F/G, Psychology 3440F/G, Psychology 3441F/G, Psychology 3442F/G, Psychology 3443F/G, Psychology 3444F/G, Psychology 3485F/G, Psychology 3800F/G, Psychology 4115F/G, Psychology 4190F/G, Psychology 4195F/G, Psychology 4222F/G, Psychology 4223F/G, Psychology 4224F/G, Psychology 4260F/G, Psychology 4290F/G,

Psychology 4295F/G, Psychology 4852E, the former Psychology 2800E, the former Psychology 2810, or the former Psychology 3223F/G.

Also, in order to satisfy graduation requirements for an Honours Bachelor of Science degree, students are required to take, outside the Psychology Honours Specialization DCN BSc. module, an additional 1.0 course in Science/Basic Medical Science at the 2100-level or higher from the Faculty of Science; this course may be an option or part of another module (see Graduation Requirements for Honours Degrees – additional requirements for the Honours Bachelor of Science). This 1.0 course is in addition to the 1.0 Science/Medical Science course required within the Psychology Honours Specialization BSc. Module.

Progression

Students who are enrolled in the Honours DCN (BSc) module must maintain a minimum modular average of 75%, with marks of 70% or above in Psychology 2801F/G and Psychology 2811A/B, marks of 75% or above in Psychology 2802F/G and Psychology 2812A/B, and all other module course marks 60% or above to progress in the module.

INTERFACULTY LINGUISTICS PROGRAM

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN LINGUISTICS

Admission Requirements

Completion of first year requirements with at least 75% average and a minimum mark of 60% in 3.0 principal courses, including **Linguistics 1027A/B or** Anthropology 1027A/B and Linguistics 1028A/B. Students must consult with one of the program Co-directors prior to admission. Enrolment in this module is limited. Meeting the minimum requirements does not guarantee admission.

Module
9.0 courses:

1.0 course: Linguistics 2247A/B and Linguistics 2248A/B. At least 75% in each course is required for progression in the module.
2.5 courses: Anthropology 3339F/G, Linguistics 2242A/B, Linguistics 4247A/B, Linguistics 4248A/B, Linguistics 4490F/G.
1.0 Language course(s) to be selected in consultation with one of the Linguistics Co-directors.
1.5 courses from Formal approaches to language: Anthropology 3237A/B, Anthropology 3343A/B, Communication Sciences and Disorders 4411A/B, Communication Sciences and Disorders 4439A/B, French 2805A/B, French 2806A/B, French 3810A/B, French 3830A/B, French 4811F/G, French 4821F/G, French 4830F/G, French 4841F/G, French 4881F/G, Linguistics 2244A/B, Linguistics 3100A/B, Linguistics 3102A/B, Philosophy 3260F/G, Philosophy 3270F/G, Philosophy 4210F/G, Psychology 2134A/B, Spanish 3303A/B, Spanish 3318A/B, Spanish 3319A/B, Spanish 4415A/B.
1.5 courses from Social aspects of language: Anthropology 2245F/G, Anthropology 2249F/G, Anthropology 2251A/B, Anthropology 2252A/B, Anthropology 3243F/G, French 3870A/B, French 4040A/B, French 4850F/G, Spanish 3314F/G, Spanish 4412F/G.
1.5 additional courses from the following or any course from above not already taken: Anthropology 2246A/B, Anthropology 2250A/B, Anthropology 2253A/B, Anthropology 4412F/G, Classical Studies 2800A/B, English 3300, English 3310, French 4100F/G, Indigenous Studies 2253A/B, Linguistics 2130A/B, Linguistics 3340A/B, Linguistics 3390A/B, Philosophy 2020, Philosophy 2250, Philosophy 2260F/G, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Spanish 2121A/B, Spanish 2214A/B, Spanish 2956A/B-2960A/B, or other courses by permission of the Program, the former Philosophy 3201A/B.

Note: Some courses are offered only in alternate years, and some have specific prerequisites. Students must consult one of the Co-Directors of the Inter-Faculty Program in Linguistics when planning their module.

Module Requirements

Students who are enrolled in the Honours Specialization in Linguistics must maintain a minimum cumulative modular average of 75% with a minimum mark of 60% in each course and a passing grade in each option to progress in the module. In addition, students must attain at least 75% in Linguistics 2247A/B and Linguistics 2248A/B or the former Anthropology 2247A/B and the former Anthropology 2248A/B.

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN LINGUISTICS

Admission Requirements

Completion of first-year requirements, including **Linguistics 1027A/B or** Anthropology 1027A/B and Linguistics 1028A/B with a mark of at least 60%.

Module
6.0 courses:

2.0 courses: Anthropology 3339F/G, Linguistics 2242A/B, Linguistics 2247A/B, Linguistics 2248A/B.
1.0 courses from "Formal approaches to language": Anthropology 3237A/B, Anthropology 3343A/B, Communication Sciences and Disorders 4411A/B, Communication Sciences and Disorders 4439A/B, French 2805A/B, French 2806A/B, French 3810A/B, French 3830A/B, French 4811F/G, French 4821F/G, French 4830F/G, French 4841F/G, French 4881F/G, Linguistics 2244A/B, Linguistics 3100A/B, Linguistics 3102A/B, Philosophy 3260F/G, Philosophy 3270F/G, Philosophy 4210F/G, Psychology 2134A/B, Spanish 3303A/B, Spanish 3318A/B, Spanish 3319A/B, Spanish 4415A/B.
1.0 courses from "Social aspects of language": Anthropology 2245F/G, Anthropology 2249F/G, Anthropology 2251A/B, Anthropology 2252A/B, Anthropology 3243F/G, French 3870A/B, French 4040A/B, French 4850F/G, Spanish 3314F/G, Spanish 4412F/G.
2.0 additional courses from the following or any course from above not already taken: Anthropology 2246A/B, Anthropology 2250A/B, Anthropology 2253A/B, Anthropology 4412F/G, Classical Studies 2800A/B, English 3300, English 3310, French 4100F/G, Indigenous Studies 2253A/B, Linguistics 2130A/B, Linguistics 3340A/B, Linguistics 3390A/B, Linguistics 4490F/G, Philosophy 2020, Philosophy 2250, Philosophy 2260F/G, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Spanish 2214A/B, Spanish 2956A/B-2960A/B, or other courses by permission of the Program, the former Philosophy 3201A/B.

Note: Some courses are offered only in alternate years. Students are advised to consult one of the Co-Directors of the Inter-Faculty Program in Linguistics when planning their module.

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN LINGUISTICS

Admission Requirements

Completion of first-year requirements, including **Linguistics 1027A/B or** Anthropology 1027A/B and Linguistics 1028A/B with a mark of at least 60%.

Module
4.0 courses

1.0 courses: Linguistics 2247A/B, Linguistics 2248A/B.
0.5 course: Anthropology 3339F/G or any 3000-level course from the categories "Formal approaches to language" or "Social aspects of language" not already taken.
0.5 course from "Formal approaches to language": Anthropology 3237A/B, Anthropology 3343A/B, Communication Sciences and Disorders 4411A/B, Communication Sciences and Disorders 4439A/B, French 2805A/B, French 2806A/B, French 3810A/B, French 3830A/B, French 4811F/G, French 4821F/G, French 4830F/G, French 4841F/G, French 4881F/G, Linguistics 2242A/B, Linguistics 2244A/B, Linguistics 3100A/B, Linguistics 3102A/B, Philosophy 3260F/G, Philosophy 3270F/G, Philosophy 4210F/G, Psychology 2134A/B, Spanish 3303A/B, Spanish 3318A/B, Spanish 3319A/B, Spanish 4415A/B.
0.5 course from "Social aspects of language": Anthropology 2245F/G, Anthropology 2249F/G, Anthropology 2251A/B, Anthropology 2252A/B, Anthropology 3243F/G, French 3870A/B, French 4040A/B, French 4850F/G, Spanish 3314F/G, Spanish 4412F/G.
1.5 additional courses from the following or any course from above not already taken: Anthropology 2246A/B, Anthropology 2250A/B, Anthropology 2253A/B, Anthropology 4412F/G, Classical Studies 2800A/B, English 3300, English 3310, French 4100F/G, Indigenous Studies 2253A/B, Linguistics 2130A/B, Linguistics 3340A/B, Linguistics 3390A/B, Linguistics 4490F/G, Philosophy 2020, Philosophy 2250, Philosophy 2260F/G, Psychology 3140F/G, Psychology 3141F/G, Psychology 3184F/G, Spanish 2121A/B, Spanish 2214A/B, Spanish 2956A/B-2960A/B, or other courses by permission of the Program, the former Philosophy 3201A/B.

Note: Some courses are offered only in alternate years. Students are advised to consult one of the Co-Directors of the Inter-Faculty Program in Linguistics when planning their module.

KING'S UNIVERSITY COLLEGE

DEPARTMENT OF HISTORY

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN HISTORY

Admission Requirements

Completion of first-year requirements, including at least 0.5 course with a mark of at least 60% from History 1401E, History 1404E, History 1601E, History 1801E, History 1812F/G, History 1813F/G, History 1814F/G, History 1820F/G, History 1901E, or the former History 1403E.

Module
4.0 courses:

1.0 course ~~from: History 2201E, History 2203E or History 2205E~~ **in History at the 2100 level or above**.
2.0 courses from **History 2201E, History 2203E, History 2205E,** History 2301E (U.S. History), History 2403E (European), History 2431F/G (European), History 2432F/G (European), History 2501E (Latin America), History 2650E (East Asia), History 2800F/G (Methods), History 2808F/G (Philosophy of History).
1.0 course in History at the ~~3000 level~~ **2200 level or above**.

DEPARTMENT OF PHILOSOPHY

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHILOSOPHY 3072F/G
BERNARD LONERGAN ON RELIGION AND CULTURE

Course Description
~~The~~ Canadian **philosopher** Lonergan's work on ~~knowing and on being~~ **a 'foundational philosophy'** presents ~~a possible ground for dialogue~~ **possibilities for enriching discussions** among scholars ~~science, philosophy and theology, and also among believers~~ **in many fields and** in various religions. This course examines ~~some of his distinctive notions on the intelligibility of the universe, believe and faith, revelation, love, and hope~~ **and applies Lonergan's ideas on the basis of culture, religious experience, the relation of faith and reason, spirituality, and secularity**.

Prerequisite(s): 3rd or 4th year standing in ~~a Philosophy~~ **any** program.

Extra Information: 3 hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2025, the following change(s) be made:

PHILOSOPHY 3886F/G
ADVANCED TOPICS IN SOCIAL POLITICAL THOUGHT

(Short title: Adv Topics Soc/Pol Thought)

Course Description
An advanced reading seminar in Social Political Thought. See the department website for details about the authors and topic being treated in any given year.

Prerequisite(s): 3rd or 4th year standing in **any** ~~a Philosophy or Social Political Thought~~ program.

Extra Information: 3 lecture hours.
Course Weight: 0.50

DEPARTMENT OF PSYCHOLOGY

Course Introduction – Effective September 1, 2025, the following course be introduced:

PSYCHOLOGY 3262F/G
CURRENT RESEARCH IN BEHAVIOURAL PHARMACOLOGY

(Short Title: Curr Research in Behav Pharm)

Course Description
This course provides a general overview of behavioural pharmacology in the context of reading, critiquing, and communicating peer-reviewed literature. Specific discussions of research methodologies and ethics in behavioural pharmacology will be included.

Antirequisite(s): Psychology 4222F/G, Pharmacology 4380A/B, Physiology and Pharmacology 4980E, Psychology 3392F/G (if taken at King's in 2021-22, 2022-23, 2023-24, or 2024-25).

Prerequisite(s): Psychology 2221A/B, Psychology 2135A/B, and Psychology 2840F/G (or Psychology 2801F/G, Psychology 2802F/G, the former Psychology 2800E, the former Psychology 2820E, Psychology 2830A/B, Psychology 2855F/G or Psychology 2856F/G) and registration in the third or fourth year of Honours Specialization in Psychology, Honours Specialization in Applied Psychology, Honours Double Major, Major or Specialization in Psychology, or permission of the Department.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2025, the following course be introduced:

PSYCHOLOGY 3300F/G
APPLIED CLINICAL SETTINGS

Course Description
This seminar course introduces students to applied clinical psychology areas of expertise and settings. It is designed to familiarize students with approaches utilized by clinicians in diverse settings regarding mental health. The course is also designed to develop writing skills through reflections and clinical discourse through presentations.

Antirequisite(s): Psychology 3995F/G taught in 2023-24 or 2024-25.

Prerequisite(s): Psychology 2301A/B (or Psychology 3301F/G), Psychology 2840F/G (or Psychology 2801F/G, Psychology 2802F/G, the former Psychology 2800E, the former Psychology 2820E, Psychology 2830A/B, Psychology 2855F/G or Psychology 2856F/G), and registration in the third or fourth year of Honours Specialization in Psychology, Honours Specialization in Applied Psychology, Honours Double Major, Major or Specialization in Psychology, or permission of the Department.

Extra Information: 3 lecture hours.
Course Weight: 0.50

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN PSYCHOLOGY

~~Enrolment in this module is limited. Meeting the minimum requirements does not guarantee that students wishing to transfer into this module will be offered enrollment.~~

Admission Requirements

Completion of first-year requirements, including 1.0 from Psychology 1000, Psychology 1000W/X, Psychology 1002A/B and Psychology 1003A/B, or Psychology 1010A/B and Psychology 1015A/B with a mark of at least 60%; Mathematics 1228A/B, and Statistical Sciences 1024A/B.

Module
6.5 courses:

0.5 course: Psychology 2840F/G.
0.5 course from: Psychology 2100-2299.
0.5 course from: Psychology 2300-2799.
1.0 additional course in Psychology at the 2000 level of above
3.5 additional courses in Psychology at the 2100 level of above*.
0.5 course from: Writing 1020F/G, Writing 1022F/G or Writing 2101F/G.

***Note:** Students enrolled in an Honours Double Major must complete at least 1.0 Psychology course at the 3000-level or above.

DEPARTMENT OF SOCIAL JUSTICE AND PEACE STUDIES

Course Revision – Effective September 1, 2025, the following change(s) be made:

SOCIAL JUSTICE AND PEACE STUDIES 3365F/G
~~ALTERNATIVE DISPUTE RESOLUTION~~ **CONFLICT RESOLUTION, DIFFICULT CONVERSATIONS**

(Short Title: Conflict Resolution)

Course Description
This course examines the major methods and theories used for resolving disputes by situating ~~Alternative Dispute Resolution [ADR]~~ **conflict resolution** in its historical, social and legal context. It will provide a critical examination of ~~ADR~~ **conflict resolution** techniques and processes through cases studies and role-playing.

~~Antirequisite(s): Social Justice and Peace Studies Special Topics 3370 F/G (2018-19).~~

Prerequisite(s): Social Justice and Peace Studies 1025F/G and Social Justice and Peace Studies 1026F/G, or permission of the Program Coordinator.

Extra Information: 3 hours.
Course Weight: 0.50

DEPARTMENT OF SOCIOLOGY

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN CRIMINOLOGY

Admission Requirements

Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, including Sociology 1020, Sociology 1020W/X or Sociology 1021E plus 2.0 additional courses, with no mark in these principal courses below 60%.

Module
9.0 courses:

3.0 courses: Sociology 2205A/B and Sociology 2206A/B, Sociology 3306A/B, Sociology 3310F/G, Sociology 4404F/G, Sociology 4409F/G.
1.0 course from: Sociology 2240E or Sociology 2270A/B and Sociology 2271A/B.
1.0 course: Sociology 2266A/B and Sociology 2267A/B.
2.0 courses from: **Sociology 2211F/G,** Sociology 2223A/B, Sociology 2253A/B, Sociology 2256A/B, Sociology 2259, Sociology 2260A/B, Sociology 2268F/G, Sociology 2291F/G, Sociology 2293F/G. (A 0.5 course from a related area may be counted toward this requirement; see Department for currently approved courses.)
1.5 courses from: Sociology 3325F/G, Sociology 3327F/G Sociology 3340F/G, Sociology 3345F/G, Sociology 3349F/G, Sociology 3356F/G, Sociology 3357F/G, Sociology 3358F/G, Sociology 3359F/G, Sociology 3361F/G, Sociology 3363F/G, Sociology 3366F/G, Sociology 3371F/G, Sociology 3375F/G, Sociology 3379F/G, Sociology 3382F/G, Sociology 3387F/G, Sociology 3390F/G, Sociology 3391F/G.
0.5 course from: Sociology 4437F/G, Sociology 4438F/G, Sociology 4439F/G, Sociology 4440F/G, Sociology 4455F/G.

Please note that Sociology 2205A/B and Sociology 2206A/B are mandatory in year 2 of the Honours Specialization, and Sociology 3306A/B and Sociology 3310F/G are mandatory in year 3 of the Honours Specialization.

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN CRIMINOLOGY

Admission Requirements

Completion of first-year requirements including Sociology 1020, Sociology 1020W/X or Sociology 1021E with a mark of at least 60%.

Module
6.0 courses:

2.0 courses: Sociology 2205A/B and Sociology 2206A/B, Sociology 2240E or Sociology 2270A/B and Sociology 2271A/B.
1.0 course(s) from: Childhood and Youth Studies 2212F/G, Disability Studies 2214F/G, English 2100F/G, Film Studies 2156F/G, History 2190A/B, History 3308E, Philosophy 2080, Philosophy 2270, Psychology 2031A/B, Religious Studies 2163A/B, Social Justice and Peace Studies 2302F/G.
0.5 course: Sociology 2266A/B.
1.5 courses from: Sociology 2200E, **Sociology 2211F/G,** Sociology 2223A/B, Sociology 2253A/B, Sociology 2256A/B, Sociology 2259, Sociology 2260A/B, Sociology 2267A/B, Sociology 2268F/G, Sociology 2291F/G, Sociology 2293F/G.
1.0 courses from: Sociology 3325F/G, Sociology 3327F/G Sociology 3340F/G, Sociology 3345F/G, Sociology 3349F/G, Sociology 3356F/G, Sociology 3357F/G, Sociology 3358F/G, Sociology 3359F/G, Sociology 3361F/G, Sociology 3363F/G, Sociology 3366F/G, Sociology 3371F/G, Sociology 3375F/G, Sociology 3379F/G, Sociology 3382F/G, Sociology 3387F/G, Sociology 3390F/G, Sociology 3391F/G.

Program Revision – Effective September 1, 2025, the following changes be made:

MINOR IN CRIMINOLOGY

Admission Requirements

Completion of first-year requirements, including Sociology 1020, Sociology 1020W/X or Sociology 1021E with a mark of at least 60%.

Module
4.0 courses:

3.0 courses from: Sociology 2200E, **Sociology 2211F/G,** Sociology 2223A/B, Sociology 2253A/B, Sociology 2256A/B, Sociology 2259, Sociology 2260A/B, Sociology 2266A/B, Sociology 2267A/B, Sociology 2268F/G, Sociology 2291F/G, Sociology 2293F/G.
1.0 additional Sociology course at the 2200 level or above.

Program Revision – Effective September 1, 2025, the following changes be made:

HONOURS SPECIALIZATION IN SOCIOLOGY

Enrolment in this module is limited. Meeting the minimum requirements does not guarantee that students wishing to transfer into this module will be offered enrollment.

Admission Requirements

Completion of first-year requirements with no failures. Students must have an average of at least 70% in 3.0 principal courses, including Sociology 1020, Sociology 1020W/X or Sociology 1021E, plus 2.0 additional courses, with no mark in these principal courses below 60%.

Module

9.0 courses:

3.0 courses: Sociology 2205A/B, Sociology 2206A/B, Sociology 3306A/B, Sociology 3310F/G, Sociology 4404F/G, Sociology 4405F/G.
1.0 course from: Sociology 2240E or Sociology 2270A/B plus Sociology 2271A/B.
0.5 course: Sociology 2248A/B.
~~3.0~~**2.5 additional courses** in Sociology at the 2200 level or above.
1.5 additional courses in Sociology at the 3000 level or above.
0.5 additional course in Sociology at the 4000 level.

Please note that Sociology 2205A/B and Sociology 2206A/B are mandatory in year 2 of the Honours Specialization, and Sociology 3306A/B and Sociology 3310F/G are mandatory in year 3 of the Honours Specialization.

Program Revision – Effective September 1, 2025, the following changes be made:

MAJOR IN SOCIOLOGY

Admission Requirements

Completion of first-year requirements, including Sociology 1020, Sociology 1020W/X or Sociology 1021E with a mark of at least 60%.

Module
6.0 courses:

1.0 course: Sociology 2205A/B and Sociology 2206A/B.
1.0 course from: Sociology 2240E or Sociology 2270A/B and Sociology 2271A/B.
0.5 course: Sociology 2248A/B.
1.0 course in Sociology at the 2100 or 2200 level.
~~2.0~~**1.5 additional Sociology courses** at the 2200 level.
1.0 Sociology courses at the 3000 level or above.