SOC APPROVALS
November 15, 2023

The following proposals were approved at the November 15, 2023, meeting of the Subcommittee on Undergraduate Academic Courses (SOC).

FACULTY OF ENGINEERING

DEPARTMENT OF CHEMICAL AND BIOCHEMICAL ENGINEERING

Program Revision – Effective September 1, 2023, the following change(s) be made:

A. GENERAL CHEMICAL ENGINEERING OPTION

Module/Program Information

Second Year Program
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, Writing 2130F/G.

Third Year Program
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, two 0.5 non-technical electives.

Fourth Year Program
CBE 4497, CBE 4415*, ELI 4110F/G or the former ES 4498F/G, four 0.5 technical electives†, 0.5 non-technical elective**.

Students who entered before September 2016 are required to take Business Administration 2299E.

*A student may substitute two 0.5 technical electives from the list below for CBE 4415.

†Accelerated Master's students can take up to two 0.5 graduate courses with special permission from the Department Chair.

**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: General Chemical Engineering Option

CBE 4404A/B, CBE 4407A/B, CBE 4411A/B, CBE 4413A/B, CBE 4416A/B, CBE 4417A/B, CBE 4418A/B, CBE 4420A/B, CBE 4428A/B, CBE 4432A/B, CBE 4463A/B, CBE 4485A/B, CBE 4493A/B, CEE 3362A/B, CBE 4405A/B, **CBE 4484A/B,** ~~GPE 4484A/B,~~ MME 4429A/B, the former CBE 4424A/B.

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

Special permission from the Department is needed to take courses from Science or Engineering not listed above.

Program Revision – Effective September 1, 2023, the following change(s) be made:

B. BIOCHEMICAL AND ENVIRONMENTAL ENGINEERING OPTION

Module/Program Information

Second Year Program
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, Writing 2130F/G.

Third Year Program
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 3330A/B, CBE 3396Y, CBE 4403A/B.

Fourth Year Program
CBE 4425*, CBE 4498, ELI 4110F/G or the former ES 4498F/G, 1.0 technical elective, 1.5 non-technical elective**.

Students who entered before September 2016 are required to take Business Administration 2299E.

*A student may substitute two 0.5 technical electives from Technical Electives: Biochemical and Environmental Engineering Course List for CBE 4425.

Accelerated Master's students can take up to two 0.5 graduate courses with special permission from the Department Chair.

**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: Biochemical Engineering Option
CBE 4405A/B, CBE 4407A/B, CBE 4409A/B, CBE 4411A/B, CBE 4416A/B, CBE 4421A/B, CBE 4422A/B, CBE 4423A/B, CBE 4463A/B, CEE 3362A/B, **CBE 4484A/B,** ~~GPE 4484A/B~~.

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

Special permission from the Department is needed to take courses from Science or Engineering not listed above.

Program Revision – Effective September 1, 2023, the following change(s) be made:

C. CHEMICAL ENGINEERING/HBA

Module/Program Information

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, CBE 2206A/B, CBE 2207A/B, CBE 2214A/B, CBE 2220A/B, CBE 2221A/B, CBE 2224A/B, CBE 2290A/B, CBE 2291A/B, Business Administration 2257.

Third Year Program
The third year of the undergraduate program in Business Administration consists of an integrated set of courses (7.5 courses) designed to give a basic understanding of the functions and the interrelationships of the major areas of management, as well as to develop problem-solving and action-planning skills.

All students will take: Business Administration 3300K, Business Administration 3301K, Business Administration 3302K, Business Administration 3303K, Business Administration 3304K, Business Administration

3311K, Business Administration 3316K, Business Administration
3321K, Business Administration 3322K, Business Administration 3323K.

Fourth Year Program
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, Statistical Sciences 2143A/B.

Applied Project Requirement: Business Administration 4569.

Fifth Year Program
CBE 4497, ELI 4110F/G or the former ES 4498F/G, two 0.5 technical electives*,

3.0 Business Administration courses:

- **0.5 course**: International Perspective Requirement: Business Administration 4505A/B.
- **0.5 course**: Corporations and Society Perspective Requirement: At least one 0.5 course from Business Administration - Corporations and Society designated electives offered during the academic year (Business Administration 4538A/B, Business Administration 4539A/B, Business Administration 4588A/B, Business Administration 4625A/B) or other business elective as determined and approved by the HBA Program Director to satisfy this requirement.
- **0.5 course:** Managerial Accounting Requirement: Business Administration 4624A/B.
- **1.5 elective courses** chosen from 4000 level Business courses.

* Students may choose 2 technical electives from the General Chemical Engineering Option Technical Electives list.

Technical Electives: General Chemical Engineering Option

CBE 4404A/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 4432A/B, CBE 4428A/B, CBE 4463A/B, CBE 4485A/B, CBE 4493A/B, CEE 3362A/B, CBE 4405A/B, **CBE 4484A/B,** ~~GPE 4484A/B,~~ MME 4429A/B, the former CBE 4418A/B, the former CBE 4424A/B.

Some technical electives may not be offered in a given academic year.
Special permission from the Department is needed to take courses from Science or Engineering not listed above.

Program Revision – Effective September 1, 2023, the following change(s) be made:

G. CHEMICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

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 4428A/B, CBE 4432A/B, CBE 4463A/B, CBE 4485A/B, CBE 4493A/B, **CBE 4484A/B** ~~GPE 4484A/B~~.

Program Revision – Effective September 1, 2024, the following change(s) be made:

G. CHEMICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Module/Program Information

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, CBE 2206A/B, CBE 2214A/B, CBE 2220A/B, CBE 2221A/B, CBE 2224A/B, CBE 2291A/B, Statistical Sciences 2141A/B, ~~SE 2205A/B, SE 2251A/B,~~ Writing 2130F/G.

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), CBE 2290A/B, CBE 3307A/B, CBE 3315A/B, CBE 2207A/B, CBE 3324A/B, CBE 3322A/B, CBE 3323A/B, ~~ECE 3350A/B, ECE 3351A/B,~~ DS 3000A/B, AISE 3010A/B~~, SE 3309A/B~~.

Fourth Year Program
CBE 3318A/B, CBE 331A/B, CBE 3395A/B, CBE 3319A/B, AISE 3020A/B, ~~SE 4430A/B,~~ AISE 4010A/B, AISE 4020A/B, **AISE 4430A/B (or the former SE 4430A/B), AISE 4450A/B (or the former ECE 4450A/B),** 0.5 AISE technical elective**, 0.5 nontechnical elective. Fifth Year Program CBE 3310A/B, AISE 4050, ~~ECE 4450A/B,~~ ELI 4110F, 1.0 CBE technical electives, 0.5 AISE technical elective, 1.0 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 4428A/B, CBE 4432A/B, CBE 4463A/B, CBE 4485A/B, CBE 4493A/B, **CBE 4484A/B** ~~GPE 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:
Computer Science 4417A/B, Statistical Sciences 4861A/B.
Some technical electives may not be offered in a given academic year.

Course Introduction – Effective September 1, 2023, the following course be introduced:

CHEMICAL AND BIOCHEMICAL ENGINEERING 4484A/B
PROCESSES FOR GREEN PRODUCTS
This course delves into green chemicals, products, and their production processes, including issues related to fossil and waste resources. It examines current and potential commercial green processes, highlighting their advantages and drawbacks for generating economic and environmental benefits.

Antirequisite(s): the former GPE 4484A/B.
Prerequisite(s): CBE 2207A/B, CBE 2224A/B, CBE 3315A/B.
Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2023, the following change(s) be made:

CHEMICAL AND BIOCHEMICAL ENGINEERING 3322A/B
HEAT TRANSFER
Introduce chemical engineering students to the basics of heat transfer, including conduction, convection, radiation and phase change. This knowledge will be used for the design of various types of equipment such as heat exchangers with and without phase change agitated reactors, evaporators, condensers.

Prerequisite(s): CBE 2220A/B, CBE 2221A/B, or registration in the Integrated Engineering program. Corequisite(s): CBE 3395Y, or CBE 3396Y, ~~or GPE 3395Y,~~ or registration in the Integrated Engineering program **or Artificial Intelligence Systems Engineering program**.
Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2023, the following change(s) be made:

CHEMICAL AND BIOCHEMICAL ENGINEERING 3323A/B
STAGED OPERATIONS
This course will focus on the staged unit operations in chemical engineering. It is designed to familiarize the students with the nature and theory of chemical engineering unit operations, analysis and physical separation processes based on the ideal stage concept.

Prerequisite(s): CBE 2220A/B, CBE 2221A/B, CBE 2224A/B. Corequisite(s): CBE 3395Y or CBE 3396Y ~~or GPE 3395Y~~ **or registration in the Artificial Intelligence Systems Engineering program**.
Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2023, the following change(s) be made:

CHEMICAL AND BIOCHEMICAL ENGINEERING 3324A/B
MASS TRANSFER OPERATIONS
This course reviews the fundamentals of interphase mass transfer and transfer units and then reviews the design of differential mass transfer equipment, with special emphasis on absorption, stripping, humidification and drying.

Prerequisite(s): CBE 2220A/B, CBE 2221A/B. **Corequisite(s):** CBE 3395Y or CBE 3396Y ~~or GPE 3395Y~~ **or registration in the Artificial Intelligence Systems Engineering program**.
Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Revision – Effective September 1, 2023, the following change(s) be made:

CHEMICAL AND BIOCHEMICAL ENGINEERING 4432A/B
ENERGY AND FUEL~~S~~ PRODUCTION SYSTEMS
This course introduces students to various technologies for the production of clean and renewable fuels with emphasis on mitigation of carbon footprint. Pathways for the production of hydrogen and its utilization are discussed. Technologies for biofuels production are presented together with their integration in the existing fuels production facilities. ~~This course introduces students to different sources of energy and fuels and their production systems, operations, feedstock and products characteristics. Description of main conversion processes and their evolution will be discussed in the context of environmental and economic considerations. Current trends and future of the industry will be addressed.~~

Prerequisite(s): CBE 2206A/B, CBE 3315A/B.
Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2023, the following course be withdrawn:

GREEN PROCESS ENGINEERING 4484A/B
GREEN FUELS AND CHEMICALS
This course describes what are green fuels and chemicals and the main current or potential processes used to produce green fuels and chemicals. The student should be aware of the issues associated with the production of fuels and chemicals from fossil resources, be aware of the current processes that are used on a commercial scale to produce green fuels and chemicals, their advantages and drawbacks.

Prerequisite(s): CBE 2207A/B or GPE 2214A/B, CBE 2224A/B, CBE 3315A/B or GPE 3315A/B.
Extra Information: 3 lecture hours, 1 tutorial hour.
Course Weight: 0.50

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Program Revision – Effective September 1, 2024, the following change(s) be made:

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

Module/Program Information

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, Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, Statistical Sciences 2141A/B, ~~SE 2205A/B, SE 2251A/B,~~ Writing 2130F/G, 0.5 non-technical electives.

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), AISE 4430A/B (or the former SE 4430A/B), CEE 2224, CEE 4401A/B, CEE 4412A/B, DS 3000A/B, AISE 3010A/B, Earth Sciences 2281A/B, ~~ECE 3350A/B, ECE 3351A/B, SE 3309A/B, SE 4430A/B,~~ 0.5 non-technical electives.

Note: CEE 3324A (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 3348A/B, CEE 3358A/B, CEE 3369A/B, AISE 3020A/B, AISE 4010A/B.

Fifth Year Program
AISE 4020A/B or CEE 4420A/B, AISE 4050, **AISE 4450A/B (or the former ECE**

4450A/B), CEE 4426A/B, CEE 4478A/B, CEE 4491A/B, CEE 4413A/B, CEE 4415A/B, ~~ECE 4450A/B,~~ ELI 4110F/G, 0.5 technical elective, 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:
CEE 4417A/B.
Some technical electives may not be offered in a given academic year.

Program Revision – Effective September 1, 2024, the following change(s) be made:

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

Module/Program Information

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, Numerical and Mathematical Methods 2270A/B, Numerical and Mathematical Methods 2276A/B, Statistical Sciences 2141A/B, ~~SE 2205A/B, SE 2251A/B,~~ Writing 2130F/G, 0.5 non-technical elective.

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), AISE 4430A/B (or the former SE 4430A/B), CEE 2224, CEE 3369A/B, DS 3000A/B, AISE 3010A/B, Earth Sciences 2281A/B, ~~ECE 3350A/B, ECE 3351A/B, SE 3309A/B, SE 4430A/B,~~ 1.0 non-technical electives.

Note: CEE 3324a (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 3348A/B, CEE 3355A/B, CEE 3362A/B, CEE 3386A/B, CEE 4401A/B, CEE 4412A/B, CEE 4476A/B, CBE 4409A/B, AISE 4010A/B, Earth Sciences 3340A/B.

Fifth Year Program
AISE 3020A/B, AISE 4020A/B or CEE 4420A/B, AISE 4050, **AISE 4450A/B (or the former ECE 4450A/B),** CEE 4426A/B, CEE 4463A/B, CEE 4465A/B, CEE 4478A/B, CEE 4416A/B, ~~ECE 4450A/B,~~ ELI 4110F/G, 0.5 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.

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:
CEE 4414A/B, CEE 4417A/B, Computer Science 4417A/B, Statistical Sciences 4861A/B.
Some technical electives may not be offered in a given academic year.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Program Revision – Effective September 1, 2024, the following change(s) be made:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING PROGRAM

Module/Program Information

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, ~~SE 2205A/B, SE 2251A/B,~~ Writing 2130F/G, up to 3.0 credits from the student's core engineering discipline*.

Third Year Program
Data Science 3000A/B or SE 4460A/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
~~SE 4430A/B,~~ AISE 3020A/B, AISE 4010A/B, AISE 4020A/B, **AISE 4430A/B (or the former SE 4430A/B),** up to 3.5 credits from the student's core engineering discipline*, 0.5 credit from AISE technical electives**

Fifth Year Program
AISE 4450A/B (or the former ECE 4450A/B**)**, AISE 4050, ES 4498G/F, up to 3.5 credits from the student's core engineering discipline*, 0.5 credit from AISE technical electives**

* 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, 2024, the following change(s) be made:

M. ELECTRICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Module/Program Information

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, ~~SE 2205A/B, SE 2251A/B,~~ Statistical Sciences 2141A/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 3350A/B, ECE 3351A/B,~~ ECE 3375A/B, ~~SE 3309A/B,~~ DS 3000A/B, Numerical and Mathematical Methods 3415A/B.

Fourth Year Program
AISE 3020A/B, 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, ~~SE 4430A/B,~~ 0.5 non-technical elective, 0.5 AISE technical elective, 0.5 technical elective.

Fifth Year Program
AISE 4050, **AISE 4450A/B (or the former ECE 4450A/B),** ELI 4110F/G, ECE 4437A/B, ~~ECE 4450A/B,~~ Four 0.5 technical electives, 1.0 non-technical electives, 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:
Computer Science 4417A/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.

Program Revision – Effective September 1, 2024, the following change(s) be made:

SOFTWARE ENGINEERING PROGRAM

Admission Requirements

Students entering the Software 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, **and** Numerical and Mathematical Methods 1414A/B**;** and **a minimum grade of 70% in** Engineering Science 1036A/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)

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 2205A/B
ALGORITHMS & DATA STRUCTURES FOR OBJECT-ORIENTED DESIGN
(Short title: Algorithms & Data Structures)
Survey of important computer algorithms and related data structures used in object-oriented software engineering. Design, performance analysis and implementation of such algorithms, stressing their practical use and performance certification of large software applications. Understand how to "seal" designs to guarantee performance goals and to ensure that error conditions are caught.

Antirequisite(s): Computer Science 2210A/B, Software Engineering 2205A/B.
Prerequisite(s): Computer Science 1026A/B or Engineering Science 1036A/B.
Extra information: 3 lecture hours, 2 laboratory hours. Restricted to students enrolled in the Artificial Intelligence Systems Engineering program.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 2251A/B
SOFTWARE DESIGN FOR SYSTEMS ENGINEERING
(Short title: Software Design for Sys Eng)
AISE 2251A/B is a group project course illustrating the design and implementation of software engineering design concepts. It covers integration with third-party applications and big data sources. Real-time and distributed systems, and architectural design will be briefly covered.

Antirequisite(s): Computer Science 2212A/B/Y, Software Engineering 2203A/B, the former Software Engineering 2251A/B.
Prerequisite(s): AISE 2205A/B (or Software Engineering 2205A/B if taken prior to 2024-25), Engineering Science 1036A/B or Computer Science 1026A/B.
Extra Information: 3 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 3309A/B
DATABASE MANAGEMENT SYSTEMS
The focus is to teach database fundamentals required in the development and evolution of most software applications by providing a basic introduction to the principles of relational database management systems such as Entity-Relationship approach to data modeling, relational model of database management systems and the use of query languages.

Antirequisite(s): Computer Science 3319A/B, Computer Science 3120A/B, Software Engineering 3309A/B.
Prerequisite(s): AISE 2205A/B (or Software Engineering 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former Software Engineering 2251A/B).
Extra information: 3 lecture hours, 2 laboratory hours. Restricted to students enrolled in the Artificial Intelligence Systems Engineering program.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 3350A/B
CYBER-PHYSICAL SYSTEMS THEORY
This course covers: 1) Architecture of Cyber-Physical world. 2) Modelling of systems in continuous-time. Transfer functions. Stability. Feedback, and 3) Interface between physical and cyber worlds, including sensor, actuators, and sampling. Coordinate Transform, A/D and D/A conversion (electronics) and principles of data collection. Notion of information and control.

Antirequisite(s): the former ECE 3350A/B.
Prerequisite(s): Numerical and Mathematic Methods 2270A/B, Numerical and Mathematical Methods 2276A/B or Numerical and Mathematical Methods 2277A/B, Physics 1302A/B or Physics 1402A/B.
Extra Information: 3 lecture hours, 2 laboratory hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 3351A/B
DIGITAL SYSTEMS AND SIGNAL PROCESSING
(Short title: Digital Sys and Signal Proc)
Sampling and reconstruction of signals, discrete signals and systems, difference equations and state-space models of digital systems, z-transform and system functions, finite impulse response (FIR) and infinite impulse response (IIR) systems, their mathematical description and frequency response, Fast Fourier transform, filter structures, basics of spectral analysis, data collection.

Antirequisite(s): ECE 3331A/B, the former ECE 3351A/B.
Prerequisite(s): AISE 3350A/B or the former ECE 3350A/B if taken prior to 2024-25.
Extra Information: 3 lecture hours, 2 laboratory hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 4430A/B
INTRODUCTION TO COMPUTER NETWORKING, SECURITY & IOT SYSTEMS
(Short title: Intro to Net, Sec & IoT Sys)
Principles of computer networking architecture/layers and protocols, IoT network systems, protocols, security, and connections to cloud services with an emphasis on the ability to interface and collect data from things and move them securely through the internet to process in public and private data centers.

Antirequisite(s): ECE 4436A/B, the former SE 4430A/B.
Prerequisite(s): AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), Engineering Science 1036A/B.
Extra Information: 3 lecture hours, 3 laboratory hours.
Course Weight: 0.50

Course Introduction – Effective September 1, 2024, the following course be introduced:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 4450A/B
DATA DRIVEN CONTROL OF CYBER-PHYSICAL SYSTEMS
(Short title: Data Driven Control of CP Sys)
The course covers: 1) State-space control of systems using data processing algorithms. Adaptive algorithms. Implementation of Kalman filtering; 2) Use of ML in control of real-world Physical systems and Cyber systems.

Antirequisite(s): the former ECE 4450A/B.
Prerequisite(s): AISE 3010A/B, AISE 3351A/B (or the former ECE 3351A/B), Data Science 3000A/B.
Extra Information: 3 lecture hours, 2 laboratory hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING 3010A/B
DATA ENGINEERING AND MACHINE LEARNING
The course covers: 1) Introduction to data pipelines, distributed data management, and streamline data processing; 2) Data manipulation and data structure for big data; and 3) Design and implementation of an engineering group project illustrating the machine learning and data engineering concepts being taught.

Prerequisite(s): **AISE 2205A/B (or SE 2205A/B if taken prior to 2024-25), AISE 2251A/B (or the former SE 2251A/B), AISE 3309A/B (or SE 3309A/B if taken**

prior to 2024-25), Data Science 3000A/B~~, SE 3309A/B, SE 2205A/B, SE 2251A/B~~.
Extra Information: 3 lecture hours/week, 2 lab hour/week
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

SOFTWARE ENGINEERING 2205A/B
ALGORITHMS & DATA STRUCTURES FOR OBJECT-ORIENTED DESIGN
Survey of important computer algorithms and related data structures used in object-oriented software engineering. Design, performance analysis and implementation of such algorithms, stressing their practical use and performance certification of large software applications. Understand how to "seal" designs to guarantee performance goals and to ensure that ~~all~~ error conditions are caught.

Antirequisite(s): **AISE 2205A/B,** Computer Science 2210A/B.
Prerequisite(s): Computer Science 1026A/B or Engineering Science 1036A/B.
Extra information: 3 lecture hours, 2 laboratory hours. **Restricted to students enrolled in the Software Engineering program.**

Course Revision – Effective September 1, 2024, the following change(s) be made:

SOFTWARE ENGINEERING 3309A/B
DATABASE MANAGEMENT SYSTEMS
The focus is to teach database fundamentals required in the development and evolution of most software applications by providing a basic introduction to the principles of relational database management systems such as Entity-Relationship approach to data modeling, relational model of database management systems and the use of query languages.

Antirequisite(s): **AISE 3309A/B,** Computer Science 3319A/B, Computer Science 3120A/B.
Prerequisite(s): SE 2203A/B, SE 2205A/B.
Extra information: 3 lecture hours/week, 2 laboratory hours/week. **Restricted to students enrolled in the Software Engineering program.**

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

ELECTRICAL AND COMPUTER ENGINEERING 3350A/B
CYBER-PHYSICAL SYSTEMS THEORY
The course covers: 1) Architecture of Cyber-Physical world. Analog, digital systems and cyber-systems. Concept of Software. Introduction and examples. 2) Modelling of systems in continuous time. State-space models. s-transform, Transfer functions. Frequency response. Stability. Feedback; and 3) Interface between Physical and Cyber worlds. Sensors, actuators, sampling (introduction

of principles and basic parameters and models), A/D and D/A conversion (electronics) and principles of data collection. Notion of information and control.

Prerequisite(s): Numerical and Mathematic Methods 2270A/B, Numerical and Mathematical Methods 2276A/B or Numerical and Mathematical Methods 2277A/B, Physics 1202A/B or the former Physics 1302A/B or Physics 1402A/B.
Extra Information: 3 lecture hours/week, 2 lab hour/week.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

ELECTRICAL AND COMPUTER ENGINEERING 3351A/B
DIGITAL SYSTEMS AND SIGNAL PROCESSING
The course covers: 1) Nyquist sampling and reconstruction of signals. State-space model of discrete systems. z-Transform and Transfer function. 2) Autoregressive (AR), autoregressive–moving-average (ARMA), infinite impulse response (IIR) systems, their description and frequency response. Basic algorithms for AR/ARMA estimation, feature extractions and implementation. 3) Sensors and data collection. Selected topics in Sensor Integration across the cyber space: data transfer, compression, and protection.

Antirequisite(s): ECE 3331A/B.
Prerequisite(s): ECE 3350A/B.
Extra Information: 3 lecture hours/week, 2 lab hour/week.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

ELECTRICAL AND COMPUTER ENGINEERING 4450A/B
DATA DRIVEN CONTROL OF CYBER-PHYSICAL SYSTEMS
The course covers: 1) State-space control of systems using data processing algorithms. Adaptive algorithms. Implementation of Kalman filtering; 2) Use of ML in control of real-world Physical systems and Cyber systems.

Prerequisite(s): ECE 3351A/B, Data Science 3000A/B, AISE 3010A/B.
Extra Information: 3 lecture hours/week, 2 lab hour/week.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

SOFTWARE ENGINEERING 2251A/B
SOFTWARE DESIGN FOR SYSTEMS ENGINEERING
SE 2251 is a group project illustrating the design and implementation the software engineering design concepts. It covers the integration with third-party applications and big data sources. Real-time and distributed systems, architectural design will be briefly covered.

Antirequisite(s): SE 2203A/B, Computer Science 2212A/B/Y.
Prerequisite(s): Engineering Science 1036A/B or Computer Science 1026A/B, Software Engineering 2205A/B.
Extra Information: 3 lecture hours/week, 3 lab hour/week.
Course Weight: 0.50

Course Withdrawal – Effective September 1, 2024, the following course be withdrawn:

SOFTWARE ENGINEERING 4430A/B
INTRODUCTION TO COMPUTER NETWORKING, SECURITY & IOT SYSTEMS
Principles of computer networking architecture/layers and protocols, IoT network systems, protocols, security, and connections to cloud services with an emphasis on the ability to interface and collect data from things and move them securely through the internet to process in public and private data centers.

Antirequisite(s): ECE 4436A/B.
Prerequisite(s): ES 1036A/B, SE 2205A/B. Pre-or Corequisite(s**):** Data Science 3000A/B can be taken as co-requisite.
Extra Information: 3 lecture hours/week, 3 lab hour/week.
Course Weight: 0.50

DEPARTMENT OF MECHANICAL AND MATERIALS ENGINEERING

Program Revision – Effective September 1, 2024, the following change(s) be made:

H. MECHANICAL ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Module/Program Information

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 2200 Q/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, ~~SE 2205A/B, SE 2251A/B~~.

Third Year Program
Writing 2130F/G, MME 2221A/B, MME 2213A/B, MME 3374A/B, MME 3379A/B, ~~ECE 3350A/B, ECE 3351A/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), AISE 4430A/B (or the former** SE 4430A/B**)**, 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 3020A/B, AISE 4010A/B, AISE 4020A/B, 0.5 AISE technical elective.

Fifth Year Program
AISE 4050, **AISE 4450A/B (or the former** ECE 4450A/B**)**, ELI 4110F, 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 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:
Computer Science 4417A/B, Statistical Sciences 4861A/B.
Some technical electives may not be offered in a given academic year.

Course Revision – Effective September 1, 2023, the following change(s) be made:

MECHANICAL AND MATERIALS ENGINEERING 4452A/B
ROBOTICS AND MANUFACTURING AUTOMATION
An overview of robotics and manufacturing automation technology and principles. Topics include: automatic production and assembly, sensors, actuators and drives, mechanization of part handling, industrial robots, and machine vision systems. Emphasis will be on the planning, design and implementation of automation systems. PLCs will be used in the lab section.

Prerequisite(s): **MME 3374A/B (or the former** ECE 3374A/B**)**, MME 3380A/B, or ECE 3330A/B, ECE 3375A/B, or registration in fourth year of the Integrated Engineering program.

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

MECHATRONIC SYSTEMS ENGINEERING

Program Revision – Effective September 1, 2024, the following change(s) be made:

E. MECHATRONIC SYSTEMS ENGINEERING AND ARTIFICIAL INTELLIGENCE SYSTEMS ENGINEERING OPTION

Module/Program Information

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 2273A/B, MSE 2200Q/R, ~~SE 2205A/B, SE 2251A/B,~~ Statistical Sciences 2141A/B, Writing 2130F/G~~.~~, 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, ~~ECE 3350A/B, ECE 3351A/B,~~ MSE2201A/B, MSE2202A/B, MSE 2233A/B, MSE 3360A/B, MSE 3380A/B, ~~SE 3309A/B,~~ DS 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 2277A/B, ECE 3330A/B, ECE 3375A/B, ECE 4469A/B, MSE 3302A/B, MSE 3310A/B, MSE 3381A/B, ~~SE 4430A/B,~~ 0.5 nontechnical elective, 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 4450A/B,~~ ECE 4460A/B, MSE 3301A/B, MSE 4401A/B, Three 0.5 technical electives, 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:
Computer Science 4417A/B, Statistical Sciences 4861A/B.
Some technical electives may not be offered in a given academic year.

FACULTY OF HEALTH SCIENCES

SCHOOL OF KINESIOLOGY

Program Revision – Effective September 1, 2023, the following change(s) be made:

HONOURS SPECIALIZATION IN KINESIOLOGY – BSc

Module
9.0 courses:

1.0 course**:** Kinesiology 2230A/B, Kinesiology 2241A/B (must be taken in second year).
1.0 course from: Kinesiology 2900 - 2999.
0.5 course**:** Kinesiology 2032A/B must be selected in second year.
0.5 course in Kinesiology at the 2000 level (non activity based).
0.5 course from: Kinesiology 3341A/B, Kinesiology 3343A/B, Kinesiology 3353A/B.
1.0 course: Kinesiology 3330F/G, Kinesiology 3337A/B.
1.0 course from: Kinesiology 3343A/B, Kinesiology 3353A/B, Kinesiology 4430F/G, Kinesiology 4432A/B, Kinesiology 4433A/B, Kinesiology 4490E, Kinesiology 4520A/B, the former Kinesiology 4450A/B (not previously selected).
3.5 additional Kinesiology courses at the 2000 level or above (non activity based), of which 1.0 must be from: Kinesiology 2250A/B, Kinesiology 2263F/G, Kinesiology 2276F/G, Kinesiology 2292F/G, Kinesiology 3362F/G, Kinesiology 3388A/B, Kinesiology 3463F/G, Kinesiology 3476F/G, Kinesiology 3490F/G, Kinesiology 4259F/G, Kinesiology 4276F/G, Kinesiology 4465F/G.

For module planning guide go to the School of Kinesiology website: http://www.uwo.ca/fhs/kin/

Notes:

1. Students in this module must select four full or equivalent science options from the 2100 level or above.

2. Up to 1.0 of the 4.0 Science credits may be at the 1000-level, from the following list:
- Biology 1001A or Biology 1201A and Biology 1002B or Biology 1202B;
- Chemistry 1301A/B and Chemistry 1302A/B;
- Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Applied Mathematics 1201A/B, Mathematics 1120A/B, Mathematics 1225A/B, Mathematics 1228A/B, Mathematics 1229A/B, Mathematics 1600A/B, Statistical Sciences 1024A/B, Data Science 1000A/B;

- Physics 1101A/B, or 1201A/B or the former Physics 1028A/B or the former Physics 1301A/B or Physics 1501A/B and Physics 1102A/B, or 1202A/B or the former Physics 1029A/B or the former Physics 1302A/B or Physics 1502A/B.

3. Up to 2.0 of the 4.0 Science credits may be taken from the following list of Kinesiology courses (not previously selected). **Kinesiology 3222A/B,** Kinesiology 3339A/B, Kinesiology 3341A/B, Kinesiology 3343A/B, Kinesiology 3347A/B, Kinesiology 3353A/B, Kinesiology 3360A/B, Kinesiology 3480A/B, Kinesiology 4420A/B, Kinesiology 4430F/G, Kinesiology 4432A/B, Kinesiology 4434A/B, Kinesiology 4480A/B, Kinesiology 4490E, Kinesiology 4520A/B.

4. Kinesiology students graduating with the Honours Bachelor of Science Degree Honours Specialization in Kinesiology are recognized as having met the University graduation policies pertaining to Science course requirements.

5. All students must complete a Statistics course as a co-requisite to Kinesiology 2032A/B.

6. All Honours Specialization modules in Kinesiology require the successful completion of at least 1.0 4000-level Kinesiology credits prior to graduation.

7. A maximum of 12.5 Kinesiology Credits may be taken in any Honours Specialization degree or module.

Course Revision – Effective September 1, 2024, the following change(s) be made:

KINESIOLOGY 4495
~~FIELD EXPERIENCE IN~~ **STRENGTH AND CONDITIONING PRACTICUM**
This course is a ~~field experience~~ practicum where students ~~are assigned to a varsity sport team~~ **will train varsity athletes** as a student training assistant. Supplementary training will include various aspects related to sport performance training with a focus on strength and conditioning.

Prerequisite(s): ~~Kinesiology 2236A/B; Kinesiology 3337A/B; Kinesiology 3339A/B; the former Kinesiology 2961A/B;~~ **Kinesiology 3495A/B;** current certification in Emergency First Responder (EFR) training.
Extra Information: 2 lecture/seminar hours per week plus a ~~field experience~~ practicum. Restricted to students in fourth year Honours Specialization in Kinesiology and subject to Faculty procedural guidelines and approval. Students will be permitted to take a maximum of 1.0 credits from Kinesiology 4495, Kinesiology 4498A/B, Kinesiology 4585, Kinesiology 4590, Kinesiology 4995A/B (or the former Kinesiology 4995F/G), Kinesiology 4996A/B (or the former Kinesiology 4996F/G).
Course Weight: 1.00

FACULTY OF SOCIAL SCIENCE

DEPARTMENT OF POLITICAL SCIENCE

Course Revision – Effective September 1, 2024, the following change(s) be made:

POLITICAL SCIENCE 3316F/G
POLITICAL PARTIES
An analytical study of political parties. Topics include: the historical development of political parties; theoretical approaches to political parties; the role of political parties in the electorate and in government; political parties and representation. Emphasis will be placed on Canadian parties and cross-national comparisons.

Prerequisite(s): Political Science 2230E or Political Science 2530F/G, or Political Science 2244E or Political Science 2544F/G, **or Political Science 2245E or Political Science 2545F/G** ~~or the former Political Science 2234E~~.
Extra Information: 2 seminar hours.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

POLITICAL SCIENCE 3348F/G
FEDERALISM IN CANADA AND BEYOND
This course offers a thorough examination of federalism. It devotes significant attention to the Canadian case, but it sets Canadian federalism securely within a broader comparative context. The course will explore federal theory, federal institutions, and the implications of federalism for political actors, intergovernmental negotiations, and crucial public policy outcomes.

Prerequisite(s): Political Science 2230E or Political Science 2530F/G, **or Political Science 2245E or Political Science 2545F/G** ~~or the former Political Science 2234E~~.
Extra Information: 2 lecture hours.
Course Weight: 0.50

HURON UNIVERSITY COLLEGE

CENTRE FOR GLOBAL STUDIES – FACULTY OF ARTS AND SOCIAL SCIENCE

Program Revision – Effective September 1, 2024, the following change(s) be made:

HONOURS SPECIALIZATION IN GLOBAL HEALTH STUDIES

Admission Requirements

Completion of first–year requirements with no failures.

Students must take 3.0 principal courses, achieving an average of at least 70% across them and with no final grade of less than 60% in any of them. These principal courses must include:

1.0 course: Health Sciences 1001A/B, Health Sciences 1002A/B with a minimum of 70% in each of these two courses;
1.0 essay course, satisfied with either two half–courses or one full–year course.

The remaining 1.0 principal course and the other 2.0 first–year courses may be taken from across the Humanities, Social Sciences, and Sciences. Geography 1400F/G, Geography 1500F/G, and Sociology 1020 **or Sociology 1025A/B and Sociology 1027A/B** are recommended to satisfy prerequisites needed in the module. Anthropology, Centre for Global Studies, History, Indigenous Studies, Political Science, and Social Justice and Peace Studies are also recommended as first year courses.

Students should note the language requirement for graduation in this module when selecting first–year courses.

Module
9.0 courses:

~~4.5~~ **5.0** courses: CGS 2002F/G, CGS 3519F/G, CGS 3520F/G, CGS 3532F/G, CGS 3533F/G; Geography 2411F/G or Indigenous Studies 2601F/G; Health Sciences 2244 or GSWS 2244; Health Sciences 2250A/B**, Health Sciences 3250F/G**.
0.5 course from: CGS 2003F/G, CGS 2004F/G.
0.5 course from: CGS 3001F/G, CGS 3006F/G.
1.0 course from: CGS 3509F/G, CGS 3512F/G, CGS 3513F/G, CGS 3514F/G, CGS 3517F/G, CGS 3518F/G, CGS 3525F/G, CGS 3526F/G, CGS 3527F/G,

CGS 3528F/G, CGS 3530F/G; and with permission: CGS 3100E, CGS 3101F/G, CGS 3201F/G, CGS 3202F/G, CGS 3203F/G, CGS 3206F/G.
0.5 course from: Geography 2430A/B, Geography 3431A/B, Geography 3432A/B.
~~1.0~~ **0.5** course from: Health Sciences 3010F/G, Health Sciences 3025F/G, Health Sciences 3042F/G, Health Sciences 3071A/B, Health Sciences 3262F/G, Health Sciences, 3624A/B, Health Sciences 3630F/G, Health Sciences 3704A/B; Law 3101A/B; and with permission: Health Sciences 3090A/B, Health Sciences 3091A/B, Health Sciences 3092A/B, Health Sciences 3093F/B, the former Health Sciences 3290A/B; Sociology 3370F/G; Sociology 3371F/G.
0.5 course from: ~~Centre for Global Studies~~ **CGS** 4000–level.
0.5 course from: Health Sciences 4044A/B, Health Sciences 4200F/G, Health Sciences 4205A/B, Health Sciences 4220F/G, Health Sciences 4250A/B, Health Sciences 4505F/G, and with permission: Health Sciences 4090A/B, Health Sciences 4091A/B, Health Sciences 4092F/G; Sociology 4472F/G.

Language Requirement

- 2.0 language courses with progression from one level to the next (e.g. 1030 level to 2000 level or 2000 level to 3000 level) in a language other than English, or
- 2.0 language courses in two different languages other than English at any level, or
- By demonstrating working fluency in a language other than English.

Program Revision – Effective September 1, 2024, the following change(s) be made:

SPECIALIZATION IN GLOBAL HEALTH STUDIES

Admission Requirements

Completion of first–year requirements including a minimum cumulative average of 65% in 3.0 principal courses with no grade lower than 60%. These principal courses must include:

1.0 course: Health Sciences 1001A/B, Health Sciences 1002A/B
1.0 essay course, satisfied with either two half–courses or one full–year course.

2.0 first–year courses may be taken from across the Humanities, Social Sciences, and Sciences. Geography 1400F/G, Geography 1500F/G, and Sociology 1020 **or Sociology 1025A/B and Sociology 1027A/B** are recommended to satisfy prerequisites needed in the module. Anthropology, Centre for Global Studies, History, Indigenous Studies, Political Science, and Social Justice and Peace Studies are also recommended as first–year courses.

Students should note the language requirement for graduation in this module when selecting first–year courses.

Module
9.0 courses:

~~4.5~~ **5.0** courses: CGS 2002F/G, CGS 3519F/G, CGS 3520F/G, CGS 3532F/G, CGS 3533F/G; Geography 2411F/G or Indigenous Studies 2601F/G; Health Sciences 2244 or GSWS 2244; Health Sciences 2250A/B**, Health Sciences 3250F/G**.
0.5 course from: CGS 2003F/G, CGS 2004F/G.
0.5 course from: CGS 3001F/G, CGS 3006F/G.
1.5 course from: CGS 3509F/G, CGS 3512F/G, CGS 3513F/G, CGS 3514F/G, CGS 3517F/G, CGS 3518F/G, CGS 3525F/G, CGS 3526F/G, CGS 3527F/G, CGS 3528F/G, CGS 3530F/G; and with permission: CGS 3100E, CGS 3101F/G, CGS 3201F/G, CGS 3202F/G, CGS 3203F/G, CGS 3206F/G.
~~1.5~~ **1.0** course~~s~~ from: Health Sciences 3010F/G, Health Sciences 3025F/G, Health Sciences 3042F/G, Health Sciences 3071A/B, Health Sciences 3262F/G, Health Sciences, 3624A/B, Health Sciences 3630F/G, Health Sciences 3704A/B; Law 3101A/B; and with permission: Health Sciences 3090A/B, Health Sciences 3091A/B, Health Sciences 3092A/B, Health Sciences 3093F/B, the former Health Sciences 3290A/B; Sociology 3370F/G; Sociology 3371F/G.
0.5 course from: Geography 2430A/B, Geography 3431A/B, Geography 3432A/B.

Language Requirement

- 2.0 language courses with progression from one level to the next (e.g. 1030 level to 2000 level or 2000 level to 3000 level) in a language other than English, or
- 2.0 language courses in two different languages other than English at any level, or
- By demonstrating working fluency in a language other than English.

MANAGEMENT AND ORGANIZATIONAL STUDIES – FACULTY OF ARTS AND SOCIAL SCIENCE

Course Introduction – Effective September 1, 2024, the following course be introduced:

MANAGEMENT AND ORGANIZATIONAL STUDIES 4511F/G
ADVANCES IN SUSTAINABILITY AND CONSUMER BEHAVIOUR
(Short title: Adv in Sustain Consumer Behav)
This course reviews cutting-edge research tools, theories, and research findings at the intersection of sustainability and consumer behaviour. The focus is on using behavioural research methods and findings to understand, predict, and encourage sustainable consumption, while reviewing important issues in marketing and sustainability.

Prerequisite(s): At least two of MOS 3321F/G, MOS 3420F/G, MOS 3423F/G. Priority will be given to Huron University College students registered in the Honours Specialization in Marketing and Sustainability. Enrollment from students registered in MOS modules other than Marketing and Sustainability is given by special permission of the course instructor only.
Extra Information: 3 hours. Limited enrolment. Meeting minimum requirements does not guarantee admission to the course.
Course Weight: 0.50

Course Revision – Effective September 1, 2024, the following change(s) be made:

MANAGEMENT AND ORGANIZATIONAL STUDIES 2185A/B
ANIMAL WELFARE AND SUSTAINABILITY LEADERSHIP
An examination of animal welfare and sustainability challenges, strategies, and solutions in sectors such as fashion, beauty, sports, entertainment, food, and animal care. ~~This course examines pressing animal welfare and ecological challenges and builds the analytical, strategic, and leadership skills required to respond to or prevent these issues in private, public, and nonprofit organizations.~~

Antirequisite(s): MOS 3398A/B if taken in Winter term of 2022-23.
Extra Information: 3 hours.
Course Weight: 0.50