REVISED

PDC230421A

NOTICE OF MEETING
There will be a meeting of the
PROGRAM DEVELOPMENT COMMITTEE (PDC)
Friday April 21, 2023 at 9:00am-11:00am
Location: Toldo or Virtual MS Teams

AGENDA

1 Approval of Agenda

2 Minutes of Meeting of March 15, 2023

3 Business Arising from the Minutes

4 Outstanding Business

4.1 Honours Biochemistry (Pharmacy Stream) – Major Program Changes (Form B) — **Kenneth Ng -**Approval PDC230421-4.1

5 Reports/New Business

***5.1 Forensic Science - Minor Program Change (Form C)** — **Shari Forbes-**Approval PDC230421-5.1

***5.2 Forensic Science - New Course Proposals (Form D)** — **Shari Forbes-**Approval PDC230421-5.2

***5.3 Sociology and Criminology - Minor Program Change (Form C)** — **John Diukmedjian-**Approval PDC230421-5.3

***5.4 Bachelor of Information Technology (BIT)– Articulation Agreement (Form C1)** — **Arunita Jaekel-**Approval PDC230421-5.4

***5.5 Engineering (Graduate) Minor Program Change (Form C)** — **Peter Frise-**Approval PDC230421-5.5

***5.6 Engineering - Bachelor of Applied Science - Minor Program Change (Form C)** — **Afsaneh Edrisy-**Approval PDC230421-5.6

***5.7 Engineering – New Course Proposals (Form E)** — **Afsaneh Edrisy-**Approval PDC230421-5.7

***5.8 Forensic Science - Summary of Minor Course and Calendar Changes (Form E)** — **Shari Forbes-**Information PDC230421-5.8

***5.9 Engineering - Summary of Minor Course and Calendar Changes (Form E)** — **Afsaneh Edrisy -**Information PDC230421-5.9

***5.10 Nursing - Summary of Minor Course and Calendar Changes (Form E)** — **Sue Fox-**Information PDC230421-5.10

***5.11**	**Kinesiology - Summary of Minor Course and Calendar Changes (Form E)**	**Linda Rohr-**Information PDC230421-5.11
***5.12**	**Kinesiology (Graduate) - Summary of Minor Course and Calendar Changes (Form E)**	**Linda Rohr -**Information PDC230421-5.12
***5.13**	**Physics - Summary of Minor Course and Calendar Changes (Form E)**	**Steven Rehse-**Information PDC230421-5.13
***5.14**	**Kinesiology - Learning Outcome (KINE-1110)**	**Linda Rohr-**Information PDC230421-5.14
***5.15**	**Kinesiology - Learning Outcome (KINE-3030)**	**Linda Rohr-**Information PDC230421-5.15

6 Other Business

7 Adjournment

Please carefully review the 'starred' (*) agenda items. As per the June 3, 2004 Senate meeting, 'starred' item will not be discussed during a scheduled meeting unless a member specifically requests that a 'starred' agenda item be 'unstarred', and therefore open for discussion/debate. This can be done any time before (by forwarding the request to the secretary) or during the meeting. By the end of the meeting, agenda items which remain 'starred' (*) will be deemed approved or received.

University of Windsor
Program Development Committee

4.1: **Honours Biochemistry (Pharmacy Stream) – Major Program Change (Form B)**

Item for: **Approval**

MOTION: That the Honours Biochemistry (Pharmacy Stream) (with/without thesis) (with/without internship) be approved.^

^Subject to approval of the expenditures required.

Rationale/Approvals:

- The major program change adds a new stream to the existing Honours Biochemistry program (with/without thesis and with/without internship) and has been approved by the Department of Chemistry and Biochemistry, the Science Program Development Committee (SPDC) (as delegated by the Faculty of Science Coordinating Council), and the Provost.
- Provosts Comments: *I am supportive of this new Pharmacy Stream. It is a transparent pathway to ensure preparedness for a subsequent degree in Pharmacy.*
- Questions raised at the March PDC meeting have been addressed and appropriate revisions have been made to the proposal.
- *See attached.*

A. Basic Program Information

Faculty(ies)	Science
Department(s)/School(s)	Chemistry and Biochemistry
Name of Program as it Will Appear on the Diploma (*e.g.*, Bachelor of Arts Honours Psychology with thesis)	Honours Biochemistry (Pharmacy Stream) Honours Biochemistry (Pharmacy Stream) with Thesis
Proposed Year of Offering* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall 2023
Mode of Delivery:	Regular on-campus courses, some with laboratories. Full-time and/or part-time
Planned steady-state Student Enrolment (per section B.4.2)	10
Normal Duration for Completion:	4 years
Will the program run on a cost-recovery basis?	No

B. Major Program Changes - Overall Plan

B.1 Objectives of the Program/Summary of Proposal (QAF section 2.1.2.1; Ministry section 3)

Please provide a rationale for the proposed change, including a brief statement about the direction, relevance and importance of the revised program. Describe the overall aim and intended impact of the revised program. Describe the consistency of the revised program with the institution's mission, goals and objectives as defined in its strategic plan. (to view the strategic plan go to: www.uwindsor.ca/president)

This Honours Biochemistry (Pharmacy Stream) (with/without thesis) is intended to appeal to students seeking a clear pathway to pharmacy, medicine, or graduate research in a chemical or health-related science. While students can already pursue these programs from various undergraduate backgrounds (including, but not limited to, Chemistry, and Biochemistry), a new stream is expected to increase the visibility of pharmaceutical-related courses/research at the University of Windsor, and be of interest to students who are undecided as to which science program to take.

Aim and Impact: This new stream in **Pharmacy** will offer students a prescribed pathway into professional school with a particular focus on Pharmacy. It has been noted that graduates from the University of Windsor Biochemistry program are particularly well suited for pharmacy and this stream will ensure that students are prepared for all Ontario professional pharmacy schools as well as those in Michigan.

Consistency with Institutional Goals: In keeping with the priorities of the University of Windsor strategic plan we have designed this stream to ensure an exceptional and supportive undergraduate experience that emphasizes independent learning, interdisciplinary opportunities, and successful year-to-year transitions.

Along with our existing undergraduate programs and streams in Biochemistry and Chemistry, we will continue to provide an exceptional undergraduate experience in the sciences. The proposed Honours stream builds on the strengths of the most research-intensive science department, with a rigorous curriculum with integrated laboratory (experiential) components and co-op/internship options.

Opportunities for enhanced research experiences are available for students in this new stream. Select students in the pharmacy stream may pursue an honours research project (which counts towards upper-year requirements in the proposed curriculum). It is expected that a number of the graduates from this stream will choose to pursue graduate studies in a related topic with a supervisor at the University of Windsor in Biology, Biomed or in Chemistry & Biochemistry, or at an external institution with similar areas of research interest, contributing to the scholarly advances made at this, or other, institutions.

B.2 Changes to Program Content (QAF Section 2.1.2.2)

Evidence that the revised curriculum is consistent with the current state of the discipline or area of study.

The proposed curriculum combines essential elements from the Biochemistry program and includes current fundamental courses in sciences relating to health and biomedical research. It allows students to complete the most common admission prerequisite courses for Ontario medical and pharmacy schools (as well as at Wayne State University, in Detroit) as part of their degree programs. (Most of the prerequisites are courses that meet specific science requirements, and there is room for other courses for the more unusual professional school requirements (e.g., for medical schools outside of Ontario). Additionally, the curriculum was designed by research faculty (including individuals carrying out pharmacological research) so that graduates will be prepared for graduate study in pharmacy related fields providing a necessary alternative career pathway.

B.2.1 Unique or Innovative Curriculum, Program Delivery, or Assessment Practices (QAF Section 2.1.1)

*State the unique or innovative curriculum, program delivery, or assessment practices distinguishing the revised program from existing programs elsewhere**, as appropriate.***

The curriculum differs from other biomedical, or health sciences programs offered in Ontario, as it focuses on the pharmacological sciences in chemistry and biochemistry. The rigorous curriculum exposes the students to the fundamental and experiential knowledge both in chemistry and biochemistry in a suite of courses.

B.2.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

*The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967). In revising this program, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form such as learning outcomes and/or in the syllabus where appropriate?*

Inclusion of Indigenous content, perspectives, and material is an ongoing and evolving exercise integrally involving the department leadership.. We have started discussions with Jaimie Kechego. The early discussions have been extremely fruitful and through these discussions we have identified points both within program delivery and the PDC process that could be improved. Our discussions will continue and be expanded to assist with the development of a database of Indigenous chemistry/biochemistry content as a resource for internal and external instructors. We are currently seeking an Indigenous science student who can be hired to facilitate this initiative. The student will review literature and engage with Indigenous Knowledge Keepers to gather information. The simple compilation of knowledge is not

enough. The student and department leadership will work with CTL to make sure details on how to present the data effectively and appropriately is included in the database.

Individual instructors within the Department of Chemistry and Biochemistry have reviewed course materials and identified areas where Indigenous content can be integrated to provide a holistic perspective of a topic. Concrete steps have already been taken for courses within the proposed program. For example, BIOC-3030, Natural Health Products and Their Mechanisms of Actions, now includes as part of its learning outcomes: Appraise the value of cultural knowledges from different traditions including First Nation's, and Ayurvedic practices and Discuss and relate the knowledge of traditional medicine of Canada's first people.

Finally, leadership within the Department is engaged at the national research level. For example, Marquardt leads a national co-organization that is organizing a research panel with CIFAR with speaker Bob Watts (Nuclear Waste Management Organization) – "Building Expertise through Inclusion: EDI and Indigenous Issues". Although this is not directly related to teaching, the subject matter helps further build knowledge and awareness of Indigenous issues.

B.3 Changes to Program Name and Degree Designation/Nomenclature (QAF Section 2.1.2.1; Ministry section 1)

Explanation of the appropriateness of the proposed new name and degree designation for the program content and current usage in the discipline

The proposed name for the new stream, **Honour Biochemistry – Pharmacy stream** recognizes both the subject area of study and the area specific educational experiences will students receive within this stream. Therefore, we believe the name is representative of the program content and current usage in the discipline.

B.4 DEMAND FOR THE MODIFIED PROGRAM

B.4.1 Student and Market Demand/Societal Need (Ministry section 1)

Describe the tools and methodology used to conduct the market assessment and/or societal need assessment in support of the proposed program revisions, where appropriate.

Provide quantitative evidence of student and market demand for the revisions to the program, both within and outside the local region (e.g., responses/statistics from surveys, etc.), where appropriate.

Provide evidence of societal need for graduates of the revised program, including expert input. Proposers should consider, where appropriate, the:

1) *dimensions of the societal need (e.g., socio-cultural, economic, scientific, or technological),*
2) *the geographic scope of the societal need (e.g., local, regional, provincial, or national), and/or*
3) *the anticipated duration of, and trends in societal need.*

Append any comments or letters solicited from potential employers and/or relevant professional associations regarding the need for graduates of the revised program within their organization and field of endeavour.

Based on our experience with student requests for specific types of programs, the student demand for health-related programs has been increasing over the past decade, primarily relating to student objectives of medical, dental, pharmacy and other professional programs centred on health. We have seen a doubling of student registration in biology and biochemistry programs over the last decade, which is a significant indication of demand in these areas. On this campus, these are the closest analogues to a health or life science program. At recruitment events (e.g., the Ontario University Fair, University of Windsor Open House), inquiries from potential students and parents are common regarding biomedical, health, pre-medical and pre-pharmacy programs.

Anecdotally, former students have stated how under prepared for Pharmacy they were in the biomedical and health centred degree programs. Pharmacy is a chemistry and biochemistry heavy vocation and proper preparation in the chemical sciences is required. According to the Government of Canada, the job opportunities for pharmacists is good in Ontario as well as several other provinces.

Pharmacist in Canada

National Occupational Classification update

We have updated this page to reflect the transition to the 2021 version of the National Occupational Classification (NOC). This means that the occupation **"Pharmacist"** was moved from the group **Pharmacists (NOC 3131)** to the group **Pharmacists (NOC 31120)**.

Summary | Description | Wages | Prospects | Jobs | Requirements | Skills | Search

Explore current and future job prospects for people working as a "pharmacist" in Canada.

Job opportunities over the next 3 years

Note that these outlooks are based on the 2016 version of the NOC. Learn more about our methodology.

Breakdown by province and territory

Explore future job prospects by province and territory.

Legend

☆☆☆☆☆	Undetermined	★★★☆☆	Moderate
★☆☆☆☆	Very limited	★★★★☆	Good
★★☆☆☆	Limited	★★★★★	Very good

Location	Job prospects
Alberta	★★★★☆ Good
British Columbia	★★★☆☆ Moderate
Manitoba	★★★★★ Very good
New Brunswick	★★★★☆ Good
Newfoundland and Labrador	★★★☆☆ Moderate
Northwest Territories	☆☆☆☆☆ Undetermined
Nova Scotia	★★★☆☆ Moderate
Nunavut	☆☆☆☆☆ Undetermined
Ontario	★★★★☆ Good
Prince Edward Island	★★★★☆ Good
Quebec	★★★☆☆ Moderate
Saskatchewan	★★★★☆ Good
Yukon Territory	☆☆☆☆☆ Undetermined

Labour Market Information Survey

Date modified: 2022-11-06

B.4.2 Estimated Enrolments (Senate Co-op Policy)

Provide details on projected enrolments for the first five years of operation of the revised program in the following table.
(If the program is in operation, use actual and projected data.)

For Co-op programs: normally an annual intake of a minimum of 20 students is required for new co-op programs or programs with other experiential learning component.

	First Year of Operation		Second Year of Operation		Third Year of Operation		Fourth Year of Operation		Fifth Year of Operation/Steady-state enrolment overall)	
	Domestic	Int'l	Domestic	Int'l	Domestic	Int'l	Domestic	Int'l	Domestic	Int'l
In the regular program (non-co-op)	6		10		10		10		10	
In the co-op/ experiential learning stream (if applicable)										

B.4.3 Duplication (Ministry section 3)

Indicate whether the revised program is in a new area of study or delivery for the institution. List similar programs at the same credential level offered by other institutions in the Ontario university system. Resources to identify similar programs offered in Ontario include https://www.ontariouniversitiesinfo.ca/programs and https://www.universitystudy.ca/search-programs/. ~~Also, list similar programs in the geographically contiguous area, e.g., Michigan/Detroit.~~ If the revised program is similar to others in the Ontario university system, demonstrate that societal need and student demand justify the duplication. Identify innovative and distinguishing features of the revised program in comparison to similar programs

Although chemistry and biochemistry programs are offered at nearly all universities, most institutions have developed streams or degree programs in Health Sciences or Biomedical Sciences:

Ontario universities offering
Biomedical Science programs:
Brock University
University of Guelph
Laurentian University
University of Ottawa
Queen's University ("Life Sciences")
Ryerson University
York University

Health Science programs:
Western University
Wilfred Laurier
University of Ontario Institute of Technology

The curriculum for this stream includes **more** chemistry and biochemistry than other programs, which will give graduates additional options for graduate and professional schools. In particular, the proposed stream will be suitable for students who are not only interested in medical school, but also those who are considering pharmacy programs, (which tend to feature a greater number of chemistry pre-requisites), or other medical pursuits. Compared to similar programs, this stream offers much more flexibility in terms of course selection. Students may concentrate their efforts on sub-specialties such as biochemistry, medical physics, or microbiology, leading them to career goals beyond

medicine. Most importantly, the availability of a Health and Biomedical Sciences program in Windsor will allow students in the Windsor-Essex area to attend university locally in the discipline of their choice.

B.5 RESOURCES

*[The resource impact of a proposal is almost never neutral. Note: Proposers must also complete and submit the attached **Budget Summary** (Appendix A) with the revised program proposal.]*

B.5.1 Resources Available

B.5.1.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section. Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university. Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA

Courses within this new stream are offered regularly within the current academic calendar, such that there are no anticipated additional resources required to offer this new stream beyond what is associated with natural enrollment growth over time. The vast majority of courses are offered from the Department of Chemistry and Biochemistry, which has capacity for growth and will be able to accommodate the projected increases in enrollment. Students will also complete two courses in Physics, three courses in Mathematics and Statistics, Integrated Biology and one course from Biomedical Sciences (depending on their college electives). These programs can also accommodate the projected growth in enrollment. The core university courses required are regularly offered by faculty members within departments within Science. Faculty teaching courses within this stream have current knowledge and expertise that are central to the program curriculum. Administrative tracking will be provided within the UWinsite Student system. Academic advising will occur within the Department of Chemistry and Biochemistry. The advisor responsible for the Honours Biochemistry will also advise students on matters related to the new stream, including appropriate sequencing and course selection.

B.5.1.1a Faculty Expertise Available and Committed to Supporting the Revised Program (QAF section 2.1.2.6; 2.1.2.7; 2.1.2.8)

Assess faculty expertise available and actively committed to supporting the revised program. Provide evidence of a sufficient number and quality of faculty who are qualified to teach and/or supervise in and achieve the goals of the revised program and foster the appropriate academic environment, and of the appropriateness of this collective faculty expertise to contribute substantially to the revised program including student mentoring.
Include:

- *evidence of the quality of the faculty (e.g., qualifications, funding, honours, awards, research, innovation and scholarly record)*
- *evidence that faculty have the recent research or professional/clinical expertise needed to sustain the revised program, promote innovation, and foster an appropriate intellectual climate*
- *any other evidence that the revised program and faculty will ensure the intellectual quality of the student experience*

All courses from the University of Windsor are offered from the Department of Chemistry and Biochemistry, Department of Physics, Integrated Biology, Biomedical Sciences or Department of Mathematics and Statistics (depending on college electives). These courses are offered regularly within the undergraduate calendar and are already taught by expert faculty. As such, there is already a sufficient number of highly qualified faculty to support

this new stream. The faculty teaching these courses are specialists in the area who have expertise in the subjects that are central to the new pharmacy stream. These expert faculty have published in leading national and international journals on topics (or similar topics) to the courses offered within the program.

B.5.1.1b Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

There is no anticipated reliance on adjunct, limited-term, or sessional faculty beyond what is already being used.

B.5.1.1c Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

B.5.1.1d Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

B.5.1.2 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

N/A

B.5.1.3 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

N/A

B.5.1.4a Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	No change beyond what is expected from normal enrollment growth
Staff:	No change beyond what is expected from normal enrollment growth
GA/TAs:	No change beyond what is expected from normal enrollment growth

B.5.1.4b Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	No change
Teaching and Learning Support:	No change
Student Support Services:	No change
Space and Facilities:	No change
Equipment (and Maintenance):	No change

C. Program Details

C.1 Admission Requirements (QAF section 2.1.2.5)

Describe new or changes to

- *program-specific admission requirements,*
- *selection criteria,*
- *credit transfer,*
- *arrangements for exemptions or special entry, and*
- *alternative admission requirements, if any, for admission into the program, such as minimum average, additional language requirements or portfolios, recognition of prior work or learning experience (and how this will be assessed), etc.*

Admission Requirements: Advanced Functions/MHF4U, Chemistry/SCH4U, Biology/SBI4U, English/ENG4U. MCV4U is strongly recommended. Physics/SPH4U is recommended.

Minimum Average:
A minimum 70% average of all attempted science and math courses is also required.

Note: Biochemistry-Pharmacy stream (with/without thesis) students may apply to the coop internship courses in third year (CHEM-3909 Internship I and CHEM-4908 Internship II).

Students will be able to apply directly into the pharmacy stream from high school. Students may also transfer in and out of the stream as this was considered carefully in the overall curriculum design.

Exemptions and credit transfer will be handled as is the current practice for existing Biochemistry and Chemistry programs. Students transferring in from other institutions to upper levels of the program will be handled as currently managed by the Registrar's office.

C.1.1 Admission Requirements and Attainment of Learning Outcomes (QAF section 2.1.2.5)

Demonstrate that admission requirements for the revised program are sufficient to prepare students for successful attainment of the intended learning outcomes (degree level expectations) established for completion of the program.

The proposed admission requirements are equivalent to the admission requirements for Biochemistry, reflecting the rigour of the new stream.

C.2 Program Curriculum Structure/Program of Study (QAF sections 2.1.2.3 and 2.1.10)

NB: For graduate programs, provide evidence that each graduate student in the revised program is required to take a minimum of two-thirds of the course requirements from among graduate-level courses. Include course requirements with course numbers and course names. Identify in BOLD and STRIKETHROUGH the changes to program requirements.

Honours Biochemistry (Pharmacy Stream)

Total courses: forty (40)

Degree requirements:
(a) 20 Courses: CHEM-1100, CHEM-1110, CHEM-2200, CHEM-2300, CHEM-2310, CHEM-2400, CHEM-2410, CHEM-2500, CHEM-2510, CHEM-3210, BIOC-2010, BIOC-3100, BIOC-3110, BIOC-3130, BIOC-3581 (6-credit, 2 semester course), BIOC-3310, BIOC-4050 and two additional CHEM/BIOC courses at the 3XXX or 4XXX level (CHEM-3310 is recommended).

(b) 10 Courses: BIOL-1101, BIOL-1111, BIOL-2111, BIOL-2071, BIOM-2131, MATH-1720, MATH-1730, PHYS-1400, PHYS-1410 and STAT-2910;

(c) 4 Courses: ENGL-1001 and three courses from Arts, Languages or Social Sciences; CMAF-2100 strongly recommended

(d) 6 courses from any area of study; BIOM-2021, BIOL-2040, BIOL-2050 strongly recommended.

Note: An internship option is available.

Honours Biochemistry (Pharmacy Stream) with Thesis

Total courses: forty (40)

Degree requirements:
(a) 20 Courses: CHEM-1100, CHEM-1110, CHEM-2200, CHEM-2300, CHEM-2310, CHEM-2400, CHEM-2410, CHEM-2500, CHEM-2510, CHEM-3210, BIOC-2010, BIOC-3100, BIOC-3110, BIOC-3130, BIOC-3581 (6-credit, 2 semester course), BIOC-3310, BIOC-4050 and CHEM-4900 (6-credit, 2 semester course).

(b) 10 Courses: BIOL-1101, BIOL-1111, BIOL-2111, BIOL-2071, BIOM-2131, MATH-1720, MATH-1730, PHYS-1400, PHYS-1410 and STAT-2910;

(c) 4 Courses: ENGL-1001 and three courses from Arts, Languages or Social Sciences; CMAF-2100 strongly recommended

(d) 6 courses from any area of study; BIOM-2021, BIOL-2040, BIOL-2050, CHEM-3310 strongly recommended.

Note: An internship option is available.

Courses used to calculate the major average are:
Courses used to calculate the major average are: courses listed under requirement (a), and any courses taken in the major area(s) of study.

Description of thesis option (if applicable):
Qualified students who find a willing supervisor may complete CHEM-4900 towards their degree program. This is not a requirement.

CHEM-4900. Research:
Original laboratory research under the direction of a faculty member. Student must present three seminars discussing their research project. (1 lecture, 12 laboratory hours per week over two terms; 6 credit hours.) (Only open to students in Chemistry Honours, Biochemistry Honours; please consult the "Program Requirements" section above.) (Prerequisites: major average of 72% and a cumulative average of 72%.)

C.2.1 Co-op/Experiential Learning Component (if applicable)

Provide requirements for the co-op/experiential learning component, including length of co-op/experiential learning component and credit weight, and explain how they differ for students who complete the experiential learning option and those who opt not to.*Ensure that learning outcomes for the co-op/experiential learning component have been included in the learning outcomes table. (C.4)*

Students can apply to the coop internship courses in third year (CHEM-3909 Internship I and CHEM-4908 Internship II).

Is the completion of the experiential learning/co-op component a requirement of the revised program?

N/A

C.2.2 Suggested Sequencing for Revised Program (Optional)

Provide suggested program sequencing for each year of the revised program (including any work/study/placement sequencing), ensuring that all pre-requisites are met in the sequencing.For Co-op programs: The proposed work/study sequence or alternative arrangement should allow for year-round availability of students for employers (if appropriate) and, wherever possible, should meet the guidelines for co-operative education as set out by the Canadian Association for Co-operative Education (see Policy on Co-op Programs).

First Year:	ten courses, including BIOL-1101, BIOL-1111, CHEM-1100, CHEM-1110, MATH-1720, MATH-1730, PHYS-1400, PHYS-1410, ENGL 1001 and one other course.
Second Year:	ten courses, including BIOL-2111, BIOM-2131, CHEM-2300, CHEM-2310, CHEM-2400, CHEM-2410, CHEM-2500, CHEM-2510, BIOC-2010 and one other course.
Third and Fourth Years:	twenty courses, including CHEM-2200, CHEM-3210, BIOC-3100, BIOC-3110, BIOC-3130, BIOC-3581 (6-credit, 2 semester course), BIOC-4050, BIOL-2071, STAT-2910 and two additional CHEM/BIOC courses at the 3XXX or 4XXX level.

C.2.3 Program Structure/Requirements and Attainment of Learning Outcomes (QAF section 2.1.2.6)

Describe how the structure and requirements of the revised program are sufficient to prepare students for successful attainment of the intended program-level learning outcomes and the associated undergraduate or graduate degree level expectations.

The structure parallels the already rigorous, successful and Canadian Chemical Society Accredited Biochemistry program delivered by the Department of Chemistry and Biochemistry.

C.3.1 For Graduate Program ONLY (QAF sections 2.1.2.3; Senate Co-op Policy)

C.3.1.1 Normal Duration for Completion

Provide a clear rationale for program length that ensures that the revised program requirements can be reasonably completed within the proposed time period.

N/A

C.3.1.2 Program Research Requirements

For research-focused graduate programs, provide a clear indication of the nature and suitability of the major research requirements for completion of the revised program.

N/A

C.3.1.3 New or Changes to Fields in a Graduate Program (optional)

Where fields are contemplated, provide the following information:
The master's program comprises the following fields: ...[list, as applicable]
The PhD program comprises the following fields: ...[list, as applicable]

N/A

C.3.2 For All Program Proposals

C.3.2.1 New or Changes to Standing Required for Continuation in Program

Minimum average requirements for continuation in the program. Must conform to the regulations for standing required for continuation in the program as set out in Senate policy. Specify new or changes to standing required for continuation in the experiential learning option or co-op option of the revised program, where applicable.

Same as Honours Biochemistry and Biochemistry with Thesis programs:

Honours Biochemistry (Pharmacy Stream)
Cumulative average requirement: 60%; major average requirement 60%.

Honours Biochemistry (Pharmacy Stream) with Thesis
Cumulative average requirement: 70%; major average requirement 70%.

C.3.2.2 New or Changes to Standing Required for Graduation

Minimum average requirement to graduate in the program.
Must conform to the regulations for standing required for continuation in the program as set out in Senate policy.

Specify new or changes to standing required for graduation in the experiential learning option or co-op option of the revised program, where applicable.

Same as Honours Biochemistry and Biochemistry with Thesis programs:

Honours Biochemistry (Pharmacy Stream)
Cumulative average requirement: 60%; major average requirement 70%.

Honours Biochemistry (Pharmacy Stream) with Thesis
Cumulative average requirement: 70%; major average requirement 70%.

C.4 NEW OR CHANGES TO LEARNING OUTCOMES (Degree Level Expectations)(QAF section 2)

COMPLETE THIS TABLE FOR UNDERGRADUATE PROGRAMS

*In the following table, provide the specific learning outcomes (degree level expectations) that constitute the overall goals of the Combined program or Concurrent offering (i.e., the intended skills and qualities of graduates of this program). Link each learning outcome to the Characteristics of a University of Windsor Graduate" by listing them in the appropriate rows. A learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate. All University of Windsor programs should produce graduates able to demonstrate each of the nine characteristics. Program design must demonstrate how students acquire all these characteristics. All individual courses should contribute to the development of one or more of these traits: a program in its entirety must demonstrate how students meet all of these outcomes through the complete program of coursework. Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes (degree level expectations). **For Combined Programs and Concurrent Offerings:***

The program learning outcomes would include the outcomes for the two standalone programs with a few additional outcomes to reflect the benefits of pursuing the two disciplines in an integrated manner. [For learning outcome A, the integration of knowledge can be within a program and between the two programs.] ***For programs with an Experiential Learning or Co-op Option****: Include learning outcomes for the program with a few additional outcomes highlighted to reflect the benefits of pursuing the experiential learning/co-op option.*

Program Learning Outcomes (Degree Level Expectations) *This is a sentence completion exercise. Please provide a minimum of 1 learning outcome for each of the boxes associated with a graduate attribute.* At the end of this program, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A UWindsor graduate will have the ability to demonstrate:	**COU-approved Undergraduate Degree Level Expectations**
A. Explain and apply the major theories and concepts of chemistry and biochemistry pharmacology. (Also applies to D.) Explain and apply the scientific method as it relates to biochemistry research and societal issues. (Also applies to B, C, H, I.)	A. the acquisition, application and integration of knowledge	1.Depth and Breadth of Knowledge 2.Knowledge of Methodologies 3. Application of Knowledge 5.Awareness of Limits of Knowledge
B. Operate standard and modern laboratory instruments for solving biochemical/drug related problems. (Also applies to C.) Collect, read, evaluate, and analyze relevant scientific literature to address a specific biochemistry area. (Also applies to C, D.)	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)	1. Depth and Breadth of Knowledge 2. Knowledge of Methodologies 3. Application of Knowledge 5. Awareness of Limits Knowledge
C. Access and effectively utilize the primary research literature for solving chemical, biochemical and drug problems. (Also applies to D.) Correctly interpret experimental data and the accuracy of the results. (Also applies to D.)	C. critical thinking and problem-solving skills	1. Depth and Breadth of Knowledge 2. Knowledge of Methodologies 3. Application of Knowledge 5. Awareness of Limits of Knowledge
D. Write formal scientific papers and reports with the correct structure (e.g., include proper citations, references, etc.)	D. literacy and numeracy skills	4. Communication Skills 5. Awareness of Limits of Knowledge
E. Effectively use safe laboratory practice (e.g use and handling of chemicals).	E. responsible behaviour to self, others and society	5. Awareness of Limits of Knowledge 6. Autonomy and Professional Capacity
F. Produce effective oral and written communication on a scientific subject. Qualitatively summarize and objectively present data. Prepare written laboratory reports using conventional scientific style.	F. interpersonal and communications skills	4. Communication Skills 6. Autonomy and Professional Capacity

Program Learning Outcomes (Degree Level Expectations) *This is a sentence completion exercise. Please provide a minimum of 1 learning outcome for each of the boxes associated with a graduate attribute.* At the end of this program, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A UWindsor graduate will have the ability to demonstrate:	**COU-approved Undergraduate Degree Level Expectations**
G. Participate constructively and cooperatively in small group activities.	G. teamwork, and personal and group leadership skills	4. Communication Skills 6. Autonomy and Professional Capacity
H. Describe examples that illustrate the functionality and diversity of chemistry and biochemistry. Design innovative solutions to demonstrate scientific concepts (also relevant to C and I).	H. creativity and aesthetic appreciation	2. Knowledge of Methodologies 3. Application of Knowledge 6. Autonomy and Professional Capacity
I. Apply organizational, problem-solving and mentoring skills to engage in self-directed learning and professional development activities	I. the ability and desire for continuous learning	6. Autonomy and Professional Capacity

C.4.3 Mode of Delivery (QAF section 2.1.2.2)

Demonstrate that the proposed modes of delivery are appropriate to facilitate students' successful attainment of the new or revised program learning outcomes. Discuss online vs. face-to-face (e.g., lecture, seminar, tutorial, lab) modes of delivery, as well as specialized approaches intended to facilitate the acquisition of specific skills, knowledge, and attitudes.

Courses primarily rely on face-to-face offerings and delivery may vary according to instructor. Approaches may include: standard lectures with active learning techniques embedded (e.g., discussions), laboratories, tutorials, presentations, and written assignments. The modes of delivery and the teaching methods used will provide students with a variety of learning experiences and assist them in developing the knowledge, skills, and abilities to meet the learning outcomes.

D. MONITORING AND EVALUATION (QAF section 2.1.2.4)

Describe and explain the appropriateness of the proposed methods of assessing student achievement given the new or revised intended learning outcomes and degree level expectations.

Current assessment methods are used within existing Honours programs in Chemistry and Biochemistry (which have similar learning outcomes/expectations to the proposed stream). There is an annual academic standing consideration given to all students in all programs on campus. Additional monitoring will occur in this particular program through the efforts of the program coordinator.

D.1 Plan for Documenting and Demonstrating Program Quality and Student Performance (QAF section 2.1.2.4)

Describe the appropriateness of the plans to monitor and assess:

- *the overall quality of the revised program;*
- *whether the revised program is achieving in practice its proposed objectives;*
- *whether its students are achieving the program-level learning outcomes;*
- *the perceived student workload and student experience; and*
- *how the resulting information will be documented and subsequently used to inform continuous program improvement.*

As the stream evolves, student success and performance level will be tracked through consultation, student feedback, and grades. The academic advisor within the Department of Chemistry and Biochemistry will be responsible for monitoring student progression and responding to student questions regarding the stream. All courses will contribute to students' attainment of the program learning outcomes.

We designed the course audit based on program requirements at the Ontario and Wayne State University (Appendix B)

E. NEW OR REVISIONS TO EXPERIENTIAL LEARNING/CO-OP COMPONENT ONLY (Senate Co-op Policy)
[Complete this section ONLY if the program change includes new or revisions to the experiential learning/co-op component involving paid or unpaid placements.]

N/A. Note: There are no new or revised experiential learning components.

APPENDIX A – BUDGET SUMMARY SHEET

Contact the Office of Quality Assurance for assistance in completing this form.
Tuition Fee and Funding Level (Program Weight) Assessed by Ministry (sections 4&5)

Projections of Enrolment, Expenditures and Revenues (enrolments over 5 years)						
Year	**1**	**2**	**3**	**4**	**5**	**Total**
Revenue						
Tuition income*	$30,000 (6)	$80,000 (6+10)	$130,000 (6+10+10)	$180,000 (6+10+10+10)	$200,000 (10+10+10+10)	
Potential Provincial funding**	$30,000 (6)	$80,000 (6+10)	$130,000 (6+10+10)	$180,000 (6+10+10+10)	$200,000 (10+10+10+10)	
Other sources of funding *(please list)*						
Total Revenue						
Expenses						
Additional Faculty member						
Additional Staff/Technician						
GA/TA***						
External Examiners *(for graduate programs)*						
Library Resources						
New Facilities/Equipment						
Facilities/Equipment Maintenance						
Technology/CTL resources						
Other expenses *(please list)*						
Total Expenses						
Net Income						

*Estimate $5000 per full-time equivalent domestic undergraduate student; $xxx per full-time equivalent international undergraduate student; $xxxx per full-time equivalent domestic Masters student; $xxxx per full-time equivalent international Masters student; $xxxx per full-time equivalent domestic doctoral student; $xxxx per full-time equivalent international doctoral student.

**Estimate $5000 per full-time equivalent domestic undergraduate student; $xxx per full-time equivalent international undergraduate student; $xxxx per full-time equivalent domestic Masters student; $xxxx per full-time equivalent international Masters student; $xxxx per full-time equivalent domestic doctoral student; $xxxx per full-time equivalent international doctoral student.

***Estimate $xxx per GA/TA allocation

APPENDIX B – ONTARIO PHARMACY REQUIREMENTS

Waterloo (https://uwaterloo.ca/pharmacy/future-pharmd-students/required-courses-pharmd-admissions)

WINDSOR

- Biology
  - Introductory Cell Biology – BIOL 1101 or BIOL 1400 or BIOL/55-141
  - Genetics* – BIOL 2093 or BIOL/55-212
  - Fundamentals of Microbiology* - BIOL 2070, BIOL 2071 or BIOL/55-237

*You may complete these BIOL course equivalents OR any 300 or 400-level BIOL course.

- Chemistry
  - Physical and Chemical Properties of Matter – CHEM 1100 or CHEM/59-140
  - Chemical Reactions, Equilibria and Kinetics – CHEM 1110 or CHEM/59-141
  - Introductory Biochemistry – BIOC 2010 or CHEM/59-261; BIOC2015 or CHEM/59-263
  - Basic Organic Chemistry 1 – CHEM 2300 or CHEM/59-230; CHEM 2305 or CHEM/59-232
- Math
  - Calculus 1 for the Sciences – MATH [1720 + 1730], MATH/62-[140 + 141], MATH [1760 + 1730], MATH/62-[139 + 141]
  - Introductory Statistics for Scientists – STAT 2910 or STATISTICS/65-205
- English
  - ENG/26-120, ENG/26-140, ENG/26-205, ENGL 1001, ENGL 1005, ENGL 1409, ENGL 2320, ENGL 2330, ENGL 2520, MGMT 1000 or PSYCH-3220

University of Toronto (https://www.pharmacy.utoronto.ca/programs/doctor-pharmacy-pharmd/pharmd-academic-requirements/acceptable-courses-canadian-universities)

Windsor	BIOL1111 + 1101 or former 55-140 + 141	CHEM1100 + 1110 + 2300 or former Chem59 -140 + 59-141 + 59-230	(MATH 1720 or 1760 + 1730) or former 62-139 or 62-140 + 62-141

Wayne State University (https://cphs.wayne.edu/pharmd/admissions-prerequisites.php)

Effective for the Fall 2023 admission cycle:

- BIO 1510 - Basic Life Mechanisms (NSI)
- BIO 2270 & 2271 or BIO 2200 (NSIL) - Introductory Microbiology & Lab
- BIO 2870 + BIO 3200 - Six credits of Anatomy & Physiology with at least three at the 3000-level or higher
- CHM 1100 & 1130 or CHM 1220 & 1230 - General Chemistry I & Lab (NSIL)
- CHM 1140 & 1150* - General Chemistry II & Lab
- CHM 1240 & 1250 - Organic Chemistry I & Lab
- CHM 2220 & 2230 - Organic Chemistry II & Lab
- CHM 5600 - Biochemistry
- MAT 2010 - Calculus I (QE)
- PHY 2130 & 2131 - General Physics I & Lab (NSIL)

*CHM 1140/1150 is not required for applicants who completed CHM 1220/1230 at WSU or CHM 1240/1250 at any college or university prior to Fall 2022.

Six year prerequisite waiver

If any of the science courses were completed more than six years before the time of application submission, you may request a six year prerequisite waiver from the WSU PharmD program — as long as you earned a grade of 2.0 or higher in the science course.

Waiver requests must include: (a) the name, course number, and institution name of the course(s) to be waived and (b) a detailed explanation that describes how your employment experience or recent academic coursework demonstrates mastery of the prerequisite course content. Include a detailed account of the principles and objectives and the prerequisite course content along with specific employment duties or academic achievements. Attach your transcripts showing the grade for the course to the form. Unofficial transcripts are fine for waiver reviews.

Six-year prerequisite waivers are valid for one application cycle. Applicants reapplying to the PharmD program must submit a new waiver request because they do not roll over from one application cycle to the next.

Non-science prerequisites

The following prerequisite courses — or their equivalent — must be completed by August 31 of the year for which you are applying. (To begin the program in Fall 2023, these courses must be completed by August 31, 2023.)

- ENG 1020 - Introductory College Writing (BC)
- COM 1010 - Oral Communication (OC)* Exam option
- STA 1020 - Elementary Statistics (QE)

EQUIVALENCY CHART FOR UNIVERSITY OF WINDSOR
SCIENCE PREREQUISITE COURSES

Wayne State course	Windsor course	Clinical Lab Science	Mortuary Science	Occupational Therapy	Pharmacy	Physical Therapy	Radiologic Technology	Radiation Therapy Tech.
BIO 1500	BIOL 1111							X
BIO 1510/1511	BIOL 1101	X	X	X	X	X	X	X
BIO 2200 or BIO 2270/2271	BIOL 2071	X			X			
BIO 2870	BIOM 2021+BIOL 2040	X	X	X	X (3)	X	X	X
BIO 3200	BIOL 2050 (3)				X (3)		X	
300/3000 level Biology Class	Various					X (1)		
CHM 1000	No equivalent		X					
CHM 1020	No equivalent					X (2)		X
CHM 1030	BIOC 1303					X (2)		
CHM 1220/1230 or CHM 1100/1130	CHEM 1100	X			X	X (2)		
CHM 1140/1150	CHEM 1110	X			X (4)	X (2)		
CHM 1240/1250	CHEM 2300	X			X	X (2)		
CHM 2220/2230	CHEM 2310+BIOC 2010				X	X (2)		
CHM 5600	BIOC 3100+3130				X			
KIN 3580	KINE 2240			X				
College Algebra	No equivalent	X						
MAT 1800	No equivalent						X	X
MAT 2010	MATH 1720 or MATH 1760				X			
Pathophysiology	No equivalent							
PHY 1020	No equivalent						X	
PHY 2130/2131	PHYS 1300				X	X		X
PHY 2140/2141	PHYS 1310					X		X

(1) For the physical therapy program, biology course must be taken for 3 credits. Course cannot be a duplicate of course(s) that fulfill a prerequisite. Biochemistry, Kinesiology, Athletic Training or Sports Medicine are not accepted. (Not required for students completing a bachelor's degree by program start)

(2) The physical therapy program only requires two chemistry courses with at least one lab and topics do not overlap. Options include CHM 1020, CHM 1100/1130, CHM 1140/1150 or 1220/1230, CHM 1030 or CHM 1240/1250 or CHM 2220/2230.

(3) For the pharmacy program, you must have at least six semester credit hours of anatomy and physiology with at least three semester credit hours of anatomy of physiology at the 3000-level or higher. BIOL 2040 is accepted for BIO 3200.

(4) Effective for the Fall 2023 admission cycle, CHM 1140/1150 is not required for Pharmacy applicants who completed CHM 1220/1230 or CHM 1240/1250 prior to Fall 2022.

Revised-8/16/2022

EQUIVALENCY CHART FOR UNIVERSITY OF WINDSOR
NON-SCIENCE PREREQUISITE COURSES

Wayne State course	Windsor course	Clinical Lab Science	Mortuary Science (5)	Occupational Therapy	Pharmacy	Physical Therapy	Radiologic Technology	Radiation Therapy Tech.
Business Course	See item (6) below		X					
COM 1010	CMAF 2100	X	X	X	X		X	X
COM 2200	No equivalent		X					
CLS 2080	No equivalent	X						
CLS 3330	No equivalent	X	X					
CSC 1000	COMP 1000 or COMP 1047						X	
ENG 1020	ENGL 1001	X	X	X	X	X	X	X
ENG 3010/ICN	See Gen Ed	X	X	X			X	X
PH 2100	No equivalent		X					
PHI 1050	PHIL 1600 or PHIL 1620		X (1)				X (1)	X (1)
PHI 2320	PHIL 2210						X	
PS 1010	POLS 2320			X				X
PSY 1010 or PSY 1020	PYSC 1150 or PSYC 1160		X	X		X	X	X
PSY 2300	PSYC 1070							X (4)
PSY 2400	No equivalent			X			X	(4)
PSY 2410	PSYC 3390							(4)
PSY 3310	PSYC 2280			X				
STA 1020	STAT 2910 or STAT 2950 or KINE 2690	X		X	X	X	X	
SOCIAL INQUIRY	See Gen Ed		X	X (2)				
Two 3000-level courses	See (3) below					X (3)		

(1) You have the option of either taking PHI 1050/Critical thinking as course work or you can take the Critical Thinking Competency Exam. To make arrangements to take this exam, contact Wayne State University's Office of Testing, Evaluation, and Research Services at www.testing.wayne.edu

(2) For the Occupational Therapy program, you need to take a social inquiry course. Look at the next page under "General Education Requirements" for information that can assist with the fulfillment of this prerequisite. P S 1010 or equivalent cannot be used to fulfill social inquiry requirement.

(3) For the Physical Therapy program, you need to take two 3000-level or higher courses in the same discipline. For example, two 3000-level or higher courses in biology or two 3000-level or higher courses in psychology.

(4) For the Radiation Therapy Technology program, you can take either PSY 2300, PSY 2400 or PSY 2410.

(5) For the Mortuary Science program, please visit http://cphs.wayne.edu/mortuary-science/admissions.php to review the difference in prerequisite requirements for those who have already earned a bachelor's degree vs. those who have not.

(6) For the Mortuary Science program, one course in a business field (ACC, BA, ECO, MGT, FIN, etc.)

Revised-8/16/2022

University of Windsor
Program Development Committee

*5.1: **Forensic Science – Minor Program Changes (Form C)**

Item for: **Approval**

Forwarded by: **Faculty of Science**

MOTION: That the degree requirements for the Honours Bachelor of Forensic Science (BFS) , Combined Bachelor of Arts in Forensics, Combined Bachelor of Arts in Forensics and Criminology (Applied Forensic Science Stream) - Degree Completion Pathway Certificate in Forensic Science be changed in accordance with the program/course change forms.^

^Subject to approval of the expenditures required.

Rationale/Approvals:

- This minor program change has been approved by the Science Program Development Committee (SPDC) (as delegated by the Faculty of Science Coordinating Council).
- *See attached.*

TITLE OF PROGRAM(S)/CERTIFICATE(S):	Honours Bachelor of Forensic Science (BFS) Combined Bachelor of Arts in Forensics Combined Bachelor of Arts in Forensics and Criminology (Applied Forensic Science Stream) - Degree Completion Pathway Certificate in Forensic Science
DEPARTMENT(S)/SCHOOL(S):	Office of the Dean of Science, Faculty of Science
FACULTY(IES):	Faculty of Science

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall 2023

A.1 PROGRAM REQUIREMENT CHANGES

Please provide the current program requirements and the proposed new program requirements by cutting and pasting from the current undergraduate or graduate web calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

Example:
Degree requirements: WXYZ-1000, ~~WXYZ-1010~~, WXYZ-1100, WXYZ-2100, WXYZ-3100, WXYZ-4100, plus three additional courses at the **3000-level or** 4000-level.

Honours Bachelor of Forensic Science (BFS)
Degree Requirements
Total courses: forty
(a) **FRSC 1000**; FRSC-1101; ~~FRSC-2007~~; ~~FRSC-2100~~; **FRSC 2101**; FRSC-3010; FRSC-3101; FRSC-3105; FRSC-3111; FRSC4207; FRSC-4217; FRSC-4002 **plus one additional course from area of concentration OR** FRSC-4900 (two semester course); BIOL-2063; LAWS-2190;
(b) any three of the following (if not required in chosen area of concentration): FRSC-3201; FRSC-3217; FRSC-3231; ~~FRSC-4227~~; ~~FRSC-4237~~; FRSC-4018; FRSC-4120; **FRSC-4201**
(c) ~~ten~~ **eleven** additional courses from one of the four following areas of concentration: Biology, Chemistry, Life Sciences or Information Technology. At least four of these courses must be at the 3000 level or above. The area of concentration must be declared prior to entry of second year studies.
(d) BIOL-1101; BIOL-1111; CHEM-1100; CHEM-1110; CHEM-2300 ~~OR CHEM-2320 (CHEM 2300 if CHEM 2310 is required in chosen area of concentration)~~; MATH-1720; STAT-2910; one pair of PHYS-1300 and PHYS-1310 OR PHYS-1400 and PHYS-1410 (PHYS-1400 and PHYS-1410 are required in Chemistry concentration); COMP-1047;
(e) three courses from any area of study.

Courses that are used to calculate the major average: courses listed under requirements (a) and (b), and courses in the chosen area of concentration.

Combined Bachelor of Arts in Forensics
Total courses: forty.
(a) Forensics: PHIL-2260 or HIST-2870 or GART-2090; BIOL-2063; ~~FRSC-3231~~; BIOL-1101; BIOL-1111; any one from COMP-1047, PSYC-1150 or ESCI-1100; one of SOSC-2500 or STAT-2910; **FRSC-1000;** FRSC-1101; ~~FRSC-2007~~; ~~FRSC-2100~~; **FRSC-2101**; FRSC-3010; FRSC-3105; FRSC-3111; **FRSC-3231;** LAWS-2190; FRSC-4207; any three of the following: FRSC-3217; FRSC-4018; ~~FRSC-4227~~; ~~FRSC-4237~~; FRSC-4002 **OR** FRSC-4900 (two credit course); FRSC-4120**; FRSC-4201;** FRSC-4217.

(b) Course requirements-Other Subject in Arts, Humanities and Social Sciences: courses used to calculate the major average in the other subject area, as prescribed by that area of study.
(c) additional courses (if required) to a total of forty courses. MATH-1760/MATH-1720 is strongly recommended.

Courses used to calculate the major average are: courses listed under requirements (a) and (b), and any courses taken in the major area(s) of study.

RECOMMENDED COURSE SEQUENCING
First Year: ten courses, including: BIOL-1101; BIOL-1111; **FRSC-1000; FRSC-1101;** ~~FRSC-2007~~; ~~MATH-1720 (or MATH-1760)~~**; BIOL-2063; any one from COMP-1047, PSYC-1150 or ESCI-1100; first-year courses in Other Subject**
Second Year: ten courses, including: ~~BIOL-2111; SACR-2600~~; ~~BIOL-2063~~**FRSC-2101; LAWS 2190;** STAT-2910 (or SOSC-2500); **GART-2090 or HIST 2870 OR PHIL 2260; second year courses in Other Subject.**
Third Year: ten courses, including: FRSC-3010 ~~LAWS-2190~~; FRSC-3105; FRSC-3111; FRSC-3231, **one or two forensic options; third year courses in Other Subject**.
Fourth Year: ten courses, including: FRSC 4207; ~~LAWS-2190 FRSC-3010; HIST-2870 or PHIL-2260 ;~~ **one or two forensic options; fourth year courses in Other Subject**.

Combined Bachelor of Arts in Forensics and Criminology (Applied Forensic Science Stream) - Degree Completion Pathway

Recognized programs include:
• Police Foundations (MCU Code 53008)
• Any program from a qualifying Ontario CAAT or other Canadian College deemed equivalent by the Dean of Science or their designate.
Note: Three-year diplomas programs in relevant fields will be analyzed for additional potential credit transfer on an ad-hoc basis, while considering minimum residency and core course requirements.

Degree Requirements
Total Courses: 21 (list of remaining courses required for completion of degree program.)

(a) Forensics (12 courses): ~~BIOL-2063;~~ ~~FRSC-3231;~~ BIOL-1101; BIOL-1111; **BIOL-2063;** SOSC-2500 or STAT-2910; **FRSC-1000** ~~FRSC2007~~; ~~FRSC-2100~~ **FRSC-2101**; FRSC-3105; FRSC-3111; **FRSC-3231**FRSC-4207; **;** LAWS-2190; one of the following: FRSC-3217, FRSC-4018, ~~FRSC-4227~~, ~~FRSC-4237~~, FRSC-4120 or FRSC-4217.

(b) Criminology (9 courses): SACR-1100 ~~or SACR-1000~~; SACR-2900; SACR-2910; SACR-3080; SACR-3900; SACR-3730 or SACR-3910 or SACR-3560; one of the following: SACR-3500; SACR-3620, SACR-3630, SACR-3650, SACR3670, SACR-3700, SACR-3740, SACR-3710 or SACR-3820; two SACR-4000-level courses, including one of SACR-4210, SACR-4500, SACR-4600, SACR-4610, SACR-4640, SACR-4650, SACR-4670 or SACR-4910.

RECOMMENDED COURSE SEQUENCING
[Note: Courses in bold must be taken in the semester listed in order to allow for sequencing. Courses in italics are only offered once a year. * indicates course may be offered during summer session.]
Year 1: Fall: ~~FRSC-2100~~, **FRSC 1000; FRSC 2101**; **BIOL-1101**, BIOL-2063, SACR-1100*
Winter: ~~FRSC-2007~~, BIOL-1111, SOSC-2500*, SACR-2900, SACR-**2910** ~~3230~~, **FRSC-3105 or FRSC-3231** ~~SACR-3080* or SACR-3730~~
Intersession: ~~FRSC-3105~~ **SACR-3080**
Year 2: Fall: FRSC-4207, LAWS-2190, ~~SACR-2910~~, SACR-**3900; one of SACR 3560, 3730, SACR 3910; one SACR-3xxx class from list;** ~~(one of), SACR-3080 or SACR-3730~~
Winter: FRSC-3111, **FRSC-3105 or FRSC-3231; FRSC 4XXX;** SACR-4XXX, **SACR-4XXX class from list.** ~~SACR-3900, FRSC-XXXX*, SACR-3620/3630~~

Certificate in Forensic Science

Admission Requirements

~~All students who have met the entrance requirements for Science or who are in good standing are eligible to register for the certificate program.~~ Open only to students currently enrolled in a degree program and in good academic standing in their program.

Total courses: 8

a) Fundamentals of forensic science (four required courses):
   - FRSC 1101/~~1107~~ Introductory Crime Scene Investigation
   - FRSC **1000** ~~2007~~ Introduction to Forensic Science
   - ~~FRSC 2100 Crime Scene Evidence Analysis~~ **FRSC 2101 Applied Crime Scene Techniques**
   - ~~SACR 2150 Principles of Physical Anthropology~~ **BIOL 2063 Principles of Biological Anthropology**

b) Hands on skills (1 course):
   Students must select one course from the following:
   - FRSC 3101 **Laboratory in** Forensic Science ~~Laboratory~~
   - FRSC 3105 Forensic Identification

c) Legal Context (1 course):
   Students must select one course from the following:
   - LAWS 2190 Forensic Evidence and the Canadian Legal System
   - FRSC 3010 Expert Witness in Forensic Science

d) Advanced Knowledge and Skills (2 courses):
   Students must select two courses from the following:
   - FRSC 3201 Applied Entomology
   - FRSC 3217 Forensic Serology and DNA Analysis
   - ~~SACR 3230~~ **FRSC 3231** Forensic Anthropology
   - FRSC 4207 New Perspectives in Forensic Evidence Analysis
   - FRSC 4217 Advances in Human Identification
   - ~~FRSC 4227 Forensic Medicine: Toxins and Pathology~~
   - ~~FRSC 4237 Bioterrorism~~

This certificate program is designed for Science but is also available to any student with an interest in forensic sciences who has available open courses.

A.2 MINOR COURSE CHANGES REQUIRING ADDITIONAL RESOURCES OR AFFECTING DEGREE REQUIREMENTS

*If this is a minor course and calendar change (usually noted on a Form E) requiring additional resources or affecting degree requirements, please provide the current course information and the proposed new course information by cutting and pasting from the current undergraduate or graduate web calendar and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with **bolding** and underlining.*

*Examples of minor course changes include: deleting courses, course description changes, pre/anti/co- requisite changes, contact hour/lab requirement changes, course title changes, renumbering courses, and/or cross-listing courses. Minor course calendar changes, which do not require additional resources or do not affect degree requirements, should be submitted on a **Form E.***

N/A

B. RATIONALE

Please provide a rationale for the proposed change(s).

FRSC-2007 (Introduction to Forensic Science) is offered in both an online and in-person version. The two are being separated, with a new course proposal for an in-person version (FRSC-1000), which will be required for majors.

FRSC 2100 (Crime Scene Evidence Analysis) is online and is being replaced by a new course FRSC2101 (Applied Scene Techniques), which is an in-person course with an associated laboratory.

FRSC 4002 (Practicum in Forensic Sciences) and FRSC4900 (Research Thesis in Forensic Sciences) are both required; however students have had significant difficulty finding both a practicum placement and a thesis topic so only one will be required going forward.

CHEM-2320 is no longer offered by the Department of Chemistry and Biochemistry. Courses have been rearranged to group all department courses together.

SACR 2155 and SACR 3230 and 4120 have been changed to BIOL 2063, FRSC 3231, FRSC 4120, respectively, as a result of Dr. Albanese's courses moving from Department of Sociology and Criminology to Faculty of Science where he is now based.

FRSC 4227 and 4237 have been removed as courses for forensic science majors based on IQAP recommendations.

The BFS Honours course sequencing is not included here due to planned changes to the individual concentrations but will be incorporated at that point.

(Note: See accompanying Form Ds for the new course proposals FRSC-1000 and FRSC-2101)

B.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In revising this program, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*

- *Have you included the information in the other relevant areas in the PDC form such as learning outcomes and/or in the syllabus where appropriate?*

- *What **process** has your department/Faculty used to consider Indigenization?*

The Faculty of Science, in which the forensic science programs are based, plans to welcome a recognized Knowledge Keeper as an expert in Indigenous-centred relationships to develop community-based initiatives in research, teaching and capacity development. The Department of Integrative Biology, which is the home AAU of two core forensic faculty (Albanese and VanLaerhoven) advertised, interviewed and is currently in negotiations with the preferred candidate for the position of Knowledge Keeper. With the support of this individual, the forensic faculty hope to develop new pedagogical initiatives to create Indigenous-focused learning strategies and outcomes for students within the Faculty of Science.

- ***How** have you considered the importance or relevance to the course/program?*

The Forensic Science programs and its faculty members are committed to introducing meaningful Indigenous content, perspectives and material into all aspects of the programs, in both current and future curriculum development. The following provide examples of initiatives taken by forensic faculty members to understand and consider the importance of incorporating Indigenous knowledge into their courses:

- Dr Shari Forbes (Chemistry and Biochemistry) commenced as a new professor in the program on January 1, 2023 and will take over the administration of the programs in the coming months. She is participating in the 6-week course with the Centre for Teaching and Learning titled 'Pulling Together: A Guide for Curriculum Developers' taught by Jaimie Kechego, a teaching and learning specialist in the field of Indigenization. This course is assisting her to identify biases and gaps in her own knowledge, to gain ideas for building relationships with Indigenous people in the surrounding communities, and to actively revise the curriculum with a new lens to identify ways to include Indigenous knowledge that will benefit all learners within the forensic science programs.
- While Dr Maria Cioppa (School of Environment) is stepping down as programs administrator, she plans to continue to supervise forensic research and thesis practicum students in geophysical research. Due to the subject matter relevance (the use of ground penetrating radar in cemeteries), she is also taking the CTL course to better incorporate Indigenous knowledges in her teaching and research.
- Professor John Albanese (forensic science faculty member) has incorporated Indigenous themes and concepts into the *BIOL-2063. Principles of Biological Anthropology* course taught to all forensic program majors. Topics include (as quoted by Dr. Albanese): "decolonization of knowledge creation, critiquing the racialization of human variation, and critiquing pseudo-scientific constructions of human differences that have been used to marginalize and exploit individuals and groups including Indigenous Peoples. A multidisciplinary, inclusive, and humanizing approach to understanding human evolution and modern human variation is presented in the course." Similar concepts and topics can be further incorporated into other courses within the forensic science program where human evolution and human variation is presented. Examples of relevant courses which have the flexibility to incorporate these topics include: FRSC-1000 Introduction to Forensic Science (the course for which this document applies), FRSC-3217 Forensic Serology and DNA Applications, FRSC-3231 Forensic Anthropology, FRSC-4120 Human Skeletal Variation, FRSC 4002 Practicum (placement-dependent) and FRSC 4900 Research Thesis (topic matter dependent).

- *What do the TRC and University Principles documents suggest relevant to your course?*

The TRC recommends developing culturally appropriate curriculum which we will endeavour to achieve through consultation with the appropriate people and resources at the University of Windsor. It recommends respecting and honouring Treaty relationships. We are increasing our understanding of these relationships through the Pulling Together workshop which involves self-reflection activities about the TRC Calls to Action. One of the TRC principles

particularly relevant to our forensic science courses is the 'Investigation of Missing and Murdered Indigenous Women and Girls (MMIWG)'. One of our police Sessional Instructors has recently established a Cold Case Taskforce through the Windsor Police Service. Prior to commencing this taskforce, he reached out to the Can-Am Indian Friendship Centre of Windsor to seek their input on investigating MMIWG as part of this taskforce. He is also incorporating content on MMIWG in the FRSC 4018-2 Cold Case Investigations course taught to our forensic science students. This will assist to raise their awareness and prepare those students who will be working on cold cases relating to MMIWG as part of their FRSC 4002 Practicum course with Windsor Police.

One of the guiding *University Principles* is to "recognize the importance of Indigenous education leadership through representation at the governance level and within faculty, professional and administrative staff." Dr Sherah VanLaerhoven (Integrative Biology) is of Indigenous heritage and has had significant input into curriculum design and planning of the forensic science programs. Her awareness of Indigenous knowledges has informed the planning process and informs her teaching and research in forensic science.

- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

We recognize that our knowledge of the history of land acknowledgements and other approaches is limited. Before introducing Indigenous knowledge into the forensic science programs, we are endeavouring to recognize our knowledge gaps and biases, and address these by attending courses (mentioned above) and other events such as the Indigenous Speaker Series through the Elder College Team. Some of this content also focuses on Settler Colonialism and Decolonization and requires self-reflection activities to engage in a critical analysis of these topics.

- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

Through self-analysis, we recognize that our ability to incorporate Indigenous knowledge and content in this course is currently limited. Rather than implementing Indigenous learning outcomes immediately, we are committing to increasing our knowledge and understanding of the importance of Indigenizing all forensic science curriculum, not just one course. Through this journey, we will identify Indigenous material and perspectives that are particularly relevant to our students and will expand on this question in future forms with our intents and actions.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do <u>not</u> name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from <u>other</u> campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example:

- *faculty resources (within and outside the unit),*
- *existing courses (within and outside the unit),*

- *equipment or facilities outside the proposer's control,*
- *external resources requiring maintenance or upgrading using external resources*
- *staff support,*
- *library,*
- *teaching and learning support,*
- *information technology support,*
- *laboratory access,*
- *student support services,*
- *space,*
- *equipment,*
- *facilities*
- *GA/TA*

There are sufficient resources to accommodate the revised program.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

N/A

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

N/A

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program.*

If not applicable, write n/a.

Faculty:	N/A
Staff:	N/A
GA/TAs:	N/A

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance.*

If not applicable, write n/a.

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	N/A

University of Windsor
Program Development Committee

*5.2 **Forensic Science – New Course Proposals (Form D)**

Item for: **Approval**

MOTION: That the following courses be approved:^
FRSC-1000. Introduction to Forensic Science
FRSC-2101. Applied Crime Scene Techniques
FRSC-4201. Forensic Chemistry

^Subject to approval of the expenditures required.

Rationale/Approvals:

- This minor program change has been approved by the Science Program Development Committee (SPDC) (as delegated by the Faculty of Science Coordinating Council).
- *See attached.*

TITLE OF PROGRAM(S)/CERTIFICATE(S):	**Bachelor of Forensic Science**
DEPARTMENT(S)/SCHOOL(S):	**Science**
FACULTY(IES):	**Science**

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall 2023

A. NEW COURSE PROFILE

Course # and Title: FRSC-1000 Introduction to Forensic Science

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

This course will survey the many disciplines of Forensic Science from the crime scene, to the laboratory, and ultimately to the courtroom. It will incorporate expertise in crime scene and death investigations including bloodstain pattern analysis, forensic pathology, entomology, and anthropology. It will also include guest speakers from the fields of forensic biology, chemistry, and pattern and impression evidence. Guest lectures by a range of practicing forensic scientists will give students direct contact with these experts, and a greater understanding of the role they play in the collection, analysis and presentation of evidence in court (3 lecture hours). This course is restricted to forensic science majors. (Anti-requisite: FRSC-2007)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☐ labs
- ☒ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Lecture	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3	36	X				3			

Pre-requisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*
		FRSC 2007		Y	FRSC 2007

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course will only be available to students enrolled in the Honours Bachelor of Forensic Science (BFS), Combined Bachelor of Arts in Forensics, and Combined Bachelor of Arts in Forensics and Criminology (Applied Forensic Science Stream). It will be a required course to provide an introduction to the many disciplines of forensic science during their first year of the program.

A version of this course was offered as FRSC 2007. However, that course was offered in both online and in-person sections, and forensic students could take either. We wish to move this course to an in-person (or hybrid) first year, first semester course, with a focus on interactions and networking with local and regional experts. The current course code of FRSC 2007 is not indicative of the level at which it should be taught. It will act as a pre-requisite for forensic science courses taken in the second year of their program.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

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- ***How** have you considered the importance or relevance to the course/program?*
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- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
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- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

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The Faculty of Science, in which the forensic science programs are based, plans to welcome a recognized Knowledge Keeper as an expert in Indigenous-centered relationships to develop community-based initiatives in research, teaching and capacity development. The Department of Integrative Biology, which is the home AAU of two core forensic faculty (Albanese and VanLaerhoven) advertised, interviewed and is currently in negotiations with the preferred candidate for the position of Knowledge Keeper. With the support of this individual, the forensic faculty hope to develop new pedagogical initiatives to create Indigenous-focused, learning strategies and outcomes for students within the Faculty of Science.

- ***How** have you considered the importance or relevance to the course/program?*

The Forensic Science programs and its faculty members are committed to introducing meaningful Indigenous content, perspectives and material into all aspects of the programs, in both current and future curriculum development. The following provide examples of initiatives taken by forensic faculty members to understand and consider the importance of incorporating Indigenous knowledge into their courses:

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marginalize and exploit individuals and groups including Indigenous Peoples. A multidisciplinary, inclusive, and humanizing approach to understanding human evolution and modern human variation is presented in the course." Similar concepts and topics can be further incorporated into other courses within the forensic science program where human evolution and human variation is presented. Examples of relevant courses which have the flexibility to incorporate these topics include: FRSC-1000 Introduction to Forensic Science (the course for which this document applies), FRSC-3217 Forensic Serology and DNA Applications, FRSC-3231 Forensic Anthropology, FRSC-4120 Human Skeletal Variation, FRSC 4002 Practicum (placement-dependent) and FRSC 4900 Research Thesis (topic matter dependent).

- *What do the TRC and University Principles documents suggest relevant to your course?*

The TRC recommends developing culturally appropriate curriculum which we will endeavour to achieve through consultation with the appropriate people and resources at the University of Windsor. It recommends respecting and honouring Treaty relationships. We are increasing our understanding of these relationships through the Pulling Together workshop which involves self-reflection activities about the TRC Calls to Action. One of the TRC principles particularly relevant to our forensic science courses is the 'Investigation of Missing and Murdered Indigenous Women and Girls (MMIWG)'. One of our police Sessional Instructors has recently established a Cold Case Taskforce through the Windsor Police Service. Prior to commencing this taskforce, he reached out to the Can-Am Indian Friendship Centre of Windsor to seek their input on investigating MMIWG as part of this taskforce. He is also incorporating content on MMIWG in the FRSC 4018-2 Cold Case Investigations course taught to our forensic science students. This will assist to raise their awareness and prepare those students who will be working on cold cases relating to MMIWG as part of their FRSC 4002 Practicum course with Windsor Police.

One of the guiding *University Principles* is to "recognize the importance of Indigenous education leadership through representation at the governance level and within faculty, professional and administrative staff." Dr Sherah VanLaerhoven (Integrative Biology) is of Indigenous heritage and has had significant input into curriculum design and planning of the forensic science programs. Her awareness of Indigenous knowledges has informed the planning process and informs her teaching and research in forensic science.

- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

We recognize that our knowledge of the history of land acknowledgements and other approaches is limited. Before introducing Indigenous knowledge into the forensic science programs, we are endeavouring to recognize our knowledge gaps and biases, and address these by attending courses (mentioned above) and other events such as the Indigenous Speaker Series through the Elder College Team. Some of this content also focuses on Settler Colonialism and Decolonization and requires self-reflection activities to engage in a critical analysis of these topics.

- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

Through self-analysis, we recognize that our ability to incorporate Indigenous knowledge and content in this course is currently limited. Rather than implementing Indigenous learning outcomes immediately, we are committing to increasing our knowledge and understanding of the importance of Indigenizing all forensic science curriculum, not just one course. Through this journey, we will identify Indigenous material and perspectives that are particularly relevant to our students and will expand on this question in future forms with our intents and actions.

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Describe the use of various disciplines of forensic sciences in the collection, analysis and presentation of evidence in court. Recognize the role of forensic and death investigators at crime scenes, the role of forensic scientists in the analysis of evidence, and the role of expert witnesses in a court of law.	A. the acquisition, application and integration of knowledge
B. Identify the origins, types and admissibility of evidence. Identify the appropriate expertise required for specific aspects of a crime scene or death investigation. Determine the appropriate forensic laboratory expertise to submit evidence to, and identify the analysis and results required to further the investigation.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Employ the techniques of different disciplines of forensic science to the analysis and interpretation of forensic evidence. Apply the correct method to solve a specific question of an investigation.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E. Explain the qualifications required to become a Crime Scene Investigator or Forensic Scientist as an expert in a court of law. Identify and follow the professional and ethical standards required for forensic practitioners.	E. responsible behaviour to self, others and society

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
F. Communicate forensic findings clearly and accurately in technical and expert opinion reports.	F. interpersonal and communications skills
G. Contribute consistently and constructively to teamwork.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I. Explore the diverse scope of forensic science disciplines and identify individual areas of interest for future study within the forensic sciences.	I. the ability and desire for continuous learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	75	75	75	75	75

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

Currently students enrolled in the forensic science programs can choose to take either an in-person or online section of FRSC-2007. By offering this new course (FRSC-1000), we can mandate that all forensic science students take the in-person course (with hybrid options available to those who require it), providing them with greater access to practicing forensic scientists which will enhance their network of future contacts for a career in forensic science. By transitioning these approx. 75 students from the current asynchronous and in-person FRSC-2007 sections to the in-person (hybrid) FRSC-1000 course, this will provide additional places in the asynchronous FRSC-2007-91 course for students enrolled in any other degree at the University of Windsor.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the

quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example:

- *faculty resources (within and outside the unit),*
- *existing courses (within and outside the unit),*
- *equipment or facilities outside the proposer's control,*
- *external resources requiring maintenance or upgrading using external resources*
- *staff support,*
- *library,*
- *teaching and learning support,*
- *information technology support,*
- *laboratory access,*
- *student support services,*
- *space,*
- *equipment,*
- *facilities*
- *GA/TA*

The course will be taught by current full-time forensic science professors in the faculty who have academic qualifications (minimum MSc) in forensic science. The course requires an extensive network of relevant contacts to invite as guest speakers.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

The course will be taught by current full-time forensic science professors in the faculty who have academic qualifications (minimum MSc) in forensic science. Adjunct or Sessional Instructors could also teach the course if they can demonstrate equivalent training and certifications in scene of crime investigation and forensic identification. The course requires an extensive network of relevant contacts to invite as guest speakers.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

No additional resources are required as we currently have two offerings of FRSC 2007 in the forensic science program (one in-person and one online). Since this is an introductory survey course to forensic science, any member of the forensic science program with academic qualifications in forensic science or equivalent training and expertise in forensic investigations (including full-time faculty, Professors of Practice, and adjunct/sessional instructors) would be

qualified to teach this course as the main requirement is recognized expertise in forensic science and an extensive network of contacts with crime scene and forensic practitioners.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

N/A

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program.*

If not applicable, write n/a.

Faculty:	N/A
Staff:	N/A
GA/TAs:	N/A

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	N/A

A. NEW COURSE PROFILE

Course # and Title: FRSC-2101 Applied Crime Scene Techniques

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

This course will build upon the initial knowledge acquired during the prerequisite FRSC-1000 Introduction to Forensic Science and FRSC-1101 Introductory Crime Scene Investigation and Techniques courses. It will involve the application of techniques used in the field of Crime Scene Investigation. The course will provide students with an introduction to the ethical, legal and professional practice requirements in forensic investigations. It will expand on the student's prior knowledge relating to evidence identification, collection and processing, by introducing practical laboratories that teach the student how to enhance, recover, and interpret evidence typically located at crime scenes. This can include fingerprint, footwear and tire impressions; firearms discharge residue; toolmarks; and basic bloodstain patterns. (3 lecture hours, 3 lab hours). (This course is restricted to students enrolled in a forensic science major program.) (Prerequisites: FRSC-1000, FRSC-1101.)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Lecture	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3	72	X				3	3		

Pre-requisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*
FRSC-1000, FRSC-1101				Yes	FRSC-2100

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course will only be available to students enrolled in the Honours Bachelor of Forensic Science (BFS), Combined Bachelor of Arts in Forensics, and Combined Bachelor of Arts in Forensics and Criminology (Applied Forensic Science Stream). It will be a required course for forensic majors to provide hands-on experience in the application of crime scene techniques. It will act as a pre-requisite for FRSC-3105 (Forensic Identification) and FRSC-3111 (Digital Photography in Forensic Science) taken in the third year of all forensic programs.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

- *What **process** has your department/Faculty used to consider Indigenization?*

The Faculty of Science, in which the forensic science programs are based, plans to welcome a recognized Knowledge Keeper as an expert in Indigenous-centered relationships to develop community-based initiatives in research, teaching and capacity development. The Department of Integrative Biology, which is the home AAU of two core forensic faculty (Albanese and VanLaerhoven) advertised, interviewed and is currently in negotiations with the preferred candidate for the position of Knowledge Keeper. With the support of this individual, the forensic faculty hope to develop new pedagogical initiatives to create Indigenous-focused, learning strategies and outcomes for students within the Faculty of Science.

- ***How** have you considered the importance or relevance to the course/program?*

The Forensic Science programs and its faculty members are committed to introducing meaningful Indigenous content, perspectives and material into all aspects of the programs, in both current and future curriculum development. The following provide examples of initiatives taken by forensic faculty members to understand and consider the importance of incorporating Indigenous knowledge into their courses:

- Dr Shari Forbes (Chemistry and Biochemistry) commenced as a new professor in the program on January 1st, 2023 and will take over the administration of the programs in the coming months. She is participating in the 6-week course with the Centre for Teaching and Learning titled 'Pulling Together: A Guide for Curriculum Developers' taught by Jaimie Kechego, a teaching and learning specialist in the field of Indigenization. This course is assisting her to identify biases and gaps in her own knowledge, to gain ideas for building relationships with Indigenous people in the surrounding communities, and to actively revise the curriculum with a new lens to identify ways to include Indigenous knowledge that will benefit all learners within the forensic science programs.
- While Dr Maria Cioppa (School of Environment) is stepping down as programs administrator, she plans to continue to supervise forensic research and thesis practicum students in geophysical research. Due to the subject matter relevance (the use of ground penetrating radar in cemeteries), she is also taking the CTL course to better incorporate Indigenous knowledges in her teaching and research.
- Professor John Albanese (forensic science faculty member) has incorporated Indigenous themes and concepts into the *BIOL-2063. Principles of Biological Anthropology* course taught to all forensic program majors. Topics include (as quoted by Dr. Albanese): "decolonization of knowledge creation, critiquing the racialization of human variation, and critiquing pseudo-scientific constructions of human differences that have been used to marginalize and exploit individuals and groups including Indigenous Peoples. A multidisciplinary, inclusive, and humanizing approach to understanding human evolution and modern human variation is presented in the course." Similar concepts and topics can be further incorporated into other courses within the forensic science program where human evolution and human variation is presented. Examples of relevant courses which have the flexibility to incorporate these topics include: FRSC-1000 Introduction to Forensic Science (the course for which this document applies), FRSC-3217 Forensic Serology and DNA Applications, FRSC-3231 Forensic Anthropology, FRSC-4120 Human Skeletal Variation, FRSC 4002 Practicum (placement-dependent) and FRSC 4900 Research Thesis (topic matter dependent).

- *What do the TRC and University Principles documents suggest relevant to your course?*

The TRC recommends developing culturally appropriate curriculum which we will endeavour to achieve through consultation with the appropriate people and resources at the University of Windsor. It recommends respecting and honouring Treaty relationships. We are increasing our understanding of these relationships through the Pulling Together workshop which involves self-reflection activities about the TRC Calls to Action. One of the TRC principles particularly relevant to our forensic science courses is the 'Investigation of Missing and Murdered Indigenous Women

and Girls (MMIWG)'. One of our police Sessional Instructors has recently established a Cold Case Taskforce through the Windsor Police Service. Prior to commencing this taskforce, he reached out to the Can-Am Indian Friendship Centre of Windsor to seek their input on investigating MMIWG as part of this taskforce. He is also incorporating content on MMIWG in the FRSC 4018-2 Cold Case Investigations course taught to our forensic science students. This will assist to raise their awareness and prepare those students who will be working on cold cases relating to MMIWG as part of their FRSC 4002 Practicum course with Windsor Police.

One of the guiding *University Principles* is to "recognize the importance of Indigenous education leadership through representation at the governance level and within faculty, professional and administrative staff." Dr Sherah VanLaerhoven (Integrative Biology) is of Indigenous heritage and has had significant input into curriculum design and planning of the forensic science programs. Her awareness of Indigenous knowledges has informed the planning process and informs her teaching and research in forensic science.

- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

We recognize that our knowledge of the history of land acknowledgements and other approaches is limited. Before introducing Indigenous knowledge into the forensic science programs, we are endeavouring to recognize our knowledge gaps and biases, and address these by attending courses (mentioned above) and other events such as the Indigenous Speaker Series through the Elder College Team. Some of this content also focuses on Settler Colonialism and Decolonization and requires self-reflection activities to engage in a critical analysis of these topics.

- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

Through self-analysis, we recognize that our ability to incorporate Indigenous knowledge and content in this course is currently limited. Rather than implementing Indigenous learning outcomes immediately, we are committing to increasing our knowledge and understanding of the importance of Indigenizing all forensic science curriculum, not just one course. Through this journey, we will identify Indigenous material and perspectives that are particularly relevant to our students and will expand on this question in future forms with our intents and actions.

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A.Describe the scientific principles of crime scene investigation. Collect and preserve common types of crime scene evidence (such as fingerprints, footwear and tire impressions) using appropriate techniques.	A.the acquisition, application and integration of knowledge
B. Evaluate the capabilities and limitations of crime scene techniques used at the scene and in the laboratory. Follow correct scientific procedures for crime scene processing.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Synthesize evidential and investigative information from multiple sources to generate theories about a crime.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E. Use ethical and legal principles to make decisions related to investigative techniques, analysis of evidence, and courtroom testimony (also relevant to C).	E. responsible behaviour to self, others and society
F. Communicate forensic findings clearly and accurately in technical and expert opinion reports.	F. interpersonal and communications skills
G. Contribute consistently and constructively to a team by processing crime scenes and conducting analyses of evidence collected.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I. Explore the diverse scope of forensic science disciplines and identify individual areas of interest for future study within the forensic sciences	I. the ability and desire for continuous learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	75	75	75	75	75

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

This course will replace FRSC-2100-91 Crime Scene Evidence Analysis which is a required course for all forensic science programs and is presently taught asynchronously. This new course will provide a higher quality learning

experience for the students by offering in-person instruction and a laboratory component for practical application of the crime scene theory they have learnt in prior courses (FRSC-1000 and FRSC-1101). There will be no impact on enrolment in existing courses in the program.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA.

The Professors of Practice in the forensic science program are practising crime scene investigators, and thus have the greatest experience in the subject matter of the proposed new course.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

The Professors of Practice in the forensic science program are practising crime scene investigators, and thus have the greatest experience in the subject matter of the proposed new course. While full-time forensic faculty members could teach this course if they are qualified forensic scientists who attend crime scenes, our forensic science students would benefit greatly from the enhanced expertise and realistic case examples that Professors of Practice can provide. For this reason, it is recommended that this course is taught by a Professor of Practice who is currently or has recently been a qualified forensic identification practitioner.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

Since the current asynchronous course is being replaced with this lecture/lab course, there will be additional resources required to offer a high-quality, practical learning experience for all forensic science students. It is envisioned that this course will be taught by a Professor of Practice (see justification previously) who is a forensic practitioner with extensive experience in crime scene investigation.

The forensic programs have recently been allocated functional laboratory space (Essex Hall 112) that will be used for this course. Laboratory facilities should not be an issue. Discussions are already ongoing with the Faculty of Science Manager to purchase some of the new equipment that would be required in this course (e.g. cyanoacrylate fuming chamber). Some of the equipment (e.g. light sources and cameras) is already available but additional cameras will need to be purchased to allow all students to practice using these crime scene techniques in the allocated lab time. The remaining items required to teach this course are predominantly smaller consumables that can be accounted for in the budget provided to the forensic science program each year. Based on the projected enrolment of the course, three TA/GAs will be required for the lab component of the course.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

Since this is replacing FRSC 2100, the resources currently dedicated to that course (such as TAs) will go towards this new course.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	N/A
Staff:	N/A
GA/TAs:	N/A

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	N/A

A. NEW COURSE PROFILE

Course # and Title: FRSC 4201 Forensic Chemistry

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

Forensic chemistry introduces the application of analytical and instrumental chemistry to forensic science. It is distinguished from other types of chemistry by the legal context in which the work is conducted, the types of samples and matrices analysed, and the extensive use of instrumentation to the interpretation of forensic evidence. The course will review fundamental principles and chemical concepts from a forensic perspective, including sample collection and preparation, internal and external standards, calibration, quality assurance and control, and chemometrics. The course focuses on microscopic, spectroscopic and separation techniques and their applications to drugs and poisons, combustion evidence, and other types of trace evidence. (Prerequisites: CHEM 2210, CHEM 3210; 3 lecture hours, 3 lab hours).

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Lecture	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3	72	72				3	3		

Pre-requisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*

CHEM-2200, CHEM-3210				Y	

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	N/A

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course will be required for students enrolled in the Honours Bachelor of Forensic Science (BFS) – Chemistry concentration. This course will fulfil one of the future requirements for this stream of the BFS program to be accredited by the Forensic Science Education Programs Accreditation Committee.

It will be offered as one of the optional forensic science courses for the other areas of concentration in the BFS (namely Life Sciences and Biology), as well as being available to students enrolled in the Combined Bachelor of Arts in Forensics and any other science degree if all pre-requisites have been met.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
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- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
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- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

- *What **process** has your department/Faculty used to consider Indigenization?*

The Faculty of Science, in which the forensic science programs are based, plans to welcome a recognized Knowledge Keeper as an expert in Indigenous-centered relationships to develop community-based initiatives in research, teaching and capacity development. The Department of Integrative Biology, which is the home AAU of two core forensic faculty (Albanese and VanLaerhoven) advertised, interviewed and is currently in negotiations with the preferred candidate for the position of Knowledge Keeper. With the support of this individual, the forensic faculty hope to develop new pedagogical initiatives to create Indigenous-focused, learning strategies and outcomes for students within the Faculty of Science.

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The Forensic Science programs and its faculty members are committed to introducing meaningful Indigenous content, perspectives and material into all aspects of the programs, in both current and future curriculum development. The following provide examples of initiatives taken by forensic faculty members to understand and consider the importance of incorporating Indigenous knowledge into their courses:

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- *What do the TRC and University Principles documents suggest relevant to your course?*

The TRC recommends developing culturally appropriate curriculum which we will endeavour to achieve through consultation with the appropriate people and resources at the University of Windsor. It recommends respecting and honouring Treaty relationships. We are increasing our understanding of these relationships through the Pulling Together workshop which involves self-reflection activities about the TRC Calls to Action. One of the TRC principles particularly relevant to our forensic science courses is the 'Investigation of Missing and Murdered Indigenous Women

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One of the guiding *University Principles* is to "recognize the importance of Indigenous education leadership through representation at the governance level and within faculty, professional and administrative staff." Dr Sherah VanLaerhoven (Integrative Biology) is of Indigenous heritage and has had significant input into curriculum design and planning of the forensic science programs. Her awareness of Indigenous knowledges has informed the planning process and informs her teaching and research in forensic science.

- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

We recognize that our knowledge of the history of land acknowledgements and other approaches is limited. Before introducing Indigenous knowledge into the forensic science programs, we are endeavouring to recognize our knowledge gaps and biases, and address these by attending courses (mentioned above) and other events such as the Indigenous Speaker Series through the Elder College Team. Some of this content also focuses on Settler Colonialism and Decolonization and requires self-reflection activities to engage in a critical analysis of these topics.

- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

Through self-analysis, we recognize that our ability to incorporate Indigenous knowledge and content in this course is currently limited. Rather than implementing Indigenous learning outcomes immediately, we are committing to increasing our knowledge and understanding of the importance of Indigenizing all forensic science curriculum, not just one course. Through this journey, we will identify Indigenous material and perspectives that are particularly relevant to our students and will expand on this question in future forms with our intents and actions.

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Ensure accuracy of measurements in chemical analyses in a forensic context. Apply the chemical fundamentals of partitioning, equilibria and acid-base chemistry to forensic chemical evidence.	A. the acquisition, application and integration of knowledge
B. Identify the appropriate instrumentation to be used for specific types of forensic evidence. Apply the most appropriate calibration and quality assurance techniques to each type of instrumentation employed.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Determine when to use presumptive versus confirmatory techniques. Apply the correct sequence of techniques to a given evidence type.	C. critical thinking and problem-solving skills
D. Conduct statistical analysis of laboratory experimental data through chemometrics	D. literacy and numeracy skills
E. Identify and follow the professional and ethical standards required for forensic chemistry practitioners. Explain the legal context in which forensic chemistry is conducted and its application to a just society.	E. responsible behaviour to self, others and society
F. Present results of forensic investigation clearly, accurately, and succinctly both orally and in writing.	F. interpersonal and communications skills
G. Contribute collaboratively to laboratory experiments Contribute productively and knowledgeably to a forensic investigation team.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	15	15	30	30	30

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

Due to the pre-requisites required for this new course (specifically CHEM-2200 and CHEM-3210), there may be an increase in enrolments in both courses in order to be eligible to take FRSC-4201 Forensic Chemistry in subsequent years. However, both courses are already requirements of the BFS Chemistry concentration. The only increase would be due to students in the other BFS concentrations or the BA Combined degree wishing to take FRSC 4201 in their final year and therefore requiring these pre-requisites. It is anticipated that this number would be small (5-10 students) and can be readily incorporated into the current offerings of CHEM-2200 and CHEM-3210 (following discussion with the Head of Department for Chemistry and Biochemistry).

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA.

Forensic science faculty members are available to teach the course.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

There is no reliance on adjunct, limited-term or sessional faculty for this course as the required expertise is available within the forensic science faculty members and associated students.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

Through the recent hire of a tenured forensic chemistry professor, the expertise to teach this course is now permanently available within the program. The additional resources needed to teach this course will predominantly result from the weekly 3-hour laboratory that is required to fulfil the learning outcomes and future accreditation of the BFS Chemistry concentration.

Many of the instruments required to teach the laboratory experiments are already available within the Department of Chemistry and Biochemistry (e.g. AAS, IR/UV-Vis spectroscopy, GC-MS, HPLC), however they may require maintenance or upgrading in the future as all instruments are ageing and some have not been used in recent years. During the creation of the labs, there will be a need to work with a laboratory technician within the Department of Chemistry and Biochemistry to test and modify the experiments to ensure appropriate results are achieved. Once the labs are introduced into the course, a GA/TA will be requested to teach the laboratory component of the course on a weekly basis. As the forensic chemistry professor is based in the Department of Chemistry and Biochemistry, this request will be made to their Head of Department or directly to the Dean of Science.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

N/A

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	N/A
Staff:	1 (for testing of labs only)
GA/TAs:	1

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	Access to labs in Department of Chemistry and Biochemistry
Equipment (and Maintenance):	Instrumentation currently housed in Department of Chemistry and Biochemistry (AAS, IR/UV-Vis spectroscopy, GC-MS, HPLC)

University of Windsor
Program Development Committee

*5.3 **Sociology and Criminology – Minor Program Changes (Form C)**

Item for: **Approval**

Forwarded by: **Faculty of Arts Humanities and Social Sciences**

MOTION: That the Minor in Forensics and Cultural Anthropology be deleted.^

^Subject to approval of the expenditures required.

Rationale/Approvals:

- The change has been approved the Department of Sociology and Criminology Council and the Faculty of Arts Humanities and Social Sciences Coordinating Council.
- *See attached.*

TITLE OF PROGRAM(S)/CERTIFICATE(S):	**Minor in Forensics and Cultural Anthropology**
DEPARTMENT(S)/SCHOOL(S):	**Sociology & Criminology / Forensics**
FACULTY(IES):	**FAHSS / Science**

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall, 2023

A.1 PROGRAM REQUIREMENT CHANGES

Please provide the current program requirements and the proposed new program requirements by cutting and pasting from the current undergraduate or graduate web calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining. Example: Degree requirements: WXYZ-1000, ~~WXYZ-1010~~, WXYZ-1100, WXYZ-2100, WXYZ-3100, WXYZ-4100, plus three additional courses at the **3000-level or** 4000-level.

~~Minor in Forensic and Cultural Anthropology~~
~~Required: SACR-2130; BIOL-2063; FRSC-3231, SACR--3380; SACR-4150; and one of SACR-3150, SACR3400, SACR-3540.~~

A.2 MINOR COURSE CHANGES REQUIRING ADDITIONAL RESOURCES OR AFFECTING DEGREE REQUIREMENTS

*If this is a minor course and calendar change (usually noted on a Form E) requiring additional resources or affecting degree requirements, please provide the current course information and the proposed new course information by cutting and pasting from the current undergraduate or graduate web calendar and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with **bolding** and underlining.*

*Examples of minor course changes include: deleting courses, course description changes, pre/anti/co- requisite changes, contact hour/lab requirement changes, course title changes, renumbering courses, and/or cross-listing courses. Minor course calendar changes, which do not require additional resources or do not affect degree requirements, should be submitted on a **Form E.***

N/A

B. RATIONALE

Please provide a rationale for the proposed change(s).

The Department of Sociology and Criminology no longer has the faculty complement and student demand in Anthopology that it once did. As a result, the Anthropology program was discontinued; however, a Minor in Forensics and Cultural Anthropology is still on the books. There are currently no students enrolled in the minor. We also do not regularly offer the courses that would be required to complete the minor. We therefore think it prudent to discontinue this minor. We have consulted with Forensics' Council and they have agreed to discontinue the minor.

B.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

*The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967). In revising this program, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*
Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form such as learning outcomes and/or in the syllabus where appropriate?*

N/A

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section. Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university. Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources,staff support, library, teaching and learning support,information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA.

N/A

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

N/A

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

N/A

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

There will likely be cost-savings given that we will not need to offer courses to satisfy the Minor requirements.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	N/A
Staff:	N/A
GA/TAs:	N/A

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	

University of Windsor
Program Development Committee

5.4: **Bachelor of Information Technology (BIT) – Degree Completion Program (Form C1)**

Item for: **Approval**

MOTION: That the Bachelor of Information Technology (BIT) for Graduates from Chitkara University degree completion pathway be approved. ^

^Subject to approval of the expenditures required.

Rationale/Approvals:

- This program has been approved by the School of Computer Science and the Science Program Development Committee (SPDC) (as delegated by the Faculty of Science Coordinating Council).
- Students enrolled in the four-year Degree in Bachelor of Information Technology from Chitkara University with a cumulative average of 70% or better may receive the equivalent of twenty semesters course credits towards the Bachelor of Information Technology at the University of Windsor.
- *See attached.*

TITLE OF PROGRAM/CERTIFICATE:	**Bachelor of Information Technology**
DEPARTMENT(S)/SCHOOL(S):	**School of Computer Science**
FACULTY(IES):	**Faculty of Science**

Proposed articulation agreement or degree completion pathway effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall 2023

A. Program Details

The University of Windsor and Chitkara University (Chandigarh, India) seek to offer a transnational program ("Program") with students studying for two years at Chitkara University and four (4) semesters at UW. Upon completing their study at UW and achieving the required academic standards for graduation, students will receive the University of Windsor's Bachelor of Information Technology degree.

A.1 Admission Requirements (QAF section 2.1.2.5)

Describe admission requirements for the articulation agreement/degree completion pathway:

- *program-specific admission requirements,*
- *selection criteria,*
- *credit transfer,*
- *arrangements for exemptions or special entry, and*
- *alternative admission requirements, if any, for admission into the program, such as minimum average, additional language requirements or portfolios, recognition of prior work or learning experience (and how this will be assessed), etc.*

The Chitkara University and UW shall set a maximum limit on the number of students accepted under this agreement. For Students to be accepted into the 3rd year of the Program at UW, they must meet the following requirements:

1. Admissions Requirements

Initial Admissions (into Year 1 at Chitkara):

To be co-admitted by both Chitkara and UW into the Program, applicants must meet the following minimum requirements for admission to the Program:

(i) Successful completion of the curriculum associated with the Central Board of Secondary Education, Indian Certificate for Secondary Education, International Baccalaureate, or Indian State Boards, or equivalent with an overall average of 70%, including:

a. Math/Applied Math (Standard XII) or equivalent of Ontario Grade 12 Advanced Functions (MHF4U) with a minimum average of 70% or higher.

b. English (Standard XII) or equivalent of Ontario Grade 12 English (ENG4U) with a minimum average of 70% or higher.

c. The equivalent of Ontario Calculus and Vectors (MCV4U) is strongly recommended.

Continuing Admissions (into Year 3 at UW)

Students shall complete the required courses as specified in **Table 1**, earn the required credit at Chitkara, and study for at least two years at Chitkara University.

Students will be eligible only for admission to the program pathway at the University of Windsor if they have completed the required courses at Chitkara University, each with a cumulative average of minimum B (or equivalent). If not, students continue into the 3rd year of Chikara's Bachelor of Information Technology program.

2. Language Proficiency

Students must meet English language proficiency requirements for Undergraduate Students as outlined in the Policy on English Language Proficiency Requirement (Undergraduate and Graduate) before starting their academic studies at the University of Windsor, such as successful completion of the University of Windsor's English Language Improvement Program (Level III), obtainment of a minimum score of 6.5 on the International English Language Testing System (IELTS) with no band less than 6.0; or equivalent approved language test results.

3. Submission of Documents

Chitkara University is to share with UWindsor all the necessary documents to facilitate the student's initial letter of admission, including verified high school transcripts (Class XII) along with a Letter of Admission into Chitkara's Bachelor of Information Technology, thereby enabling UWindsor to issue a Conditional Letter of Admission into Year 3.

At the end of the 3rd semester at Chitkara University, Chitkara is to subsequently share all the necessary documents to facilitate the student's final transfer into UWindsor, including an official transcript from Chitkara University (of the first three semesters) and a recommendation letter that includes an attestation that the Chitkara University has reviewed the application package and that the materials are complete and accurate to the best of their information; thereby enabling UWIndsor to issue an associated Study Visa Letter to facilitate the student's Study Permit application.

At the end of the 4th semester at Chitkara University, Chitkara is to provide the official transcript of the student's last semester and IELTS score (or equivalent).

A.2 Articulation Agreement/Degree Completion Pathway (QAF sections 2.1.2.3 and 2.1.10

Sample wording for articulation agreement:

Diploma in Protection, Security and Investigation (formerly Law and Security) (Two Year Diploma): Graduates of the two-year Diploma in Protection, Security and Investigation program with a cumulative average grade of B or better **may** receive credit equivalent to five courses (15.00 credits) toward a B.A. or B.S.W. degree. Transfer credit is awarded for approved courses with a minimum grade of B- or better.

Medical Laboratory Science Program: Graduates of the three-year Diploma in Medical Laboratory Science with a 3.0 G.P.A. (75 percent or equivalent) may receive the equivalent of seventeen semester course credits towards the Bachelor of Science degree in Biological Sciences, Biochemistry, or General Science.

***Degree Completion Pathways specify** the remaining courses that need to be completed for the awarding of the degree program.*

Degree Completion – Course Requirements:

Bachelor of Information Technology (Four year degree): Students enrolled in the four-year Degree in Bachelor of Information Technology from Chitkara University with a cumulative average of 70% or better may receive the equivalent of twenty semesters course credits towards the Bachelor of Information Technology at the University of Windsor.

The 20 courses to be fulfilled at Chitkara are:

Table 1

#	Course Description	Chitkara Course #
1	COMP-1047. Computer Concepts for End-Users	UW Syllabi
2	COMP-2057. Introduction to the Internet	CS112 Advanced Web Technologies
3	COMP-2650. Computer Architecture I: Digital Design	UW Syllabi
4	MATH-1260. Vectors and Linear Algebra	Linear Algebra: 22AS004
5	ECON-1100. Introduction to Economics I	Economics I: CML4101W
6	MSCI-1000. Introduction to Business Data Analysis	Business Data Analysis Using Excel: BSL4270W
7	PSYC-2180. Everyday Conflicts and Their Resolution	Interpersonal Communication and Conflict Management: BPSY 212
8	SJST-1xxx. Social Justice in Action	The Explorer I - Social Engagement Project Focus: Self, Society & Social Impact
9	STEN-1000. Introduction to Business	Business Environment: BSL3247
10	MSCI-2020. Business Data Analysis	Business Statistics: AML4204W
11 12 13	**Three Courses** in Arts/Language and Social Science with **at least one** from Arts/Language and **one** from Social Science.	• Environmental Studies: ES101T • Logic & Reasoning: LAFPC103 • Creative Writing & Oral Communication: LAFPC102
	Four courses, **one** from each category:	
14	(i) Dynamics and Psychology: PSYC-1150	Introduction to Psychology as Behavioural Science: BPSY-101-1
15	(ii) Communication skills	Business Communication: CLW3115W
16	(iii) Professionalism: GART-2090	BPSY-612 Human Values and Professional Ethics
17	(iv) Business and Management	Essentials of Marketing: BSL3206W
18 19 20	**Three course** from **ANY** area of study	• Principles of Computer Networking: CST102 • Introduction to Linux: CS110 • Linux Programming: CST 111

Courses to be completed at the University of Windsor

Table 2

#	Course Description
Category A: Computer Science	
1	COMP-1000: Key Concepts in Computer Science
2	COMP-2067: Programming for Beginners
3	COMP-2087: Programming for Beginners II
4	COMP-2097: Social Media Marketing for End Users
5	COMP-2547: Applied Algorithms and Data Structures
6	COMP-2707: Advanced Web Design, Construction, and Deployment
7	COMP-3037: Information Security for IT

8	COMP-3057: Cyber-Ethics
9	COMP-3067: Applied Databases
10	COMP-3077: Web-Based Data Management
11	COMP-3250: Data Analytics I
12	COMP-4990 (A): Project Management: Techniques and Tools
13	COMP-4990 (B): Project Management: Techniques and Tools
14 - 15	Two Computer Science electives (COMP-2/3/4XXX)
Category B: Statistics	
16	STAT-2910: Statistics for the Sciences
Category C: Business	
17	MGMT-2400: Management and Organizational Life
Category D: Elective	
18-20	Three courses from any area of study

Courses used to calculate the major average are: Courses listed in Category A.

Provide requirements for the Co-op/Experiential Learning Component (if applicable): The co-op option is unavailable.

Is the completion of the experiential learning/co-op component a requirement of the program? No.

C.1.1 Admission Requirements and Attainment of Learning Outcomes (QAF section 2.1.2.5)

Demonstrate that admission requirements for the articulation agreement/degree completion pathway are sufficient to prepare students for successful attainment of the intended learning outcomes (degree level expectations) established for completion of the pathway. ***Include in appendices an assessment of course and program equivalencies demonstrating that the proposed advanced standing and credit transfer is appropriate and students who complete the program through the articulation agreement/degree completion pathway will be able to attain the intended learning outcomes.***

There are no changes proposed to the admissions requirements or degree learning outcomes.

B. RATIONALE

*Please provide a brief rationale for the proposed articulation agreement/degree completion pathway***.**

The proposed pathway provides a unique opportunity for students to start their educational journey at Chitkara University (India) before finishing their degree at the University of Windsor. Students earn 100% of their prior learning credits before transferring to the University of Windsor in Canada. As a part of the arrangement, students, while studying for the first two years of the program at Chitkara, pay an Indian domestic tuition fee. Transferring students would earn a University of Windsor's Bachelor of Information Technology degree at the end of their studies in Canada and retain eligibility under Canada's post-graduate work permit program.

Students will interact with the University of Windsor as part of our transnational academic partnership with Chitkara. This translates into better academic success for students with global careers and an education that saves them 70% of the costs while helping students from the region gain international exposure.

B.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25

35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this articulation agreement or degree completion pathway, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

1. **What process has your department/Faculty used to consider Indigenization?**
   The School works closely with the Faculty of Science, which is in the process of recruiting an expert in Indigenous-centred relationships who is a recognized Knowledge-Keeper in their community with the aim to build and develop new and innovative initiatives to further Indigenous-focused research co-production and lifelong learning. The Indigenous Knowledge Keeper will provide counsel to the Office of the Dean to create further space for Indigenous knowledge and partnerships in the Faculty of Science and across the University of Windsor. The Indigenous Knowledge Keeper will support the creation of an Indigenized space for Indigenous students, community members, and allies to engage, learn and create.

2. **How have you considered the importance or relevance to the course/program?**
   The School of Computer Science recognizes the importance of engaging and collaborating with the Indigenous community in developing and implementing a suitable curriculum. Indigenous community's knowledge, practices, and values can provide important insights into the design and use of information technology which can help ensure that the technology is culturally appropriate and aligned with the goals and values of the community. Consequently, incorporating Indigenous perspectives is important for promoting diversity, equity, and inclusion in technology development. This can lead to more effective and sustainable use of technology in addressing people's needs and challenges by making it more accessible and relevant to society.
   - The Acting Associate Dean, Arunita Jaekel has attended the in the 6-week course with the Centre for Teaching and Learning titled '*Pulling Together: A Guide for Curriculum Developers' taught by Jaimie Kechego* to increase understanding and gain some insight into how the curriculum can be updated.

3. **How has your department or faculty approached raising awareness for Indigenous knowledges in your area?**
   The School is looking to include some seminars on a topic related to Indigenous approaches/perspectives in its departmental colloquium series.
   - The School encourages instructors to include topics/discussions about Indigenous issues where applicable.

- The School is updating the contents of COMP-3057, the cyber ethics course, to include topics on Indigenous knowledge and data governance. This course is a required course for the BIT program, and there is a discussion to make this course a required course in all other UG programs offered by the School of Computer Science.
- Course projects related to IT/digitization relevant to local Indigenous cases brought out by the local community can be included in the capstone project (COMP-4990) and other upper-level courses.

4. **What do the TRC and University Principles documents suggest relevant to your course?**
   The school follows the Universities Canada principles, especially the following items, which are the most relevant to the BIT program.
   - Be student-centered: focus on the learners, learning outcomes and learning abilities, and create opportunities that promote student success.
   - Continue to develop resources, spaces, and approaches that promote dialogue between Indigenous and non-Indigenous students.
   - Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada.

5. **What have other similar courses/programs done that might be relevant to your course/program?**
   Some universities have provided a series of seminars about different aspects of Indigenous research ethics, information technology, and AI, such as sharing and protecting Indigenous knowledge in the digital world and its data governance and privacy, and designing ethical AI from an Indigenous perspective. Our School is also looking to include some seminars on topics related to Indigenous approaches/perspectives in its departmental colloquium series.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**
   Some of our IT courses which are required by the BIT program, have weekly discussion activities, which makes them flexible to include discussion topics on Indigenous knowledge. For those courses that have a class project, the project can be selected in a way that is related to IT/digitization relevant to local Indigenous cases brought out by the local community.

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**
   The School has plans to work with the Knowledge Keeper to help reach out to the local Indigenous community and their IT and digitization department in order to seek their input and engage them, e.g., through membership in advisory committees, collaboration on research and student projects which are relevant to this program.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**
   The School is looking forward to engaging with an expert in Indigenous-centred relationships within the Faculty of Science to develop relevant aspects of its curriculum further.

9. **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**
   Not beyond what is noted above.

10. **Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?** N/A

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example:

- *faculty resources (within and outside the unit),*
- *existing courses (within and outside the unit),*
- *equipment or facilities outside the proposer's control,*
- *external resources requiring maintenance or upgrading using external resources*
- *staff support,*
- *library,*
- *teaching and learning support,*
- *information technology support,*
- *laboratory access,*
- *student support services,*
- *space,*
- *equipment,*
- *facilities*
- *GA/TA*

The School of Computer Science faculty and staff are all committed to supporting the Program.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

All the required courses in the proposed pathway have been and will continue to be part of the regular course offerings of the School of Computer Science, Department of Mathematics and Statistic, Department of Economics, and Odette School of Business. The 5 new courses were approved as part of this degree program and are already in various phases of development.

Most Category A (Computer Science) courses are offered by tenured and tenure track professors. Exceptions occur at times in the multi-section year one courses with high enrolments and broad audiences. In some cases, qualified sessional instructors are engaged to deliver a course, if needed. The School of Computer Science regularly offers all such courses. The full-time faculty members can teach all the courses.

C.2 Graduate Faculty Qualifications & Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

Since all courses are currently offered, the available and currently committed resources do sustain the quality of scholarship produced by the undergraduate students. The current resources are adequate.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

The pathway relies on the existing resources.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	n/a
Staff:	n/a
GA/TAs:	n/a

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	n/a
Teaching and Learning Support:	n/a
Student Support Services:	n/a
Space and Facilities:	n/a
Equipment (and Maintenance):	n/a

University of Windsor
Program Development Committee

*5.5: **Engineering (Graduate) – Minor Program Changes (Form C)**

Item for: **Approval**

Forwarded by: **Faculty of Graduate Studies**

MOTION: That the degree requirements for Master of Engineering (MEng) and the Master of Engineering (Automotive) be changed in accordance with the program/course change forms.^

^Subject to approval of the expenditures required.

Rationale/Approvals:

- The changes have been approved by the Faculty of Engineering Coordinating Council and the Faculty of Graduate Studies Council.
- *See attached.*

TITLE OF PROGRAM(S)/CERTIFICATE(S):	**Master of Engineering and Master of Engineering (Automotive) (MEng and MEng (Auto) respectively)**
DEPARTMENT(S)/SCHOOL(S):	**Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical, Automotive and Materials Engineering**
FACULTY(IES):	**Faculty of Graduate Studies and Faculty of Engineering**

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall 2023

A.1 PROGRAM REQUIREMENT CHANGES

Please provide the current program requirements and the proposed new program requirements by cutting and pasting from the current undergraduate or graduate web calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining. Example: Degree requirements: WXYZ-1000, ~~WXYZ-1010~~, WXYZ-1100, WXYZ-2100, WXYZ-3100, WXYZ-4100, plus three additional courses at the **3000-level or** 4000-level.

Master of Engineering (MEng) – Degree Requirements

~~2.2 Students who obtain grades between 60% and 69% can retain a maximum of two courses with these grades if their overall average is above 70% in the semester in which they received these marks. If the overall average is below 70% in the semester in which they received these grades, the student may be required to repeat the course, take an equivalent course, or may be required to withdraw.~~

2.2 An MEng candidate must maintain a cumulative average of 70% or above to be in good standing and be eligible to graduate.

2.2.1 A grade of less than 60% in any course counts as a failure and that course must be repeated (if it is a required course) or in the case of an elective course, a replacement of equivalent weight must be taken and passed.

2.2.2 Candidates with a cumulative average of less than 70% will be placed on probation and are required to raise their cumulative average to 70% or above within one term.

2.2.3 MEng candidates who are on probation and who do not raise their cumulative average to 70% or above in the subsequent term may be required to withdraw (RTW).

2.2.4 MEng candidates may receive credit for a maximum of two courses with grades between 60% and 69% over their entire program. Candidates must repeat or replace (as detailed in 2.2.1 above) a third course in which they receive a grade below 70%

2.2.5 MEng candidates who receive more than three course grades below 70% in their program may be required to withdraw (RTW).

A.2 MINOR COURSE CHANGES REQUIRING ADDITIONAL RESOURCES OR AFFECTING DEGREE REQUIREMENTS

*If this is a minor course and calendar change (usually noted on a Form E) requiring additional resources or affecting degree requirements, please provide the current course information and the proposed new course information by cutting and pasting from the current undergraduate or graduate web calendar and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with **bolding** and underlining.*

Examples of minor course changes include: deleting courses, course description changes, pre/anti/co- requisite changes, contact hour/lab requirement changes, course title changes, renumbering courses, and/or cross-listing courses. Minor course calendar changes, which do not require additional resources or do not affect degree requirements, should be submitted on a ***Form E.***

N/A

B RATIONALE

Please provide a rationale for the proposed change(s).

The Master of Engineering and Master of Engineering (Automotive) are course-based graduate programs that largely serve candidates from outside of Canada. These individuals are often away from home for the first time and the adjustment required by their move to Canada to study a demanding program, often in a second language, occasionally results in unfavourable academic performance in their first term of study at the University of Windsor.

The proposed changes to the degree requirements in Sections 2.2, 2.2.1, 2.2.2 and 2.2.3 are intended to clarify the academic performance expectations of all candidates and the consequences of not achieving them.

The changes proposed in Section 2.2.2 are specifically intended to allow candidates (particularly new students in their first term of study at Windsor) one academic semester to make the necessary adjustments without undue financial or emotional hardship – while ensuring that they come into line with the standard of performance expected of graduate students in Canada within their first two semesters of study.

The final provisions (Sections 2.2.4 and 2.2.5) are intended to ensure that candidates continue to achieve at the required level throughout the remainder of their degree program at Windsor.

B.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

In revising this program, ***how*** *has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What* ***process*** *has your department/Faculty used to consider Indigenization?*
- ***How*** *have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form such as learning outcomes and/or in the syllabus where appropriate?*

FOREWORD

The present PDC form is associated with the Master of Engineering (MEng) programs, which serve a large (>2500) body of students who are mainly (i.e. more than 98%) newcomers to Canada, with limited knowledge of the history of their new home. To be specific, we have found that these students have little knowledge of the history of the injustices meted out to Indigenous peoples across Canada through the history of the country. The other aspect of the challenge of educating our MEng students on these topics is that the MEng programs require eight courses and are normally completed in four semesters (i.e., 16 months), so the students are on-campus for a relatively short time. Despite these challenges, we aspire to bring awareness of Indigenous issues to all our MEng students and are committed to incorporating engaging learnings and assessments to achieve this.

Responses to the Specific Questions in Section B.1

1. What process has your department/Faculty used to consider Indigenization?

Due to the brevity of the Master of Engineering program, the opportunity for the Faculty of Engineering to include Indigenous learning and knowledge content is more challenging than for our undergraduate programs. The module in the *GENG-8000 Engineering Technical Communications* course (which is taken by all MEng students in their first semester at UWindsor), described below, is our initial effort to bring these issues to our students. This module is an extension of the existing course module on Cultural Considerations, in which students are introduced to differences between high context and low context cultures and made aware of the importance of body language and gestures.

The Indigenous materials presented to GENG-8000 students have been reviewed and endorsed by Indigenous Learning Specialist Jaimie Kechego, of the Centre for Teaching and Learning (CTL) and include information on a number of Indigenous issues through the lens of a large engineering infrastructure project and its effects on a community. After reviewing the materials, students are assigned a discussion post writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. They are then required to review and comment upon the work of two of their classmates.

This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below, while reinforcing the importance of good communication skills and introducing the students to the vocabulary of Indigenous and social justice issues in Canada. The discussion post approach, in which students must reply to each other, is also an attempt to bring Indigenous pedagogical approaches, such as reflective and sharing techniques into the classroom.

This process has been undertaken by the GENG-8000 Course Coordinator (Dr. Lindsay Miller) and the Associate Dean, Professional Programs (Dr. Peter Frise), in communication with the Associate Dean, Academic (Dr. Afsaneh Edrisy) who has worked with Jaimie Kechego, the Indigenization Learning Specialist in the Centre for Teaching and Learning (CTL).

Consultations and further work on this initiative is planned to ensure continuous improvement and enhancements to the existing program as we gain experience with it.

2. How have you considered the importance or relevance to the course/program?

These materials are relevant to GENG8000 as this course in technical communication incorporates broad cultural considerations when writing and presenting to various audiences. The expansion to include specific Indigenous

considerations is relevant to the course and the program.

Licensing requirements in all Canadian provinces and territories require all professional engineering work to consider the societal and environmental impacts of building designs, infrastructure projects, machinery operation, consumer product manufacturing, energy generation and distribution systems, information technology, and other technical work. Issues such as climate change and global trade are discussed throughout the MEng program in applicable courses, and our inclusion of Indigenous ways of knowing in the GENG-8000 course is designed to bring our new MEng students, virtually all of whom are newcomers to Canada, into the circle of awareness of these topics which are of special note to all Canadians.

The most important requirement embodied in the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount." [1]. We are reinforcing to all our students that this duty implies respect for, and collaboration with, Indigenous communities when developing infrastructure and processes and we are endeavouring to bring this knowledge to our programs in as many ways as we can.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?
This area requires much more development in the Professional Programs portfolio of the Faculty of Engineering. The process described above was created by the Associate Dean, Academic and the GENG-8000 Course Coordinator in consultation with the Associate Dean, Professional Programs with some input from other faculty members. It is modelled on the work of the Associate Dean, Academic who has developed the program for UWindsor Engineering undergraduate programs.

Along with the new content in the *GENG-8000 Engineering Technical Communications* course (described above and detailed in *Section B2* below), the Faculty of Engineering Equity, Diversity and Inclusion Officer has also been working with groups of faculty members to make everyone aware of the issues of decolonization and the history of Indigenous people in Canada.

To provide a solid foundation of knowledge, the Associate Dean, Professional Programs is taking the short course *"Pulling Together: A Guide for Curriculum Developers."* which is being taught by Jaimie Kechego of the CTL on-campus. This is a six-week course which includes readings and video-based materials backed-up by self-reflections on interviews of Indigenous Elders and scholars from across Canada. The knowledge gained from this course, and elsewhere, will be communicated throughout the group of MEng program instructors to enhance the content of Indigeneity and Indigenous ways of knowing in as many components of the Professional Programs portfolio as possible.

Our goal is to create a community of allies within Engineering to foster a desire among our students to use their technical skills and talents over their careers to improve the lives of Indigenous peoples throughout Canada.

4. What do the <u>TRC</u> and <u>University Principles</u> documents suggest relevant to your course?
At the present time, the module within the GENG-8000 course described above is our initial effort to describe and affirm the spirit of the Truth and Reconciliation Commission (TRC) Call to Action item 62(i), to create "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada." [2].

Also, the University Principles document states that focus should be placed on learning outcomes. This is an activity on which the Faculty of Engineering has been working to implement for more than a decade. The Faculty's current process aligns with the principle "*Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada*" [3].

In addition, the GENG-8000 Course Coordinator has applied for two ELEVATE Scholarships which will provide funding and collaborative opportunities for Indigenous students in Engineering, to align with the commitment to "*develop*

opportunities for Indigenous students" [3].

5. What have other similar courses/programs done that might be relevant to your course/program?
The Professional Programs portfolio within the Faculty of Engineering has begun our journey by developing and implementing the materials within the GENG-8000 course which is taken by all MEng students - but this should be regarded as only a beginning.

Building on the grant received by Associate Dean, Academic Edrisy, and others, on February 7, 2023, to fund research into the current practices on Indigeneity within engineering programs across Canada, best practices at engineering schools across Canada will be examined over the coming year or two as part of the collective effort of UWindsor Engineering. This work will advise all programs within Engineering – including the Professional Programs portfolio.

Along with the research and program development efforts described above, the Associate Dean, Professional Programs, has contacted the CEO of one of Canada's top Indigenous-owned consulting engineering firms to seek advice on a new Master of Engineering program to address the engineering challenges of clean water, secure housing, and durable infrastructure in Indigenous and remote communities. This effort is at an early stage, but the initial discussions with the firm look promising.

6. In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?
The answers to questions 1 and 2 have identified specific area – the GENG-8000 course - of the MEng program that is most relevant to the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

The course coordinator, in consultation with Jaimie Kechego, is also considering ways to bring Indigenous pedagogical approaches to learning into a large classroom including non-verbal communication, visualized learning processes, hands-on, and reflective techniques.

7. What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?
Faculty members are developing their awareness in several ways: several people have taken Jaimie Kechego's "*Pulling Together*" course; the work of the recently awarded grant will help a lot, especially once the results are disseminated throughout the Faculty and others are using private research and reading to enhance their knowledge and engagements with these issues.

Overall, it must be admitted that the awareness of these issues within the Faculty of Engineering varies widely with some faculty members having limited knowledge and others being better informed. The Equity, Diversity and Inclusion Officer in Engineering, who was hired in 2022 in the midst of the pandemic, has been providing relevant resources and workshops to Faculty members and Indigenous issues are key components of these materials. For example, materials were provided to all instructors to include in our classes to make students aware of Orange Shirt Day, how it arose and why it is important, and to advertise key events that occurred on Orange Shirt Day across our region and the country.

8. Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)
Sources of information include the *"Pulling Together: A Guide for Curriculum Developers"* short course and discussions with instructor, Jaimie Kechego. She has reviewed our process and the GENG-8000 course presentations and materials that are provided to students. Other references consulted are listed below in the **References** section.

As noted earlier, this should be regarded as a beginning: we will be refining and enhancing our program instruction as we gain experience and new knowledge. Our discussions with the Indigenous-owned engineering firm will also be valuable as we focus on how engineers can do their part to redress the injustices of the past and present and provide solutions that are relevant and appropriate to serve the needs of Indigenous people across the country.

It might also be noted that PEO (the regulator of professional engineering in Ontario) has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

9. Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?

In terms of direct engagement on Indigenous issues, we are at the early stages of this analysis. This is particularly true of the MEng programs which serve an almost entirely international student body in relatively short (approx. 16 months) duration graduate work. Consequently, our work to date on Settler Colonialism and Decolonization is limited, but we will be expanding the content of the program to include issues such as those to the greatest extent possible.

10. Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?

Except for the previously described module on Indigenous issues that has been incorporated into the *GENG-8000 Engineering Technical Communications* course, the present PDC form deals largely with changes to degree admission requirements and program regulations, rather than curriculum adjustments.

It is clear to us that we need to do much more work within our Faculty and within the student body we serve – but the journey in Engineering has begun.

To meet the commitment to provide instruction related to Indigenous issues, we have designated the *GENG-8000 Engineering Technical Communications* course as the MEng program component for the inclusion of the module on Indigenous content and education. The learning outcome assessment associated with this teaching module is associated with Ethics and Equity. Specifically, the assessment considers the identification of equity issues within the engineering profession and Canadian society, with an emphasis on the role of Indigenous Peoples.

The specific assignment is called a Discussion Post and requires the students to read from a specified reference and write a reflective piece on that material and review the work of two of their peers in writing. The assignment which will convey this material and require the students to demonstrate knowledge of it, is reproduced below (*passage taken from the course material related to this assignment*):

GENG8000 – Engineering Technical Communications
Discussion Post #2 | Learning from the Land

This discussion post will extend from the Indigenous Knowledges module presented in class. For this reflection post, please refer to the following website: Learning from The Land - FNMIEAO for additional background information. Specifically, you will required to watch the video "*Impact of Technology on Wild Rice in the Lake of the Woods*" which can be found be clicking of this link: (189) Impacts of Technology on Wild Rice in Lake of the Woods - YouTube.

Once you have watched the video, you will write a short reflection that responds to the following questions:

The Anishinaabek have protected rights to carry out their traditional harvesting practices. How are the dams infringing on these rights?

What could be a possible resolution to meet the needs of everyone involved? What would you propose?

Your reflection should be at least 250 words and be grammatically correct.

Once you have posted *your* reflection, you are also required to write an engaging reply to two of your peers' reflections.

Reference:

Learning From the Land - FNMIEAO

NOTE: As this module is presently (W2023) in its first implementation, we do not yet have results but the reception by our students has been positive to date.

References

1. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
2. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf
3. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section. Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university. Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities., GA/TA

The proposed changes to degree requirements will have no resource implications.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

The proposed changes to degree requirements will have no implications on the reliance of adjunct, limited-term or sessional faculty.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

The proposed changes to degree requirements will have no implications on supervisor loads or on the qualifications or appointment status of faculty who provide instruction in the subject programs.

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

None

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

None

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

None

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	N/A
Staff:	N/A
GA/TAs:	N/A

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	N/A

D.1 Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

University of Windsor
Program Development Committee

*5.6: **Engineering – Minor Program Changes (Form C)**

Item for: **Approval**

Forwarded by: **Faculty of Engineering**

MOTION: That the degree requirements for Bachelor of Applied Science Engineering programs be changed in accordance with the program/course change forms.^

^Subject to approval of the expenditures required.

Rationale/Approvals:

- The changes have been approved by the Department of Mechanical, Automotive,and Materials Engineering Council and the Faculty of Engineering Coorindating Council.
- *See attached.*

TITLE OF PROGRAM(S)/CERTIFICATE(S):	**Bachelor of Applied Science - Mechanical Engineering** **Bachelor of Applied Science - Mechanical Engineering with Cooperative Education** **Bachelor of Applied Science - Mechanical Engineering with Aerospace Option** **Bachelor of Applied Science - Mechanical Engineering with Aerospace Option and Cooperative Education** **Bachelor of Applied Science - Mechanical Engineering with Automotive Option** **Bachelor of Applied Science - Mechanical Engineering with Automotive Option and Cooperative Education** **Bachelor of Applied Science - Mechanical Engineering with Environmental Option** **Bachelor of Applied Science - Mechanical Engineering with Environmental Option and Cooperative Education** **Bachelor of Applied Science - Mechanical Engineering with Materials Option** **Bachelor of Applied Science - Mechanical Engineering with Materials Option and Cooperative Education**
DEPARTMENT(S)/SCHOOL(S):	**Mechanical, Automotive,and Materials Engineering**
FACULTY(IES):	**Faculty of Engineering**

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	For the cohort beginning Fall 2023

A.1 PROGRAM REQUIREMENT CHANGES

Please provide the current program requirements and the proposed new program requirements by cutting and pasting from the current undergraduate or graduate web calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

Example:
Degree requirements: WXYZ-1000, ~~WXYZ-1010~~, WXYZ-1100, WXYZ-2100, WXYZ-3100, WXYZ-4100, plus three additional courses at the **3000-level or** 4000-level.

[The following changes to courses in Semesters 1 to 4 will be made in the calendar for all of the BASc programs in Mechanical Engineering.]

Year 1 - Fall (Semester 1)
GENG-1101. Engineering 1
GENG-1102. Engineering Graphics
~~GENG-1110. Engineering Mechanics I~~
MATH-1720. Differential Calculus
MATH-1270. Linear Algebra (Engineering)
PHYS-1400. Introductory Physics I

Year 1 - Winter (Semester 2)
GENG-1110. Engineering Mechanics I
GENG-1201. Cornerstone Design
~~GENG-1200. Engineering Thermofluids~~
GENG-1202. Introductory Electrical and Computer Engineering
MATH-1730. Integral Calculus
~~PHYS-1410. Introductory Physics II~~
CHEM-1103. Topics in General Chemistry

Year 2 - Fall (Semester 3)
GENG-2101. Engineering 2
MATH-2780. Vector Calculus
~~MATH-2790. Differential Equations~~
GENG-2102. Programming and Algorithms
~~GENG-2320. Engineering Software Fundamentals~~
~~GENG-2340. Electrical and Computing Fundamentals~~
PHYS-2100. Topics in Physics
~~MECH-2210. Dynamics~~
GENG-2180. Mechanics of Deformable Bodies
GENG-2190. Introduction to Engineering Materials
~~GENG-2500. Engineering and the Environment~~
~~INDE-2010. Engineering Management and Globalization~~

Year 2 - Winter (Semester 4)
GENG-2201. Engineering Design 2
~~MATH-2780. Vector Calculus~~
MATH-2790. Differential Equations
~~GENG-2190. Introduction Engineering Materials~~
GENG-2202. Probability & Statistics for Engineering
~~GENG-2220. Treatment of Experimental Data~~
~~GENG-2200. Numerical Analysis for Engineering~~
MECH-2210. Dynamics
MECH-2230. Advanced Engineering and Design
~~GENG-2180. Mechanics of Deformable Bodies~~
Complementary Studies course selected from the approved list

Year 2 - Summer Term- Co-op students only
GENG-2980. Work Term I

Year 3 - Fall (Semester 5)
GENG-3130. Engineering Economics
MECH-3212. Thermodynamics
MECH-3233. Fluid Mechanics I
MECH-3211. Stress Analysis
MECH-3223. Machine Dynamics
Complementary Studies course selected from the approved list

Year 3 - Winter Term - Co-op students only
GENG-3980. Work Term II

Year 3 - Summer (Semester 6)
GENG-3201 Engineering Design 3
MECH-3217. Applied Thermodynamics
MECH-3220. Fluid Mechanics II
MECH-3228. Heat Transfer
~~MECH-4221. Machine Design~~
MECH-4259. Computer Aided Engineering or MECH-4258 Computational Fluid Dynamics
One of the following courses based on the student's option:

General Mechanical Engineering (no-option cohort):
Spare
Automotive Option:
MECH-3430. Automotive Engineering Fundamentals
MECH-4463. Vehicle Dynamics
MECH-4467. Vehicle Thermal Management
Aerospace Option:
MECH-3670. Aerospace Engineering Fundamentals
MECH-4670. Aerospace Propulsion
MECH-4671. Aerodynamics and Performance
Materials Option:
MECH-3830. Materials and Their Properties
MECH-3671. Aerospace Materials and Manufacturing
MECH-4471. Auto Materials and Manufacturing Processes
Environmental Option:
MECH-4228. Sustainability in Engineering
MECH-4255. Environmental Effects and Control of Noise
ENVE 3640 Materials Recovery and Waste Mgmt

Year 4 - Fall Term - Co-op students only
GENG-4980. Work Term III

Year 4 - Winter (Semester 7)
~~MECH-4218. Thermofluid Systems Design~~
MECH-4200. Capstone Design A
~~MECH-4200. Capstone Design~~
MECH-3224. Engineering Measurements
~~MECH-4211. Design for Failure Prevention~~
MECH-4221. Machine Design
~~3 additional courses*~~
Plus the following courses based on the student's option:

General Mechanical Engineering (no-option cohort):
one course from
MECH-3215. Mechanical Vibrations
MECH-4253. Heating, Ventilation, and Air Conditioning
and **one** course from
Spare
MECH-4251. Turbomachines
MECH-4250. Gas Dynamics
MECH-4212. Mechatronics
MECH-4255. Environmental Effects and Control of Noise
MECH-4218. Thermofluid Systems Design
MECH-4228. Sustainability in Engineering

MECH-4259. Computer Aided Engineering or MECH-4258. Computational Fluid Dynamics
MECH-4240. Special Topics in Mechanical Engineering
MECH-4241. Directed Studies in Mechanical Engineering
INDE-4350. DOE Techniques for Manufacturing

Automotive Option: **two** courses from
MECH-3430. Automotive Engineering Fundamentals
MECH-4463. Vehicle Dynamics
MECH-4467. Vehicle Thermal Management

Aerospace Option: **two** courses from
MECH-3670. Aerospace Engineering Fundamentals
MECH-4670. Aerospace Propulsion
MECH-4671. Aerodynamics and Performance

Materials Option: **two** courses from
MECH-3830. Materials and Their Properties
MECH-3671. Aerospace Materials and Manufacturing
MECH-4471. Auto Materials and Manufacturing Processes

Environmental Option: **two** courses from
MECH-4228. Sustainability in Engineering
MECH-4255. Environmental Effects and Control of Noise
ENVE 3640 Materials Recovery and Waste Mgmt

Year 4 - Summer (Semester 8)
MECH-3221. Control Theory
~~MECH-3224. Engineering Measurements~~
MECH-4211. Deformation, Fracture and Failure Prevention
~~GENG-4210. Engineering and Society~~
MECH-4200. Capstone Design B
~~MECH-4200. Capstone Design~~
~~2 additional courses*~~
Plus the following courses based on the student's option:

General Mechanical Engineering (no-option cohort):
one course from
MECH-3215. Mechanical Vibrations
MECH-4253. Heating, Ventilation, and Air Conditioning
and **one** course from
Spare
MECH-4251. Turbomachines
MECH-4250. Gas Dynamics
MECH-4212. Mechatronics
MECH-4255. Environmental Effects and Control of Noise
MECH-4218. Thermofluid Systems Design
MECH-4228. Sustainability in Engineering
MECH-4259. Computer Aided Engineering or MECH-4258. Computational Fluid Dynamics
MECH-4240. Special Topics in Mechanical Engineering
MECH-4241. Directed Studies in Mechanical Engineering
INDE-4350. DOE Techniques for Manufacturing

Automotive Option: **two** courses from
MECH-4465. Internal Combustion Engines
MECH-4469. Sustainable Propulsion
MECH-4440-10. Special Topics: Electric Motors
MECH-4471. Auto Materials and Manufacturing Processes
MECH-4440. Special Topics in Automotive Engineering

MECH-4441. Directed Studies in Automotive Engineering

Aerospace Option: **two** courses from

MECH-3671. Aerospace Materials and Manufacturing
MECH-4673. Aerospace Structures
MECH-4672. Flight Dynamics and Control of Unmanned Aerial Vehicles
MECH-4640. Special Topics in Aerospace Engineering
MECH-4641. Directed Studies in Aerospace Engineering

Materials Option: **two** courses from

MECH-3831. Thermodynamics and Kinetics of Materials
MECH-4820. Ceramic Materials
MECH-4832. Modern Steels
MECH-4850. Welding Engineering
MECH-4840. Special Topics in Materials Engineering
MECH 4841 Directed Studies in Materials Engineering

Environmental Option: **two** courses from

ENVE-3620. Air Pollution Control
ENVE-3630. Waste Water Treatment
MECH 4242 Special Topics in Environmental Engineering
MECH 4243 Directed Studies in Environmental Engineering

~~*The six additional courses must comply with the following rules:~~

~~·A minimum of two must be numbered MECH-32XX, 42XX~~

~~·A maximum of two may be numbered MECH-34XX, MECH-44XX~~

~~·A maximum of two may be numbered MECH-36XX, MECH-46XX~~

~~·A maximum of two may be numbered MECH-38XX, MECH-48XX~~

~~·A maximum of two may be taken from any program or Faculty outside of MECH-XXXX~~

A.2 MINOR COURSE CHANGES REQUIRING ADDITIONAL RESOURCES OR AFFECTING DEGREE REQUIREMENTS

*If this is a minor course and calendar change (usually noted on a Form E) requiring additional resources or affecting degree requirements, please provide the current course information and the proposed new course information by cutting and pasting from the current undergraduate or graduate web calendar and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with **bolding** and underlining.*

*Examples of minor course changes include: deleting courses, course description changes, pre/anti/co- requisite changes, contact hour/lab requirement changes, course title changes, renumbering courses, and/or cross-listing courses. Minor course calendar changes, which do not require additional resources or do not affect degree requirements, should be submitted on a **Form E.***

The following program changes affect the degree requirements.

- Deletion of PHYS 1410 Introductory Physics II; Addition of PHYS-1400 Introductory Physics I. This change has been agreed upon with Physics as discussed in Section C.1.
- Deletion of GENG 1200 Engineering Thermofluids; Addition of PHYS-2100. Topics in Physics. This change has been agreed upon with Physics
- Deletion of GENG-2340. Electrical and Computing Fundamentals; Addition of GENG 1202 Introductory Electrical and Computer Engineering.

- Deletion of GENG-2500. Engineering and the Environment and INDE-2010. Engineering Management and Globalization; Addition of GENG-2101. Engineering 2
- Deletion of GENG-2320. Engineering Software Fundamentals and GENG-2200. Numerical Analysis for Engineering; Addition of GENG-2102. Programming and Algorithms
- Deletion of GENG-2220. Treatment of Experimental Data; Addition of GENG-222. Probability & Statistics for Engineering
- Addition of GENG-2201. Engineering Design 2
- Addition of GENG-3201. Engineering Design 3
- Deletion of GENG-4210. Engineering and Society
- Deletion of MECH-4211 Design for Failure Prevention and MECH-4821 Deformation and Fracture; Addition of MECH 4211 Deformation, Fracture, and Failure Prevention
- Addition of **Complementary Studies 1**(a course from outside Engineering selected from the approved list)

- The course deletions and additions are resource-neutral for all BASc Mechanical Engineering programs.

B. RATIONALE

Please provide a rationale for the proposed change(s).

The Engineering Common Core in the First and Second Years addresses improved pedagogy and the need for ever-increasing skills in computational/electrical applications in the coming decade. In terms of pedagogy, students will benefit from having Linear Algebra and Physics in semester 1 as prerequisites to Engineering Mechanics I in Semester 2. Skills development in the computing and electrical areas, which currently begins in year two, will now begin in the first year. In addition, the number of technical electives for all programs has been reduced by one course. The main reason is reducing the total course hours requirement of the Faculty of Engineering's external accrediting body, the Canadian Engineering Accreditation Board (CEAB), by 100 hours, from 1950 to 1850. The Mechanical Engineering program currently comfortably exceeds the minimum requirement, with approximately 2050 hours, and still comfortably meets the new hours' requirement and fulfills the CEAB graduate attributes with one fewer technical elective.

B.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In revising this program, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form such as learning outcomes and/or in the syllabus where appropriate?*

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The following information describes how the undergraduate mechanical engineering programs incorporate Indigenous content, perspectives, and material and what the Faculty of Engineering is doing to learn and grow in this area.

1. **What process has your department/Faculty used to consider Indigenization?**

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned a writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-1101 Engineering 1 is the first-year course that provides a presentation about residential schools, Truth and Reconciliation, and colonialism and assigns a reflection assignment for the first-year program, which is common to all engineering students. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. GENG-3130 Engineering Economics is the third-year course that provides a presentation about Indigenous issues and students complete an assignment. MECH-4200 Capstone Design is the fourth-year course that incorporates the Seventh Generation Principle into the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd and 3rd-year design courses GENG-2201 Engineering Design 2 and GENG-3201 Engineering Design 3, respectively.

2. **How have you considered the importance or relevance to the course/program?**

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.

As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

3. **How has your department or faculty approached raising awareness for Indigenous knowledges in your area?**

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic, without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant

presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." All the instructors in the Faculty were also encouraged to attend the workshops to raise awareness (an email was sent on Feb 10, 2023). As part of each program's continuous improvement process, an email was sent to instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

4. **What do the TRC and University Principles documents suggest relevant to your course?**

The process that the Faculty of Engineering is taking (described in answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create a "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

5. **What have other similar courses/programs done that might be relevant to your course/program?**

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers

Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

9. **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

10. **Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?**

Courses that assess these topics have associated learning outcomes in their PDC forms and their course syllabi.

References

1. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
2. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf
3. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example:

- *faculty resources (within and outside the unit),*
- *existing courses (within and outside the unit),*
- *equipment or facilities outside the proposer's control,*
- *external resources requiring maintenance or upgrading using external resources*
- *staff support,*
- *library,*
- *teaching and learning support,*
- *information technology support,*
- *laboratory access,*
- *student support services,*
- *space,*
- *equipment,*
- *facilities*
- *GA/TA*

The curriculum of all Mechanical Engineering Programs has been streamlined. The number of engineering courses added is the same as the number of deleted courses. There is no expected need for additional resources.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

The new Year-1 course GENG 1202 will be covered by existing faculty members in the Department of Electrical and Computing Engineering.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

Not applicable for this undergraduate program change

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

Not applicable for this undergraduate program change

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

No new resources are expected to originate from this program revision.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

The number of engineering courses added is the same as the number of deleted courses. There are no expected cost savings.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	N/A
Staff:	N/A
GA/TAs:	Department of Physics will reallocate the resources from PHYS 1410 to 1400

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	Additional sets of laboratory equipment

University of Windsor
Program Development Committee

*5.7: **Engineering – New Course Proposals (Form D)**

Item for: **Approval**

MOTION: That the following courses be approved:^

GENG-2101	**Engineering II**
GENG-2102	**Programming and Algorithms**
GENG-2201	**Engineering Design II**
GENG-3201	**Engineering Design 3**
MECH-4211	**Deformation, Fracture, and Failure Prevention**

^Subject to approval of the expenditures required.

Rationale/Approvals:

- This course has been approved by the Departments of Civil and Environmental Engineering, Electrical and Computing Engineering, Mechanical, Automotive, and Materials Engineering and the Faculty of Engineering Coordinating Council.
- *See attached.*

TITLE OF PROGRAM(S)/CERTIFICATE(S):	**Bachelor of Science BASc in Engineering Programs**
DEPARTMENT(S)/SCHOOL(S):	**Civil and Environmental Engineering** **Electrical and Computing Engineering** **Mechanical, Automotive, & Materials Engineering**
FACULTY(IES):	**Engineering**

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Fall 2024

A. NEW COURSE PROFILE

Course # and Title: GENG-2101 Engineering II

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

This course primarily covers topics in environmental engineering and engineering management, such as: (Introduction to) sustainability, dimensions of contamination, air quality, climate change, water quality, risk, mass balances, energy balances, life cycle assessment (environmental and non-environmental considerations), engineering project management, organizational structure & culture, leadership, management of employees of diverse backgrounds, (introduction to) global supply chain & supply chain management, new product development processes, sustainable development, environmentally conscious design & production, and material selection and process selection with environmental impact considerations. (Prerequisites: CHEM-1103 and GENG-1201.) (3 lecture, 2 laboratory or tutorial hours a week.)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Lecture	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3.0	60					3.0	2.0		

Pre-requisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*
CHEM-1103 and GENG-1201				Yes	GENG-2500 and INDE-2010

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course provides an overview of environmental engineering and engineering management, which are necessary for external accreditation requirements for all undergraduate engineering programs.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*

- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

1. What process has your department/Faculty used to consider Indigenization?

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned a writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. Throughout the curriculum, the Seventh Generation Principle is reflected upon during the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd, 3rd-year, and 4th-year design courses, GENG-2201 Engineering Design 2, GENG-3201 Engineering Design 3, and MECH-4200 Capstone Design, respectively.

GENG-2101 Engineering 2 is the second-year course that provides a research assignment that considers the impact of an engineering project on an Indigenous community.

2. How have you considered the importance or relevance to the course/program?

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.
As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." As part of each program's continuous improvement process, an email was sent instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

4. What do the TRC and University Principles documents suggest relevant to your course?

The process that the Faculty of Engineering is taking (described in the answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create "curriculum on residential schools, Treaties, and Aboriginal peoples' historical

and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

5. **What have other similar courses/programs done that might be relevant to your course/program?**

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

9. **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**

Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

References

1. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
2. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf
3. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows. Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.*** *Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.*

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Solve mass balances in open systems, closed systems, and systems with and without chemical change.	A. the acquisition, application and integration of knowledge
B. Explain the elements of the product development process and relationships among them Apply elements of the product development process to projects. Understand and identify customer needs and apply Value Proposition Canvas (VPC) to map them.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Analyze environmental problems and identify their root causes.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
Analyze occupational health and safety issues and assess control measures. Recognize the role of the engineer in OH&S in Ontario. Identify the environmental impacts of technologies throughout their lifecycles. Identify elements of pollution prevention methodology and waste management. Recognize the key global trends (e.g., Circular Economy and shift to services) and their potential impact on use of resources. Collaboratively resolve engineering focused situations that affect the community at large. Identify and apply rudimentary project management concepts and tools.	E. responsible behaviour to self, others and society

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
F.	F. interpersonal and communications skills
G. Define individual contributions to team efforts.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I. Independently summarize, analyze, synthesize, and evaluate information from a wide variety of sources, including library methods, relevant codes/standards/regulations, and digital methods. (also relevant to B)	I. the ability and desire for continuous learning

Course Learning Outcome **This is a sentence completion exercise.** **At the end of this course, the successful students will know and be able to:**	**CEAB Graduate Attribute**
Solve mass balances in open systems, closed systems, and systems with and without chemical change.	1. A Knowledge Base for Engineering
Analyze an environmental problem and identify its root causes.	2. Problem Analysis
Understand the elements of the product development process and relationships among them; apply them to the project. Understand and identify customer needs and apply Value Proposition Canvas (VPC) to map them.	4. Design
Define individual contributions to the team effort.	6. Teamwork
Analyze occupational health and safety issues and assess control measures.	8. Professionalism
Recognize the role of the engineer in OH&S in Ontario. Identify the environmental impacts of a technology throughout its lifecycle. Identify elements of pollution prevention methodology and waste management. Understand key global trends (e.g., Circular Economy and shift to services) and their potential impact on use of resources.	9. Impact of Engineering on Society and the Environment
Undertake a group activity to resolve an engineering focused situation that affects the community at large.	10. Ethics and Equity
Apply rudimentary project management concepts and tools.	11. Economics and Project Management
Independently summarize, analyze, synthesize, and evaluate information from a wide variety of sources, including library methods, relevant codes/standards/regulations, and digital methods.	12. Lifelong Learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	270	270	270	270	270

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

This course becomes part of the revised Engineering Common Core and is taken by all students.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section. Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university. Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA

This course will be taught as part of the regularly assigned teaching load in the Civil and Environmental Engineering Department for full-time faculty. There are no resource implications for other campus units or programs. The departmental resources (e.g., GAs, equipment, staff) are sufficient to support this course offering in all aspects.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

This course will be taught as part of the regularly assigned teaching load in Civil and Environmental Engineering for full-time faculty.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

Not applicable.

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

Not applicable.

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

No new resources are anticipated.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

There are no planned reallocation of resources and cost-savings.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	n/a
Staff:	n/a
GA/TAs:	n/a

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	n/a
Teaching and Learning Support:	n/a
Student Support Services:	n/a
Space and Facilities:	n/a
Equipment (and Maintenance):	n/a

A. NEW COURSE PROFILE

Course # and Title: GENG-2102 Programming and Algorithms

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

Introduction to programming languages and digital computing concepts with emphasis on analyzing fundamental engineering problems using MATLAB. (3 lecture, 2 laboratory or tutorial hours a week.)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Lecture	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3.0	60					3.0	2.0		

Pre-requisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*
Undergraduate students in engineering only				Yes	GENG-2200 and GENG-2320

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course introduces programming languages and digital computing concepts for Engineering students.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

10. What process has your department/Faculty used to consider Indigenization?

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned a writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. Throughout the curriculum, the Seventh Generation Principle is reflected upon during the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd, 3rd-year, and 4th-year design courses, GENG-2201 Engineering Design 2, GENG-3201 Engineering Design 3, and MECH-4200 Capstone Design, respectively.

GENG-2102 Programming and Algorithms does not include Indigenous content, perspectives, or material.

11. How have you considered the importance or relevance to the course/program?

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.

As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

12. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." As part of each program's continuous improvement process, an email was sent instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

13. What do the TRC and University Principles documents suggest relevant to your course?

The process that the Faculty of Engineering is taking (described in the answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

14. What have other similar courses/programs done that might be relevant to your course/program?

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

15. In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

16. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

17. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

18. **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

19. **Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?**

This course, GENG-2102 Programming and Algorithms does not include Indigenous content, perspectives, or material.

References

4. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
5. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf
6. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows. Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.*** *Information on*

learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Use MATLAB as a tool to model the underlying mathematical principles of engineering systems.	A. the acquisition, application and integration of knowledge
B. N/A	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Classify problems according to commonly used solution methods. Recognize given and missing information, assumptions, and information to be gathered for specific solution methods. Execute problem solutions and interpret the results.	C. critical thinking and problem-solving skills
D. Describe engineering systems as a collection of equations suitable for computational solution methods.	D. literacy and numeracy skills
E. N/A	E. responsible behaviour to self, others and society
F. N/A	F. interpersonal and communications skills
G. N/A	G. teamwork, and personal and group leadership skills
H. N/A	H. creativity and aesthetic appreciation
I. N/A	I. the ability and desire for continuous learning

Course Learning Outcome **This is a sentence completion exercise.** **At the end of this course, the successful students will know and be able to:**	**CEAB Graduate Attribute**
Demonstrate competence in mathematics and modeling.	1. A Knowledge Base for Engineering
Classify a given problem according to commonly used solution methods. Recognize given and missing information, assumptions, and information to be gathered for the solution method. Execute a problem solution and interpret the results.	2. Problem Analysis
Use MATLAB to model and analyze engineering systems.	5. Engineering Tools

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	210	210	210	210	210

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

This course becomes part of the revised Engineering Common Core. There is no negative impact on other courses.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA

This course will be taught as part of the regularly assigned teaching load in Engineering for full-time faculty. There are no resource implications for other campus units or programs. The departmental resources (e.g., GAs, equipment, staff) are sufficient to support this course offering in all aspects.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

This course will be taught as part of the regularly assigned teaching load in Engineering for full-time faculty.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

Not applicable.

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

Not applicable.

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

No new resources are anticipated.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

There are no planned reallocation of resources and cost-savings.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	n/a
Staff:	n/a
GA/TAs:	n/a

\C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	n/a
Teaching and Learning Support:	n/a
Student Support Services:	n/a
Space and Facilities:	n/a
Equipment (and Maintenance):	n/a

Proposed change(s) effective as of* [Fall, Winter, Spring]: **(subject to timely and clear submission)*	Winter 2025

A. NEW COURSE PROFILE

Course # and Title: GENG 2201 Engineering Design II

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

This course covers: problem formulation, functional requirements & constraints, competitive evaluation & areas of improvement, conceptual design through ideation sketches, selection of design, communication of the design solution, prototype construction, testing, iteration, reporting. Includes team work to develop personal, partnership, leadership, and task completion skills. (Prerequisite: GENG- 1201. Open only to Engineering students.) (6 hours weekly.)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	**Total contact hours**	**Delivery format**				**Breakdown of contact hours/week**			
		In-class	**e-learning**	**Distance**	**Other flexible learning delivery** *[please specify]*	**Integrated Lecture & design lab**	**Lab/ Tutorial**	**Online**	**Co-op/ practicum/ experiential learning**
3	72	6				6			

Pre-requisites	**Co-requisites**	**Anti-requisites**	**Cross-listed with:**	**Required course?**	**Replacing old course*** ** *[provide old course number]*
Engineering students only, GENG 1201					

Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course develops students' knowledge of the engineering design process and provides a hands-on team experience in engineering design. Creativity and task completion are emphasized. The design portfolio adds to the documentation initiated in a previous course(GENG 1201).

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

1. What process has your department/Faculty used to consider Indigenization?

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs, in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned an assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-1101 Engineering 1 is the first-year course that provides a presentation about residential schools, Truth and Reconciliation, and colonialism and assigns a reflection assignment for the first-year program, which is common to all engineering

students. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. GENG-3130 Engineering Economics is the third-year course that provides a presentation about Indigenous issues and students complete an assignment. MECH-4200 Capstone Design is the fourth-year course that incorporates the Seventh Generation Principle into the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd and 3rd-year design courses GENG-2201 Engineering Design 2 and GENG-3201 Engineering Design 3, respectively.

This course, GENG-2201 Engineering Design II, is a second-year design course that requires design teams to consider the environmental and social impacts of their designs. In this way, the Seventh Generation Principle (considered in the first-year design course GENG-1201 Cornerstone Design) will be reinforced.

2. How have you considered the importance or relevance to the course/program?

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.
As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." As part of each program's continuous improvement process, an email was sent instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

4. What do the TRC and University Principles documents suggest relevant to your course?

The process that the Faculty of Engineering is taking (described in the answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

5. **What have other similar courses/programs done that might be relevant to your course/program?**

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

~~9.~~ **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**

Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

References

10. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
11. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf

12. Universities Canada. “Universities Canada principles on Indigenous education.” June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in “To Greater Heights” by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A.	C. the acquisition, application and integration of knowledge
B.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Generate problem statements and their design objectives Apply formal multi-criteria decision-making tools to select candidate engineering design solutions for further development. Identify constraints/stakeholders when selecting final designs from diverse sets of candidate solutions. Refine and advance designs to their final end-state.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E.	E. responsible behaviour to self, others and society
Prepare, integrate, and interpret graphical communications used in written and visual formats. Demonstrate professional behaviour in their individual interactions with others.	F. interpersonal and communications skills
Identify their individual role in and contribution to team efforts. Employ interpersonal skills to promote team dynamics. Integrate individual contributions into coherent team reports and presentations.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

Course Learning Outcome *This is a sentence completion exercise.* At the end of this course, the successful students will know and be able to:	**CEAB Graduate Attribute**
N/A	1. Knowledge Base for Engineering
N/A	2. Problem Analysis
N/A	3. Investigation
• Generate a problem statement and its design objectives. • Apply formal multi-criteria decision-making tools to select candidate engineering design solutions for further development • Identify constraints/stakeholders when selecting a final design from a diverse set of candidate solutions. • Refine and advance a design to its final end-state.	4. Design
	5. Engineering Tools
• Identify their individual role in and contribution to the team effort. • Employ interpersonal skills to promote team dynamics. • Integrate individual contributions into a coherent team report and presentation.	6. Teamwork
• Prepare, integrate, and interpret graphical communications used in written and visual formats	7. Communication
• Demonstrate professional behaviour in their individual interactions with others.	8. Professionalism
N/A	9. Impact of Engineering on Society and the Environment
N/A	10. Ethics and Equity
N/A	11. Economics and Project Management
N/A	12. Lifelong Learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	200	200	200	200	200

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

This is a new course that builds upon the students' knowledge of engineering design introduced in GENG 1201 Cornerstone Design, and it is a stepping block for the higher-level engineering design course GENG 3201 Engineering Design III. It is one of two new engineering design courses that complement current offerings. The content of this course has been designed as part of the Faculty of Engineering's continuous improvement process.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA

External accreditation requires a minimum of 225 hours of engineering design to be taught by registered Professional Engineers (PEng), which comprise nearly all of the current MAME faculty members.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

The course will be staffed by full-time faculty and AAS members. No adjunct, limited-term, or sessional faculty will be required.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

No new resources are anticipated for its delivery.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

There is no anticipated reallocation of resources or cost savings.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	One additional teaching load as described below
Staff:	N/A
GA/TAs:	6 Graduate/Teaching Assistants

This additional teaching load will be covered by a recent AAS hire in Mechanical Engineering, who is a Registered Professional Engineer. No additional resources are requested from the University.

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	N/A

A. NEW COURSE PROFILE

Course # and Title: GENG 3201 Engineering Design 3

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

A project-based learning experience where students are exposed to a series of open-ended design projects that will develop both technical and professional skills. The emphasis will be on the engineering design process, which consists of: problem formulation, functional requirements and constraints, conceptual design through CAD, selection of design, communication of the design solution, prototype construction, testing, iteration, and reporting. Includes group work to develop personal, teamwork, leadership, and task completion skills as part of the design process. (Prerequisite: Engineering students only, GENG 2201) (6 hours weekly)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Integrated Lecture & design lab	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3	72	6				6			

Prerequisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*
Engineering students only, GENG 2201					

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No.

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

This course develops students' knowledge of the engineering design process and provides a hands-on team experience in engineering design. Creativity and task completion are emphasized. The design portfolio adds to the documentation initiated in a previous course GENG 2201 Engineering Design II.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

GENG 3201 Engineering Design 3 incorporates the Seventh Generation Principle into the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. In addition, the following information describes how the undergraduate engineering programs to which it belongs incorporate Indigenous content, perspectives, and material and what the Faculty of Engineering is doing to learn and grow in this area.

1. **What process has your department/Faculty used to consider Indigenization?**

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned a writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-1101 Engineering 1 is the

first-year course that provides a presentation about residential schools, Truth and Reconciliation, and colonialism and assigns a reflection assignment for the first-year program, which is common to all engineering students. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. GENG-3130 Engineering Economics is the third-year course that provides a presentation about Indigenous issues, and students complete an assignment. MECH-4200 Capstone Design is the fourth-year course that incorporates the Seventh Generation Principle into the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd and 3rd-year design courses GENG-2201 Engineering Design 2 and GENG-3201 Engineering Design 3, respectively.

2. How have you considered the importance or relevance to the course/program?

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.

As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic, without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." All the instructors in the Faculty were also encouraged to attend the workshops to raise awareness (an email was sent on Feb 10, 2023). As part of each program's continuous improvement process, an email was sent to instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

4. What do the TRC and University Principles documents suggest relevant to your course?

The process that the Faculty of Engineering is taking (described in answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create a "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

5. What have other similar courses/programs done that might be relevant to your course/program?

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

~~9.~~ **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization? Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?**

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

References

10. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
11. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf
12. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

B.3 LEARNING OUTCOMES (QAF section 2)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows. Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.*** *Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.*

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A.	D. the acquisition, application and integration of knowledge
B.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Generate problem statements and their design objectives Apply formal multi-criteria decision-making tools to select candidate engineering design solutions for further development. Identify constraints/stakeholders when selecting final designs from diverse sets of candidate solutions. Refine and advance designs to their final end-state.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
	E. responsible behaviour to self, others and society
F. Prepare, integrate, and interpret graphical communications used in written and visual formats; Demonstrate professional behaviour in their individual interactions with others.	F. interpersonal and communications skills
G. Identify their individual role in and contribution to team efforts. Employ interpersonal skills to promote team dynamics. Integrate individual contributions into coherent team reports and presentations.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

Course Learning Outcome *This is a sentence completion exercise.* At the end of this course, the successful students will know and be able to:	**CEAB Graduate Attribute**
N/A	1. Knowledge Base for Engineering
N/A	2. Problem Analysis
N/A	3. Investigation
• Generate a problem statement and its design objectives. • Apply formal multi-criteria decision-making tools to select candidate engineering design solutions for further development • Identify constraints/stakeholders when selecting a final design from a diverse set of candidate solutions. • Refine and advance a design to its final end-state.	4. Design
	5. Engineering Tools
• Identify their individual role in and contribution to the team effort. • Employ interpersonal skills to promote team dynamics. • Integrate individual contributions into a coherent team report and presentation.	6. Teamwork
• Prepare, integrate, and interpret graphical communications used in written and visual formats	7. Communication
• Demonstrate professional behaviour in their individual interactions with others.	8. Professionalism
N/A	9. Impact of Engineering on Society and the Environment
N/A	10. Ethics and Equity
N/A	11. Economics and Project Management
N/A	12. Lifelong Learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	150	150	150	150	150

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

This new course builds upon the students' knowledge of engineering design introduced/developed in GENG 1201 Cornerstone, and GENG 2201 Engineering Design Projects B and is a stepping block for the highest-level engineering design course MECH 4200 Capstone. It is one of two new engineering design courses that complement current offerings. The content of this course has been designed as part of the Faculty of Engineering's continuous improvement process.

C. RESOURCES

C.1 Resources In Support of the Revised Program and Resource Implications for Other Campus Units or Programs (QAF section 2.1.2.6)

Describe, in general terms, all faculty and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the revised program. Please do not name specific individuals in this section.

Describe the impact of the planned utilization of existing human, physical and financial resources (within and outside the unit) on other existing programs in the department or at the university.

Provide an assessment of the reliance of the revised program on existing resources from other campus units and include evidence that there are adequate resources available and committed to the revised program to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities. Consider, for example: faculty resources (within and outside the unit), existing courses (within and outside the unit), equipment or facilities outside the proposer's control, external resources requiring maintenance or upgrading using external resources, staff support, library, teaching and learning support, information technology support, laboratory access, student support services, space, equipment, facilities, GA/TA

External accreditation requires a minimum of 225 hours of engineering design to be taught by registered Professional Engineers (PEng), which comprise nearly all of the current MAME faculty members.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program (QAF section 2.1.2.6)

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional faculty in delivering the revised program and the associate plans to ensure the sustainability of the revised program and quality of the student experience.

The course will be staffed by full-time faculty and AAS members. No adjunct, limited-term, or sessional faculty will be required.

C.2 Graduate Faculty Qualifications and Supervisory Loads (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Explain how supervisory loads will be distributed, and describe the qualifications and appointment status of faculty who will provide instruction and supervision in the revised program.

N/A

C.3 Financial Assistance for Graduate Students (where appropriate) (FOR GRADUATE PROGRAMS ONLY) (QAF section 2.1.2.7)

Where appropriate to the revised program, provide evidence that financial assistance for graduate students will be sufficient to ensure adequate quality and numbers of students.

N/A

C.4 Anticipated New Resources (QAF sections 2.1.2.6)

*List all **anticipated new resources** originating from within the area, department or faculty (external grants, donations, government grants, etc.) and committed to supporting the revised program.*

No new resources are anticipated for its delivery.

C.5 Planned Reallocation of Resources and Cost-Savings

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the revised program. (e.g., streamlining existing programs and courses, deleting courses, etc.)

There is no anticipated reallocation of resources or cost savings.

C.6 Additional Resources Required – Resources Requested (QAF section 2.1.2.6f)

*Describe all **additional faculty, staff and GA/TA resources** (in all affected areas and departments) required to run the revised program. If not applicable, write n/a.*

Faculty:	One additional teaching load as described below
Staff:	N/A
GA/TAs:	4 Graduate/Teaching Assistants

This additional teaching load will be covered by a recent AAS hire in Mechanical Engineering, who is a Registered Professional Engineer. No additional resources are requested from the University.

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments (QAF section 2.1.2.6f)

*Describe all **additional institutional resources and services** required by all affected areas or departments to run the revised program, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance. If not applicable, write n/a.*

Library Resources and Services:	N/A
Teaching and Learning Support:	N/A
Student Support Services:	N/A
Space and Facilities:	N/A
Equipment (and Maintenance):	N/A

A. NEW COURSE PROFILE

Course # and Title: MECH 4211 Deformation, Fracture, and Failure Prevention

A.1 Calendar Description

Calendar descriptions should be written in the third person and should provide a general outline of the course material. Where appropriate, examples of topics or themes, which might be covered in the course, should also be provided.

Mechanics of deformation, fracture, and failure in engineering materials, structures, and components. Principles of stress and strain analysis, including stress concentrations and strain energy. Mechanisms of material failure, including brittle and ductile fracture, fatigue, and creep. Practical aspects of failure prevention, including design principles, failure analysis, and material characterization and selection. (Prerequisites: MECH-3211, MECH-3223, and Semester 7 or higher standing) (3 lecture hours, 1.5 tutorial hours, 1.5 laboratory hours weekly)

A.2 Experiential Learning Categories

Does the course include experiential learning? Check all that apply.
For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

- ☐ applied research
- ☐ capstone
- ☐ clinic
- ☐ co-op
- ☐ community service learning
- ☐ creative performance or exhibit (*for visual and performing arts*)
- ☐ entrepreneurship
- ☐ field experience or site visit
- ☒ labs
- ☐ No experiential learning in this course
- ☐ field work
- ☐ industry/community consulting project
- ☐ interactive simulations
- ☐ internship – full-time
- ☐ internship – part-time
- ☐ professional practicum
- ☐ research project
- ☐ study abroad

A.3 Other Course Information

Please complete the following tables.

Credit weight	Total contact hours	Delivery format				Breakdown of contact hours/week			
		In-class	e-learning	Distance	Other flexible learning delivery *[please specify]*	Integrated Lecture & design lab	Lab/ Tutorial	Online	Co-op/ practicum/ experiential learning
3	72	6				3	3		

Prerequisites	Co-requisites	Anti-requisites	Cross-listed with:	Required course?	Replacing old course*** *[provide old course number]*
MECH-3211, MECH-3223, and Semester 7 or higher standing				yes	MECH 4211 and MECH-4821

******Replacing Old Course: this does not mean that the former course will be deleted from the calendar. If it is to be deleted, a Form E must be completed.***

Will students be able to obtain credit for the new course and the course(s) that it is replacing?	No

B. RATIONALE

B.1 Course Goal(s)

Please provide a statement about the purpose of the course within the program of study or as an option.

Upon completing the course, students will have a strong understanding of the mechanics of deformation, fracture, and failure in engineering materials and structures and the tools and techniques for preventing failure in real-world applications. Students will also have gained experience with design principles, material selection, and failure analysis methodologies.

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In developing this new course, **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or Faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

MECH-4211 Deformation, Fracture, and Failure Prevention does not contain Indigenous content, perspectives, or material; however, the following information describes how the undergraduate engineering programs to which it belongs incorporate Indigenous content, perspectives, and material and what the Faculty of Engineering is doing to learn and grow in this area.

1. **What process has your department/Faculty used to consider Indigenization?**

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned a writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach

has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-1101 Engineering 1 is the first-year course that provides a presentation about residential schools, Truth and Reconciliation, and colonialism and assigns a reflection assignment for the first-year program, which is common to all engineering students. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. GENG-3130 Engineering Economics is the third-year course that provides a presentation about Indigenous issues, and students complete an assignment. MECH-4200 Capstone Design is the fourth-year course that incorporates the Seventh Generation Principle into the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd and 3rd-year design courses GENG-2201 Engineering Design 2 and GENG-3201 Engineering Design 3, respectively.

2. How have you considered the importance or relevance to the course/program?

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.

As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic, without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." All the instructors in the Faculty were also encouraged to attend the workshops to raise awareness (an email was sent on Feb 10, 2023). As part of each program's continuous improvement process, an email was sent to instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

4. What do the TRC and University Principles documents suggest relevant to your course?

The process that the Faculty of Engineering is taking (described in answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create a "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

5. What have other similar courses/programs done that might be relevant to your course/program?

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

9. **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

10. **Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?**

MECH-4211 Deformation, Fracture, and Failure Prevention does not contain Indigenous content, perspectives, or material, so there are no associated learning outcomes for this course.

References

11. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941
12. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf

13. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/
14.

B.3 LEARNING OUTCOMES (QAF section 2.1.1, 2.1.3, and 2.1.6)

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Information on learning outcomes is appended to this form (Appendix A). Proposers are also strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Course Learning Outcomes *This is a sentence completion exercise.* At the end of this course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Explain the mechanisms of material failure and the factors that influence fracture and fatigue behavior.	E. the acquisition, application and integration of knowledge
B. Evaluate material properties and select materials for specific applications. Analyze stress and strain in simple and complex engineering systems	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Use advanced analysis techniques to investigate failures in real-world applications	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E. Demonstrate professional behaviour in their individual interactions with others.	E. responsible behaviour to self, others and society
F.	F. interpersonal and communications skills
G.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

Course Learning Outcome *This is a sentence completion exercise.* At the end of this course, the successful students will know and be able to:	**CEAB Graduate Attribute**
• Explain the mechanisms of material failure and the factors that influence fracture and fatigue behavior	1. Knowledge Base for Engineering

• Analyze stress and strain in simple and complex engineering systems	2. Problem Analysis
• Evaluate material properties and select materials for specific applications	3. Investigation
• Apply design principles and methodologies to prevent failure in engineering structures and components.	4. Design
• Use advanced analysis techniques to investigate failures in real-world applications	5. Engineering Tools
N/A	6. Teamwork
N/A	7. Communication
• Demonstrate professional behaviour in their individual interactions with others.	8. Professionalism
N/A	9. Impact of Engineering on Society and the Environment
N/A	10. Ethics and Equity
N/A	11. Economics and Project Management
N/A	12. Lifelong Learning

B.4 Demand for Course

Please provide as much information on projected enrolment as possible.

Projected enrolment levels for the first 5 years of the new course.	Year 1	Year 2	Year 3	Year 4	Year 5
	120	120	120	120	120

B.4.1 Impact of New Course on Enrolment in Existing Courses

What will be the impact of offering the new course on enrolments in existing courses in the program or Department?

This course replaces two current courses, MECH-4211. Design for Failure Prevention and MECH-4821. Deformation and Fracture. It is one of a number of new courses which replace current courses. The content of the current courses has been reorganized and upgraded as part of the Faculty of Engineering's continuous improvement process.

C. RESOURCES

C.1 Available Faculty Expertise and Staff Resources (QAF sections 2.1.7, 2.1.8, 2.1.9 and 2.1.10)

Describe all faculty expertise and staff resources (e.g., administrative, teaching, supervision) from all affected areas/departments currently available and actively committed to support the new course. Please do not name specific individuals.

External accreditation requires a minimum of 225 hours of engineering design to be taught by registered Professional Engineers (PEng), which comprise nearly all of the current engineering faculty members. The MAME department will provide a PEng instructor for this course to provide the necessary design experience.

C.1.1 Extent of Reliance on Adjunct, Limited-term, and Sessional Faculty in Delivering the Revised Program

Describe the area's expected reliance on, and the role of adjunct, limited-term, and sessional Faculty in delivering the new course.

The course will be staffed by full-time Faculty and AAS members. No adjunct, limited-term, or sessional Faculty will be required.

C.2 Resource Implications for Other Campus Units (Ministry sections 3 and 4)

Describe the reliance of the proposed new course on existing resources from other campus units, including for example:

- *faculty teaching,*
- *equipment or facilities outside the proposer's control,*
- *external resources requiring maintenance or upgrading using external resources*

Provide relevant details.

The staff and resources for this course are contained entirely in the MAME department.

C.3 Anticipated New Resources (QAF sections 2.1.7, 2.1.8 and 2.1.9; Ministry section 4)

*List all **anticipated new resources** originating from within the area, department or Faculty (external grants, donations, government grants, etc.) and committed to supporting the new course.*

Because this course is a reorganization of content from existing courses, no new resources are anticipated for its delivery.

C.4 Planned Reallocation of Resources and Cost-Savings (QAF section 2.1.7 and 2.1.9; Ministry section 4)

Describe all opportunities for internal reallocation of resources and cost savings identified and pursued by the area/department in support of the new course. (e.g., streamlining existing programs and courses, deleting courses, etc.).

Because this course is a reorganization of content from existing courses, there is no anticipated reallocation of resources or cost savings.

C.5 Additional Resources Required – Resources Requested (QAF section 2.1.7 and 2.1.9)

*Describe all **additional Faculty, staff and GA/TA resources** (in all affected areas and departments) required to offer the new course. If not applicable, write n/a.*

Faculty:	One additional teaching load as described below
Staff:	n/a
GA/TAs:	n/a

This additional teaching load will be covered by a recent AAS hire in Mechanical Engineering, who is a Registered Professional Engineer. No additional resources are requested from the University.

C.6.1 Additional Institutional Resources and Services Required by all Affected Areas or Departments

*Describe all **additional institutional resources and services** required by all affected areas or departments to offer the new course, including library, teaching and learning support services, student support services, space and facilities, and equipment and its maintenance.*

If not applicable, write n/a.

Library Resources and Services:	n/a
Teaching and Learning Support:	n/a
Student Support Services:	n/a
Space and Facilities:	n/a
Equipment (and Maintenance):	n/a

University of Windsor
Program Development Committee

*5.8: **Forensic Science – Summary of Minor Course and Calendar Changes (Form E)**

Item for: **Information**

Forwarded by: **Faculty of Science**

Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

INSTRUCTIONS ARE PROVIDED IN SHADED AREAS. DO NOT WRITE IN SHADED AREAS.

ALL SECTIONS OF THIS FORM ***MUST*** BE COMPLETED. **LEARNING OUTCOMES MUST BE PROVIDED FOR LISTED COURSES WHERE**:

I. THERE ARE **NO OFFICIAL LEARNING OUTCOMES FOR THE COURSE** IN THE PDC/SENATE RECORD (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)

OR

II. THERE ARE **CHANGES TO THE COURSE LEARNING OUTCOMES**

OR

III. IT HAS **BEEN 5 YEARS SINCE LEARNING OUTCOMES FOR THE COURSE WERE LAST** SUBMITTED TO PDC/SENATE (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)

Confirmation of Consultation with AAUs That Will Be Affected, in Major Ways, by the Changes

AAU Consulted	AAU Head/Directors	Date Consulted	Supportive	
			Yes	No

Please specify to which calendar *[Undergraduate or Graduate]* **the changes will be made. Include the effective date*** *[Fall, Winter, Spring, 20XX]***.** **(subject to timely and clear submission)* **These changes require no new resources.**	Fall 2023

A. Proposed Course Calendar Revisions

Please provide the current and the proposed new course information by cutting and pasting from the current undergraduate or graduate online calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

For contact hour/laboratory requirement changes which do not always appear in the calendar, please type in the current information and clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

Example: **CHEM-1001. University Senates ~~– Role and Power~~** This course explores the history, role, and power of Senates in Canadian universities. ~~(Also offered as BIOC-1001.)~~ (Prerequisite: CHEM-1000.) ~~2 lecture hours and 1 tutorial hour per week~~ **3 lecture hours/week**

FRSC-2007. ~~Introduction to~~ **Overview of** Forensic Science.
~~This course will survey the many specialties of Forensic Science, including forensic pathology, entomology, anthropology, biology, botany, geology, etc. Special guest lectures by practicing forensic scientists will give students direct contact with the role they play in the extraction and meaning of evidence.~~ **This course will introduce students to the various specializations of forensic science including forensic pathology; entomology; anthropology; toxicology; digital forensics; as well as DNA, blood stain and fingerprint analysis. The students will learn the theory and practices of forensic evidence identification and analysis. The course may not be used to fulfill the major requirements of any major or concentration in a forensic program.**

~~FRSC-2100. Crime Scene Evidence Analysis~~
~~This course builds upon the protocols developed in the Introductory Crime Scene Investigation (FRSC1107) and it is designed to familiarize students with the diverse scientific techniques utilized by Forensic professionals. The techniques for analyses of forensic evidence span natural sciences, social sciences and computer sciences. Pre-requisite: (FRSC-1107 or FRSC-2007 or permission by course instructor).~~

A.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In In revising this/these course(s), **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

- *What **process** has your department/Faculty used to consider Indigenization?*

The Faculty of Science, in which the forensic science programs are based, plans to welcome a recognized Knowledge Keeper as an expert in Indigenous-centered relationships to develop community-based initiatives in research, teaching and capacity development. The Department of Integrative Biology, which is the home AAU of two core forensic faculty (Albanese and VanLaerhoven) advertised, interviewed and is currently in negotiations with the preferred candidate for the position of Knowledge Keeper. With the support of this individual, the forensic faculty hope to develop new pedagogical initiatives to create Indigenous-focused, learning strategies and outcomes for students within the Faculty of Science.

- ***How*** *have you considered the importance or relevance to the course/program?*

The Forensic Science programs and its faculty members are committed to introducing meaningful Indigenous content, perspectives and material into all aspects of the programs, in both current and future curriculum development. The following provide examples of initiatives taken by forensic faculty members to understand and consider the importance of incorporating Indigenous knowledge into their courses:

- Dr Shari Forbes (Chemistry and Biochemistry) commenced as a new professor in the program on January 1st, 2023 and will take over the administration of the programs in the coming months. She is participating in the 6-week course with the Centre for Teaching and Learning titled 'Pulling Together: A Guide for Curriculum Developers' taught by Jaimie Kechego, a teaching and learning specialist in the field of Indigenization. This course is assisting her to identify biases and gaps in her own knowledge, to gain ideas for building relationships with Indigenous people in the surrounding communities, and to actively revise the curriculum with a new lens to identify ways to include Indigenous knowledge that will benefit all learners within the forensic science programs.
- While Dr Maria Cioppa (School of Environment) is stepping down as programs administrator, she plans to continue to supervise forensic research and thesis practicum students in geophysical research. Due to the subject matter relevance (the use of ground penetrating radar in cemeteries), she is also taking the CTL course to better incorporate Indigenous knowledges in her teaching and research.
- Professor John Albanese (forensic science faculty member) has incorporated Indigenous themes and concepts into the *BIOL-2063. Principles of Biological Anthropology* course taught to all forensic program majors. Topics include (as quoted by Dr. Albanese): "decolonization of knowledge creation, critiquing the racialization of human variation, and critiquing pseudo-scientific constructions of human differences that have been used to marginalize and exploit individuals and groups including Indigenous Peoples. A multidisciplinary, inclusive, and humanizing approach to understanding human evolution and modern human variation is presented in the course." Similar concepts and topics can be further incorporated into other courses within the forensic science program where human evolution and human variation is presented. Examples of relevant courses which have the flexibility to incorporate these topics include: FRSC-1000 Introduction to Forensic Science (the course for which this document applies), FRSC-3217 Forensic Serology and DNA Applications, FRSC-3231 Forensic Anthropology, FRSC-4120 Human Skeletal Variation, FRSC 4002 Practicum (placement-dependent) and FRSC 4900 Research Thesis (topic matter dependent).

- *What do the TRC and University Principles documents suggest relevant to your course?*

The TRC recommends developing culturally appropriate curriculum which we will endeavour to achieve through consultation with the appropriate people and resources at the University of Windsor. It recommends respecting and honouring Treaty relationships. We are increasing our understanding of these relationships through the Pulling Together workshop which involves self-reflection activities about the TRC Calls to Action. One of the TRC principles particularly relevant to our forensic science courses is the 'Investigation of Missing and Murdered Indigenous Women and Girls (MMIWG)'. One of our police Sessional Instructors has recently established a Cold Case Taskforce through the Windsor Police Service. Prior to commencing this taskforce, he reached out to the Can-Am Indian Friendship Centre of Windsor to seek their input on investigating MMIWG as part of this taskforce. He is also incorporating

content on MMIWG in the FRSC 4018-2 Cold Case Investigations course taught to our forensic science students. This will assist to raise their awareness and prepare those students who will be working on cold cases relating to MMIWG as part of their FRSC 4002 Practicum course with Windsor Police.

One of the guiding *University Principles* is to "recognize the importance of Indigenous education leadership through representation at the governance level and within faculty, professional and administrative staff." Dr Sherah VanLaerhoven (Integrative Biology) is of Indigenous heritage and has had significant input into curriculum design and planning of the forensic science programs. Her awareness of Indigenous knowledges has informed the planning process and informs her teaching and research in forensic science.

- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*

We recognize that our knowledge of the history of land acknowledgements and other approaches is limited. Before introducing Indigenous knowledge into the forensic science programs, we are endeavouring to recognize our knowledge gaps and biases, and address these by attending courses (mentioned above) and other events such as the Indigenous Speaker Series through the Elder College Team. Some of this content also focuses on Settler Colonialism and Decolonization and requires self-reflection activities to engage in a critical analysis of these topics.

- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

Through self-analysis, we recognize that our ability to incorporate Indigenous knowledge and content in this course is currently limited. Rather than implementing Indigenous learning outcomes immediately, we are committing to increasing our knowledge and understanding of the importance of Indigenizing all forensic science curriculum, not just one course. Through this journey, we will identify Indigenous material and perspectives that are particularly relevant to our students and will expand on this question in future forms with our intents and actions.

A.2 Experiential Learning Categories

Does the proposed course revision include the addition or deletion of an experiential learning component? For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

☒ **No** - the revision(s) does (do) not include the addition or deletion of experiential learning component(s).

☐ **Yes** - the revision(s) include(s) the addition or deletion of experiential learning component(s). Check all that apply:

Experiential Learning Categories	**Addition**	**Deletion**
applied research	☐	☐
capstone	☐	☐
Clinic	☐	☐
co-op	☐	☐
community service learning	☐	☐
creative performance or exhibit (*for visual and performing arts*)	☐	☐
entrepreneurship	☐	☐
field experience or site visit	☐	☐
field work	☐	☐

industry/community consulting project	☐	☐
interactive simulations	☐	☐
internship – full-time	☐	☐
internship – part-time	☐	☐
professional practicum	☐	☐
research project	☐	☐
study abroad	☐	☐
Labs	☐	☐

B. Learning Outcomes for the Courses Listed Above

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Where there are changes to the learning outcomes, please clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

COPY AND PASTE THE FOLLOWING ROW and TABLE, AND COMPLETE THEM FOR EACH COURSE LISTED ABOVE.

COMPLETE THIS TABLE FOR EACH COURSE LISTED IN SECTION "A" ABOVE.	
COURSE NUMBER AND TITLE:	FRSC-2007. ~~Introduction to~~ **Overview of** Forensic Science
SELECT ONE OF THE FOLLOWING:	
I. There are no official learning outcomes for the course in the PDC/Senate record. (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)	**__X_** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
II. There are changes to the course learning outcomes	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
III. It has been 5 years since learning outcomes for the course were last submitted to PDC/Senate. (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
IV. Learning Outcomes have been reviewed in the past 5 years and no revisions are being proposed.	**____** Learning outcomes need not be submitted. PROVIDE DATE LAST REVIEWED BY PDC/SENATE then go to the next course:

	_____ (check CUMA database at: https://ctl2.uwindsor.ca/cuma/public/)

LEARNING OUTCOMES TABLE

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Describe how the natural and social science disciplines of forensic science can be applied to a forensic investigation. Recognize the role of different experts in forensic investigations.	A. the acquisition, application and integration of knowledge
B. Identify and employ the techniques of different disciplines of forensic science to the search, collection and analysis of forensic evidence.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Integrate available information to evaluate the limitations and appropriateness of specific forensic science methods to a type of evidence.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E. Identify and follow professional and ethical standards of forensic investigations.	E. responsible behaviour to self, others and society
F.	F. interpersonal and communications skills
G. Collaborate with peers effectively by contributing substantively to achieving team goals and providing constructive feedback on others' contributions.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I. Explore the scope of forensic science and identify individual areas of interest within the varied disciplines.	I. the ability and desire for continuous learning

University of Windsor
Program Development Committee

*5.9: **Engineering – Summary of Minor Course and Calendar Changes (Form E)**

Item for: **Information**

Forwarded by: **Faculty of Engineering**

Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

INSTRUCTIONS ARE PROVIDED IN SHADED AREAS. DO NOT WRITE IN SHADED AREAS.

ALL SECTIONS OF THIS FORM ***MUST*** BE COMPLETED. **LEARNING OUTCOMES MUST BE PROVIDED FOR LISTED COURSES WHERE**:

I. THERE ARE **NO OFFICIAL LEARNING OUTCOMES FOR THE COURSE** IN THE PDC/SENATE RECORD (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)

OR

II. THERE ARE **CHANGES TO THE COURSE LEARNING OUTCOMES**

OR

III. IT HAS **BEEN 5 YEARS SINCE LEARNING OUTCOMES FOR THE COURSE WERE LAST** SUBMITTED TO PDC/SENATE (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)

Confirmation of Consultation with AAUs That Will Be Affected, in Major Ways, by the Changes

AAU Consulted	AAU Head/Directors	Date Consulted	Supportive	
			Yes	No
Electrical and Computer Engineering	Behnam Shahrrava	Fall 2022 - present	X	
Civil and Environmental Engineering	Paul Henshaw	Fall 2022 - present	X	
Mechanical, Automotive & Materials Engineering	Vesselin Stoilov	Fall 2022 - present	X	

Please specify to which calendar *[Undergraduate or Graduate]* **the changes will be made. Include the effective date*** *[Fall, Winter, Spring, 20XX]***.** **(subject to timely and clear submission)* **These changes require no new resources.**	Undergraduate calendar, Winter 2025

A. Proposed Course Calendar Revisions

Please provide the current and the proposed new course information by cutting and pasting from the current undergraduate or graduate online calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.
For contact hour/laboratory requirement changes which do not always appear in the calendar, please type in the current information and clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.
Example: **CHEM-1001. University Senates ~~– Role and Power~~** This course explores the history, role, and power of Senates in Canadian universities. ~~(Also offered as BIOC-1001.)~~ (Prerequisite: CHEM-1000.) ~~2 lecture hours and 1 tutorial hour per week~~ **3 lecture hours/week**

GENG-2220 ~~Engineering Treatment of Experimental Data~~ **Probability and Statistics for Engineering**
Treatment of engineering data using the concepts of frequency distribution; measures of central tendency and dispersion. Probability; **introduction to random processes;** random variables; discrete and continuous distributions. Tests of hypotheses; estimation; goodness-of-fit test; linear regression and correlation. Applications using computers in engineering design problems, quality control, and manufacturing processes. (Prerequisite: MATH-1720.) (3 lecture hours, 1 tutorial hour a week.)

A.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In In revising this/these course(s), **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

B.2 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

1. **What process has your department/Faculty used to consider Indigenization?**

The process the Faculty of Engineering has taken has been to create presentations that are provided to students in courses that are common to all B.A.Sc. programs in each year of study. These presentations discuss residential schools, Truth and Reconciliation, and colonialism. Following these presentations, students are assigned a writing assignment to reflect upon the information and discuss its relevance to them and/or the engineering profession. This approach has been taken to reinforce the fact that these issues are important to the engineering profession, regardless of discipline, as discussed below. This process was undertaken by the Associate Dean, Academic, in communication with the Indigenization Learning Specialist within the Centre for Teaching and Learning. GENG-1101 Engineering 1 is the first-year course that provides a presentation about residential schools, Truth and Reconciliation, and colonialism and assigns a reflection assignment for the first-year program, which is common to all engineering students. GENG-2101 Engineering 2 is the second-year course that provides a project in which students consider an engineering-focused issue facing an Indigenous community. GENG-3130 Engineering Economics is the third-year course that provides a presentation about Indigenous issues and students complete an assignment. MECH-4200 Capstone Design is the

fourth-year course that incorporates the Seventh Generation Principle into the decision-making process for design teams to consider the impacts of their design choices and materials on the next seven generations. This is a concept that is introduced in the first-year course GENG-1201 Cornerstone Design, then reinforced in the 2nd and 3rd-year design courses GENG-2201 Engineering Design 2 and GENG-3201 Engineering Design 3, respectively.

The course that is being revised, GENG-2220 does not include Indigenous content, materials, or perspectives.

2. How have you considered the importance or relevance to the course/program?

Engineering design is a topic that is part of the curricula throughout students' four years of study. A much-overlooked aspect of engineering design has historically been considering the environmental and social impacts of designs. This has led to the most pressing global issue – climate change. The engineering profession can learn from Indigenous ways of knowing, especially the appreciation that our current activities will impact the next seven generations.
As well, Indigenization is relevant when we discuss ethics and equity issues within the profession and Canadian society. "Ethics and Equity" is one of twelve Graduate Attributes to be demonstrated by students graduating from an accredited engineering program. Within this context, students are made aware of their responsibility to act equitably and ethically in their actions with their community, colleagues, clients, and society. The most important requirement within the Professional Engineers Ontario (PEO) Code of Ethics is to "regard the practitioner's duty to public welfare as paramount" [1]. This duty lends itself to discussing respect for and collaboration with Indigenous communities when developing infrastructure and processes.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

This is an area of weakness within the Faculty of Engineering. The initial process was created by the Associate Dean, Academic, without much involvement by faculty members. However, changes are being made to raise awareness. Through the Faculty's Equity, Diversity and Inclusion Advisor, faculty members have been made aware of relevant presentations and workshops, e.g., events that were held on and around Orange Shirt Day as well as slides for instructors to use in their classes to provide information about Orange Shirt Day. The Faculty of Engineering Curriculum Committee has identified Indigenous knowledge as a topic that should be more thoroughly covered within all B.A.Sc. curricula. The Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in the short course "Pulling Together: A Guide for Curriculum Developers." All the instructors in the Faculty were also encouraged to attend the workshops to raise awareness (an email was sent on Feb 10, 2023). As part of each program's continuous improvement process, an email was sent to instructors on January 27, 2023, asking, among other items, instructors to consider if, and how, their courses can include Indigenous content.

4. What do the TRC and University Principles documents suggest relevant to your course?

The process that the Faculty of Engineering is taking (described in answer to question 1) affirms the spirit of the TRC Call to Action item 62(i), to create a "curriculum on residential schools, Treaties, and Aboriginal peoples' historical and contemporary contributions to Canada" [2]. As well the University Principles document states that focus should be placed on learning outcomes. This is an activity that the Faculty has been working to implement for over a decade. Furthermore, the Faculty's current process of presenting information on residential schools, Truth and Reconciliation, and colonialism aligns with the principle "Recognize the importance of providing greater exposure and knowledge for non-Indigenous students on the realities, histories, cultures and beliefs of Indigenous people in Canada" [3]. Finally, the ELEVATE program provides funding and collaborative opportunities for Indigenous students in Engineering, which aligns with the principle of committing to "develop opportunities for Indigenous students" [3].

5. What have other similar courses/programs done that might be relevant to your course/program?

The Faculty of Engineering began by developing and implementing our own approach. Now, we are beginning to explore what other engineering programs are doing across Canada. A grant was received on February 7, 2023, to fund research into the current practices within engineering programs across Canada.

6. **In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?**

The answers to questions 1 and 2 have identified specific areas of the programs that are most relevant for the inclusion of Indigenous approaches or knowledge, i.e., in considering the environmental and social impacts of product and process designs, and when we discuss "ethics and equity" and respect for others, our community, and "regard the practitioner's duty to public welfare as paramount" [1].

7. **What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?**

As a whole, the Faculty's awareness is limited. Some faculty members are better informed than others, but this is another area of weakness. The Equity, Diversity and Inclusion Officer in Engineering, who has been hired recently, has begun providing relevant resources and workshops to Faculty members. Indigenous issues are part of these materials. For example, slides were prepared and provided to all instructors to include in our classes to make students aware of Orange Shirt Day, what it is and why it is important, and to advertise events that occurred on Orange Shirt Day.

8. **Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)**

We have met with the Indigenization Learning Specialist, Jaimie Kechego, to review our process and the presentations that are provided to students. This is an iterative process; we have been learning and improving as the process develops, and we will continue to make changes as we learn. We have also reached out to Professional Engineers Ontario (PEO) on January 26, 2023, and First Nations Engineering Services Ltd. on February 3, 2023, to connect with local professional engineers who identify as Indigenous. Building relationships with Indigenous professional engineers would be invaluable for the Faculty of Engineering.

PEO has recently published an issue of its official publication, Engineering Dimensions, about Indigenous engineering firms, Indigenizing engineering, and Indigenous pathways to engineering. This literature provides an Ontario-based foundation for our research into the current state of the profession and approaches taken by other institutions.

9. **Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?**

No, we have not performed this critical analysis. Much more learning needs to occur for those within the Faculty who are developing the curricula to better understand what decolonization looks like within engineering. This is a project that will begin with educating ourselves; the Associate Dean, Academic, and the Undergraduate Programs Coordinator have enrolled in a six-week course "Pulling Together: A Guide for Curriculum Developers" offered by the University of Windsor and taught by Jaimie Kechego.

10. **Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?**

The course that is being revised, GENG-2220, does not include Indigenous content, materials, or perspectives; thus, there are no course learning outcomes associated with Indigenous content, materials, or perspectives. However, the programs that include this course do contain courses that include learning outcomes associated with Indigenous content, materials, or perspectives; the syllabi for those courses include the associated course learning outcomes.

References

1. Government of Ontario. "R.R.O. 1990, Regulation 941: GENERAL under Professional Engineers Act, R.S.O. 1990, c. P28." January 1, 2023. https://www.ontario.ca/laws/regulation/900941

2. Truth and Reconciliation Commission of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf
3. Universities Canada. "Universities Canada principles on Indigenous education." June 29, 2015. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

A.2 Experiential Learning Categories

Does the proposed course revision include the addition or deletion of an experiential learning component? For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

☒ **No** - the revision(s) does (do) not include the addition or deletion of experiential learning component(s).

☐ **Yes** - the revision(s) include(s) the addition or deletion of experiential learning component(s). Check all that apply:

Experiential Learning Categories	**Addition**	**Deletion**
applied research	☐	☐
capstone	☐	☐
Clinic	☐	☐
co-op	☐	☐
community service learning	☐	☐
creative performance or exhibit (*for visual and performing arts*)	☐	☐
entrepreneurship	☐	☐
field experience or site visit	☐	☐
field work	☐	☐
industry/community consulting project	☐	☐
interactive simulations	☐	☐
internship – full-time	☐	☐
internship – part-time	☐	☐
professional practicum	☐	☐
research project	☐	☐
study abroad	☐	☐
Labs	☐	☐

B. Learning Outcomes for the Courses Listed Above

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.*** *Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.* ***Where there are changes to the learning outcomes, please clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining****.*

COPY AND PASTE THE FOLLOWING ROW and TABLE, AND COMPLETE THEM FOR EACH COURSE LISTED ABOVE.

COMPLETE THIS TABLE FOR EACH COURSE LISTED IN SECTION "A" ABOVE.	
COURSE NUMBER AND TITLE:	**GENG-2220 Probability and Statistics for Engineering**
SELECT ONE OF THE FOLLOWING:	
I. There are no official learning outcomes for the course in the PDC/Senate record. (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)	**__X__** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
II. There are changes to the course learning outcomes	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
III. It has been 5 years since learning outcomes for the course were last submitted to PDC/Senate. (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
IV. Learning Outcomes have been reviewed in the past 5 years and no revisions are being proposed.	**____** Learning outcomes need not be submitted. PROVIDE DATE LAST REVIEWED BY PDC/SENATE then go to the next course: _____ (check CUMA database at: https://ctl2.uwindsor.ca/cuma/public/)

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Select, use, and apply the limitations of statistical methods to analyze data. (5A)	A. the acquisition, application and integration of knowledge
B. Identify the components of classical hypothesis tests, including the parameter of interest, the null and alternative hypotheses and the test statistic. (3A) Interpret the results of statistical procedures and tests. (3C) Determine the correct statistical procedures to use in given situations (3B)	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Make informed decisions based on data. (2C) Compute probabilities based on practical situations using appropriate distributions. (2C) Summarize sets of data by computing measures of centrality and dispersion. (2A) Construct confidence intervals for the population mean using large and small samples, for the population proportion, and for the population standard deviation. (2B)	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
E.	E. responsible behaviour to self, others and society
F.	F. interpersonal and communications skills
G.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

University of Windsor
Program Development Committee

*5.10: **Nursing – Summary of Minor Course and Calendar Changes (Form E)**

Item for: **Information**

Forwarded by: **Faculty of Nursing**

Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

INSTRUCTIONS ARE PROVIDED IN SHADED AREAS. DO NOT WRITE IN SHADED AREAS.

ALL SECTIONS OF THIS FORM ***MUST*** BE COMPLETED. **LEARNING OUTCOMES MUST BE PROVIDED FOR LISTED COURSES WHERE**:

I. THERE ARE **NO OFFICIAL LEARNING OUTCOMES FOR THE COURSE** IN THE PDC/SENATE RECORD (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)

OR

II. THERE ARE **CHANGES TO THE COURSE LEARNING OUTCOMES**

OR

III. IT HAS **BEEN 5 YEARS SINCE LEARNING OUTCOMES FOR THE COURSE WERE LAST** SUBMITTED TO PDC/SENATE (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)

Confirmation of Consultation with AAUs That Will Be Affected, in Major Ways, by the Changes

AAU Consulted	AAU Head/Directors	Date Consulted	Supportive	
			Yes	No

Please specify to which calendar *[Undergraduate or Graduate]* **the changes will be made. Include the effective date*** *[Fall, Winter, Spring, 20XX]***.** **(subject to timely and clear submission)* **These changes require no new resources.**	Undergraduate

A. Proposed Course Calendar Revisions

Please provide the current and the proposed new course information by cutting and pasting from the current undergraduate or graduate online calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

For contact hour/laboratory requirement changes which do not always appear in the calendar, please type in the current information and clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

Example: **CHEM-1001. University Senates ~~– Role and Power~~** This course explores the history, role, and power of Senates in Canadian universities. ~~(Also offered as BIOC-1001.)~~ (Prerequisite: CHEM-1000.) ~~2 lecture hours and 1 tutorial hour per week~~ **3 lecture hours/week**

NURS-~~3990~~ 4999. ~~Selected Topics in Nursing~~ Nursing Specialty Option (T)

This ~~selected topics~~ **Nursing Specialty Option** course ~~will offer students~~ **provides the learner** an opportunity ~~to~~ **for** in-depth study **of** a topic of interest. **Topics are relevant to learners** ~~individuals~~ preparing for a career in ~~a~~ **nursing or other health** profession **and** ~~The selection of topics~~ will vary from term to term. ~~, depending on the expertise of available instructors. May include a lab component depending on the topic~~. **Examples of** ~~Possible special~~ topics include Women's Health, Indigenous Health, **Patient Safety, and Oncology**., ~~but for a complete list of approved courses from within Nursing,~~ **P**lease contact the Faculty of Nursing **for a complete list of courses**. (**Some courses will be** open to non-Nursing students ~~and may be taken to fulfill non-specified course requirements by BScN students.)~~(3 lecture hours a week, with possible lab **or other experiential** component depending on the topic). (May be repeated for credit if content changes)

NURS-4999. Nursing Specialty Option (T)

This Nursing Specialty Option course provides the learner an opportunity for in-depth study a topic of interest. Topics are relevant to learners preparing for a career in nursing or other health profession and will vary from term to term. Examples of special topics include Women's Health, Indigenous Health, Patient Safety, and Oncology. Please contact the Faculty of Nursing for a complete list of courses (Some courses will be open to non-Nursing students) (3 lecture hours a week, with possible lab or other experiential component depending on the topic). (May be repeated for credit if content changes).

A.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In In revising this/these course(s), **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

The Faculty of Nursing is committed to the University of Windsor's goal of building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. We have chosen to take a systematic approach at the program and course level to incorporate Indigenous content, material, and perspectives into our curriculum. We are also looking for ways to decolonize our structures and processes.

Initiatives that the Faculty of Nursing have undertaken in the past 12-18 months:

- Many of our faculty have attended courses/workshops/webinars provided by CTL and organizations external to UWindsor to support efforts to indigenize our curriculum.
- In response to the Truth and Reconciliation Commission of Canada: Calls to Action (2015), and in keeping with the goals of the Canadian Association of Schools of Nursing/Canadian Indigenous Nurses Association task force, all incoming students are now required to take a new course: *Culture, Health, and Social Justice on Turtle Island*. The purpose of this course will be to provide nursing students with the resources needed to develop cultural competency as it pertains to Indigenous individuals and communities on Turtle Island. Most of the materials for this course will be comprised of Indigenous perspectives and content, including such topics as how colonialism plays a role in the health and welfare of contemporary Indigenous people.
- A land acknowledgement and EDID statement are included in all course outlines; faculty are encouraged to add personalized statements to the standard ones, and to integrate them into their lectures/presentations.
- A FON Equity, Diversity, Inclusion, and Decolonization Circle was formalized in the fall of 2021. It includes four faculty members and student representatives. Their work has focused on drafting their role, scope, and terms of reference. This group reports to Faculty Council and acts as a liaison and resource to various FON working groups/committees on issues related to EDID.
- The Dean's Intentional Conversations: Learning Our Talk" with the inaugural conversation in October 2022 brough faculty and staff together in a *Blanket Exercise*, facilitated by University of Windsor Indigenous Scholars.
- Creation of a new staff position, *Indigenous Pedagogy and Curriculum Advisor,* to support indigenization across the nursing curriculum, effective September 2022. The incumbent is an alumnus of the Faculty of Nursing and an *Indigenous Transition Facilitator at the Southwest Ontario Aboriginal Access Centre.*

For the Nursing Speciality topics, faculty who are developing/renewing their courses are expected to consult with our *Indigenous Pedagogy and Curriculum Advisor* for guidance in course development.

A.2 Experiential Learning Categories

Does the proposed course revision include the addition or deletion of an experiential learning component? For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

☒ **No** - the revision(s) does (do) not include the addition or deletion of experiential learning component(s).

☒ **Yes** - the revision(s) include(s) the addition or deletion of experiential learning component(s). Check all that apply:

Experiential Learning Categories	**Addition**	**Deletion**
applied research	☐	☐
capstone	☐	☐
Clinic	☐	☐
co-op	☐	☐
community service learning	☐	☐
creative performance or exhibit (*for visual and performing arts*)	☐	☐
entrepreneurship	☐	☐

field experience or site visit	☐	☐
field work	☐	☐
industry/community consulting project	☐	☐
interactive simulations	☐	☐
internship – full-time	☐	☐
internship – part-time	☐	☐
professional practicum	☐	☐
research project	☐	☐
study abroad	☐	☐
Labs	☒	☐

** Depending on the specific topic, there **may** be a lab component (or other experiential activity), depending on the topic.*

B. Learning Outcomes for the Courses Listed Above

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Where there are changes to the learning outcomes, please clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

COPY AND PASTE THE FOLLOWING ROW and TABLE, AND COMPLETE THEM FOR EACH COURSE LISTED ABOVE.

COMPLETE THIS TABLE FOR EACH COURSE LISTED IN SECTION "A" ABOVE.	
COURSE NUMBER AND TITLE:	NURS 4999. Nursing Specialty Option (T)
SELECT ONE OF THE FOLLOWING:	
I. There are no official learning outcomes for the course in the PDC/Senate record. (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)	**__X__** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
II. There are changes to the course learning outcomes	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.

III. It has been 5 years since learning outcomes for the course were last submitted to PDC/Senate. (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)	____ Provide learning outcomes for the course by completing the Learning Outcomes Table below.
IV. Learning Outcomes have been reviewed in the past 5 years and no revisions are being proposed.	____ Learning outcomes need not be submitted. PROVIDE DATE LAST REVIEWED BY PDC/SENATE then go to the next course: _____ (check CUMA database at: https://ctl2.uwindsor.ca/cuma/public/)

LEARNING OUTCOMES TABLE

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. 1. Apply fundamental concepts of health promotion, prevention, risk reduction, and the determinants of health to a health-related issue. Also applies to C, E 2. Apply the principles and skills of evidence-informed decision making to propose interventions that promote optimal outcomes for various clients (individuals, groups, organizations, communities, populations) across various settings and sectors. Also applies to B and E 3. Apply critical thinking to achieve optimal health outcomes and improve care delivery for various clients (individuals, groups, organizations, communities, populations) and in diverse healthcare contexts. Also applies to C, E 4. Analyze the impact of healthcare policy, finance, legal and regulatory environments on health and healthcare delivery. Also applies to C 5. Propose advocacy strategies that promote social justice and advance health equity. Also applies to C, E, F	A. the acquisition, application and integration of knowledge
B.	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E.	E. responsible behaviour to self, others and society
F.	F. interpersonal and communications skills

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
G.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

University of Windsor
Program Development Committee

*5.11: **Kinesiology – Summary of Minor Course and Calendar Changes (Form E)**

Item for: **Information**

Forwarded by: **Faculty of Human Kinetics**

Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

INSTRUCTIONS ARE PROVIDED IN SHADED AREAS. DO NOT WRITE IN SHADED AREAS.

ALL SECTIONS OF THIS FORM ***MUST*** BE COMPLETED. **LEARNING OUTCOMES MUST BE PROVIDED FOR LISTED COURSES WHERE**:

I. THERE ARE **NO OFFICIAL LEARNING OUTCOMES FOR THE COURSE** IN THE PDC/SENATE RECORD (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)

OR

II. THERE ARE **CHANGES TO THE COURSE LEARNING OUTCOMES**

OR

III. IT HAS **BEEN 5 YEARS SINCE LEARNING OUTCOMES FOR THE COURSE WERE LAST** SUBMITTED TO PDC/SENATE (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)

Confirmation of Consultation with AAUs That Will Be Affected, in Major Ways, by the Changes

AAU Consulted	AAU Head/Directors	Date Consulted	Supportive	
			Yes	No

Please specify to which calendar *[Undergraduate or Graduate]* **the changes will be made. Include the effective date*** *[Fall, Winter, Spring, 20XX]***.** **(subject to timely and clear submission)* **These changes require no new resources.**	Undergraduate Spring 2023

A. Proposed Course Calendar Revisions

Please provide the current and the proposed new course information by cutting and pasting from the current undergraduate or graduate online calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining. For contact hour/laboratory requirement changes which do not always appear in the calendar, please type in the current information and clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining. Example: **CHEM-1001. University Senates ~~– Role and Power~~** This course explores the history, role, and power of Senates in Canadian universities. ~~(Also offered as BIOC-1001.)~~ (Prerequisite: CHEM-1000.) ~~2 lecture hours and 1 tutorial hour per week~~ **3 lecture hours/week**

KINE-3020. Exercise ~~**and Fitness**~~ Psychology
An examination of the psychological processes by which healthy and unhealthy behaviours related to physical activity develop and the methods by which behavioural change can be encouraged. Emphasis will be placed on **physical activity interventions and psychosocial influences of exercise.** ~~exercise, nutrition, and injury as factors in health-related physical fitness.~~

A.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In In revising this/these course(s), **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

The Faculty of Human Kinetics is committed to academic study about and engagement with the Indigenous community, while acknowledging that there is significant room for growth in this area within our unit. Indigenous (First Nations, Metis and/or Inuit) content, perspectives and materials are included in our curriculum as part of historical, social, and critical discussions, highlighting local, national, and/or international Indigenous communities and their cultural practices primarily in relation to sport, exercise, and health.

1. What process has your department/Faculty used to consider Indigenization?
   We have a long standing equity (now EDI) committee, with the following objectives:
   a) To identify inequities based on gender, sexuality, age, race, ethnicity, religion, and ability within the Faculty, and provide recommendations to the Dean of the Faculty of Human Kinetics for eliminating those inequities.
   b) To provide a confidential mechanism through which the concerns of students, faculty, and/or staff who feel that they may be experiencing discrimination based on gender, sexuality, age, race, ethnicity, religion, and/or ability within the Faculty can be safely made. Concerns and recommendations will be directed from the committee to the Dean for consideration.
   c) To inform and educate students, faculty and/or staff on equity, diversity and inclusion related to gender, sexuality, age, race, ethnicity, and ability within the Faculty, the University, and community through faculty workshops, student/athlete/employee orientation resources and other social media platforms. The EDI Committee and the Anti-Racism Sub-Committee will provide a standing report at Faculty Council on an annual basis. As well, relevant information, initiatives, and polices will be communicated at Kinesiology Council and ARS department meetings.

d) To support transparency and accountability with regards to the EDI policy, decision-making, and hiring practices within the Faculty to ensure an informed perspective of all members. Implementation and completion of the DEAP Tool will be a responsibility of the EDI committee on an annual basis.

Moreover, the faculty (under the direction of the previous associate dean – academic programs and a voluntary working group of faculty members) undertook an EDI (voluntary) assessment of course and program delivery within the faculty. This included voluntary responses to the following prompts:

a) In developing this course, has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum? (e.g. consultation with Indigenous organizations/people, literature review, etc.)
b) If yes to [the above], please describe "how" has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum? (e.g. consultation with Indigenous organizations/people, literature review, etc.)
c) Have you faced any challenges or barriers when attempting to incorporate Indigenous (First Nations, Métis, or Inuit) or other EDI-related content into the curriculum?
d) If yes to [the above], please describe these challenges and/or barriers.

Voluntary responses to these prompts were recorded and shared with all faculty.

Finally, recommendations from the working included the following:

Why should we strive for a diverse and inclusive learning environment?

Research shows that diversity and inclusion in the classroom will positively affect students, faculty, and staff at the institution, but also the communities in which we live because:

- An inclusive education provides opportunities to learn about and accept individual differences.
- Experiences with diversity are linked to positive social changes and personal growth during and after a post-secondary education including greater civic engagement, social justice, and more diverse social circles and home communities.
- Critical thinking, problem-solving, and cognitive complexity increase for all students exposed to structural and curricular diversity on campus and in all parts of campus life.
- Socializing in a diverse climate and having access to diversity in their courses increases student retention, overall satisfaction with their educational experience, classroom self-confidence, and social agency.

[For reference see Gurin et. al. 2002; Smith and Schonfeld 2000; Laird 2005; Bowman 2011; Rizvi et. al., 2016].

Recommendations:

- Instructors are strongly encouraged to highlight where EDI content is found in their courses.
    - Several courses noted EDI content that is not indicated on course syllabi. It is important for an inclusive curriculum that this content/discussion/assignment be visible to students taking the course.

- Instructors are strongly encouraged to Include a land acknowledgement and some form of commitment to EDI practices on course syllabi
    - UWindsor land acknowledgement (https://www.uwindsor.ca/indigenous-peoples/)
    - There are several examples of EDI statements online, but instructors are encouraged to include their own statements that are genuine to their course/themselves. As a quick example, the Government of Canada lists the following promoting inclusion and respect for diversity that could easily be modified by any of us:

"Canada actively promotes inclusion and respect for diversity at home and abroad. Diversity is a natural characteristic of every society. Canada recognizes diversity as a source of strength and works to champion inclusive attitudes and encourage the adoption of inclusive approaches that lead to the full and meaningful participation of all."

- Instructors with considerable EDI content or assignments in their courses should strongly consider updating their course learning outcomes to better reflect the expectations of students.
    - Establishing course learning outcomes around EDI are meaningful sustainable changes to course delivery and reflect a commitment to including this content in our program.
    - [The Associate Dean – Academic Programs] can help with the necessary PDC forms to complete.

- Instructors are strongly encouraged to increase the diversity of imagery, examples, cases, etc. used in their courses, while staying away from stereotypical imagery (e.g., female nurses, etc.).
    - At a minimum, this type of change better reflects the diversity of the world in which we live.
    - It is important to note, however, that there are other ways of introducing diversity that can be quite rewarding to the course and students who take them, but also encourage a greater degree of learning. For example:
        i. Ensure that course readings come from a diverse group of authors.
        ii. Move from imagery to discussion or higher-level pedagogy (e.g., debate, reflection, critical evaluation, etc.)
        iii. Invite diverse speakers into classes and consult with community members
        iv. Consult with experts or members of underrepresented groups for course content
        v. Ensure that students can work interactively in diverse and mixed groups
        vi. Ensure that students are encouraged to share diverse perspectives and interpretations of course material

- Consideration should be given for religion and religious practices within the curriculum, including:
    - recognizing major religious practices and the impact these may have on course participation (or for content consideration: religious remembrances and physiological/occupational effects...e.g., Ramadan...and the potential effects for participation in sport, performing in the workplace, etc.)
    - recognizing the impact of certain rites and practices on the human body
    - providing an openness to alternate forms of participation for some groups of people

- Read and try to incorporate some of the suggestions from the "inclusive teaching syllabus"

- Instructors can use the following institutional and/or other resources to find diverse subject experts and/or for help with course design (please note that this list is not the only place to find information and instructors are encouraged to actively seek out diverse researchers and content in their subject areas):
    - UWindsor - Indigenous Knowledges (contact: Jamie Kechego)
    - UWindsor - Aboriginal Education Centre (contact: Russell Nahdee)
    - UWindsor - Anti-Black Racism Resources (contact: Marium Tolson-Murtty)
    - UWindsor - Anti-Black Racism Teaching and Learning (contact: Dr. Andrew Allen)
    - UWindsor - EDI Office (contact: Dr. Clinton Beckford)
    - Sport Information Resource Centre (SIRC)
    - Black Scientists and Inventors | Black History Month (nationalgeographic.com)
    - HOME | Canadian Black Scientists
    - Indigenous History-Makers (rcaanc-cirnac.gc.ca)
    - Indigenous Sport and Wellness Ontario
    - Ontario Federation of Indigenous Friendship Centres - OFIFC
    - Indigenous Sport for Life
    - North American Indigenous Games (naigcouncil.com)
    - Closeted discoverers: Lesbian, gay, bisexual, and transgender scientists | Science | AAAS (sciencemag.org)
    - LGBTQ Student Athletes - NCAA

- Canadian Women & Sport | Powering Better Sport Through Gender Equity (womenandsport.ca)
- Leadership Through Sport #STRONGERTOGETHER | Leadership à Travers Le Sport #FORTENSEMBLE (thebcca.com)
- 100 Women - BBC News
- Canadian Journal for Women in Coaching | Coach
- Rick Hansen Foundation

2. How have you considered the importance or relevance to the course/program?
   See answers to question above.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?
   See answers to #1 above, in addition to other specific events including, but not limited to:
   - Lacrosse is Medicine event given by Rain Whited, a member of the Oneida Nation of the Thames and former player for the Windsor Warlocks, Windsor Clippers and Wallaceburg Red Devils, who also provided a guest lecture in our Ethics in Sport and Physical Activity course before the event with local First Nation, Métis and Inuit high school students as well as university staff and students in attendance. (https://windsorstar.com/news/local-news/lacrosse)

   - Dr. Paraschak (Faculty of Human Kinetics emeritus professor) has been a lead writer on a Wikipedia project (TRC Call to Action #87) ensuring better international public knowledge online about elite Indigenous athletes in Canada (https://en.wikipedia.org/wiki/Wikipedia:Wiki_Ed/University_of_Windsor/Sport_and_Aboriginal_Peoples_in_Canada_(Fall_2017)) and https://www.cbc.ca/news/canada/windsor/indigenous-athletes-database-1.4840477

   - Lancer Hockey providing support to First nations communities in British Columbia (https://golancers.ca/news/2022/5/24/mens-hockey-lancer-hockey-to-provide-humanitarian-support-to-first-nations-communities-in-british-columbia.aspx)

   - The Department of Kinesiology Hosted a lecture entitled “Fire Keepers and the Fire Within” by Stanford Zhupkooum White in support of Orange Shirt Day. (https://www.uwindsor.ca/dailynews/2021-09-23/indigenous-knowledge-keeper-share-his-journey)

   - Hosting Indigenous workshops in coaching. (https://www.cbc.ca/news/canada/windsor/indigenous-athlete-workshop-windsor-1.5360850)

   - Hosted a traditional Blanket Exercise for all Faculty and staff guided by local Indigenous friends.

   - Supported HK student partnerships in activities to promote and support health and exercise in Indigenous communities (e.g., MOVEmber event open to Indigenous students from the GECDSB).

   - Established a VOICES of Excellence Scholarship valued at $1000 to support Black and/or Indigenous students entering Human Kinetics.

4. What do the TRC and University Principles documents suggest relevant to your course?
   Truth and Reconciliation Commission's Calls to Action 87 to 91:
   - 87. We call upon all levels of government, in collaboration with Aboriginal peoples, sports halls of fame, and other relevant organizations, to provide public education that tells the national story of Aboriginal athletes in history.

- 88. We call upon all levels of government to take action to ensure long-term Aboriginal athlete development and growth, and continued support for the North American Indigenous Games, including funding to host the games and for provincial and territorial team preparation and travel.
- 89. We call upon the federal government to amend the Physical Activity and Sport Act to support reconciliation by ensuring that policies to promote physical activity as a fundamental element of health and well-being, reduce barriers to sports participation, increase the pursuit of excellence in sport, and build capacity in the Canadian sport system, are inclusive of Aboriginal peoples.
- 90. We call upon the federal government to ensure that national sports policies, programs, and initiatives are inclusive of Aboriginal peoples, including, but not limited to, establishing:
    I. In collaboration with provincial and territorial governments, stable funding for, and access to, community sports programs that reflect the diverse cultures and traditional sporting activities of Aboriginal peoples.
    II. An elite athlete development program for Aboriginal athletes.
    III. Programs for coaches, trainers, and sports officials that are culturally relevant for Aboriginal peoples.
    IV. Anti-racism awareness and training programs.
- 91. We call upon the officials and host countries of international sporting events such as the Olympics, Pan Am, and Commonwealth games to ensure that Indigenous peoples' territorial protocols are respected, and local Indigenous communities are engaged in all aspects of planning and participating in such events.

5. What have other similar courses/programs done that might be relevant to your course/program?
   See #6 below.
6. In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?
   This is something that has been discussed in both the working group on EDI in the curriculum and our EDI committee. Our faculty generally seems open to this inclusion. For example, after feedback from the Centre for Teaching and Learning, Indigenous Curriculum and Pedagogy Project Coordinator, and Anti-Racism Pedagogies Teaching Leadership Chair at the University of Windsor, the following program learning outcomes were proposed at a Human Kinetics Faculty Council in 2022:
   - **Recognize the value of diversity** across the spectrum (cognition, behaviour, physiology, region/nationality, socioeconomic status, race, ethnicity, religion, sex, gender and gender identity, sexual orientation, ability, language, and/or age) where they work, live, and play.
   - Recognize the historical, systemic, and structural roots of social injustice and **identify strategies to redress inequity in our communities**.
   - **Examine their personal beliefs/biases and build strategies to remove structural/systemic barriers** in their professional and personal lives.

   While understanding there is much work to be done to both incorporate and map these outcomes into the program, there was no explicit objection to the process of moving these forward.
   Moreover, if/when these program learning outcomes were introduced, preliminary searches with other non-HK faculty members to research and ultimately designate courses to fulfil the program learning outcomes above. This includes selection from the following list, but would require more vetting/discussion with Indigenous leaders, and various department/faculty administration be incorporated properly (potential Indigenous content **BOLDED**):

GART-1210	**An Introduction into Indigenous Topics**
POLS-1709	Introduction to Diaspora Studies: There's No Place Like Home
SJST-1400	Queer Activism
SOSC-1210	**An Introduction into Indigenous Topics**
WGST-1000	Women in Canadian Society
WGST-1400	Queer Activism
CMAF-2700	Speaking Truth to Power: Voice and Activism

DISB-2010	Disability Studies: Theory and Culture
ENGL-2330	Gender and Literature
HIST-2460	**Aboriginal Peoples in Canadian History: Beginnings to Mid-Nineteenth Century**
HIST-2470	**Aboriginal Peoples in Canadian History: Mid-Nineteenth Century to the Present**
HIST-2500	Women in Canada and the United States, 1870-Present
PHIL 2300	Indigenous Philosophy of the Americas
PHIL-2380	Social Identity, Diversity and Race
POLS 2000	**Indigenous Policy and Constitutional Relationships**
POLS-2110	Women and Politics
PSYC-2400	Psychology of Sex and Gender
SACR-2100	Gender, Sexuality and Social Justice
SACR-2400	Introduction to Race and Ethnicity
WGST-2100	Gender, Sexuality and Social Justice
WGST-2200	Women, Race, and Social Justice
WORK-2600	Women and Globalization
HIST-3200	Africa and the Atlantic System
HIST-3610	Slavery In North America, 1600-1877
HIST-3620	African Americans/Canadians After Emancipation, 1877 to the Present
POLS-3620	Human Rights and Global Justice
HIST-4630	History of Gender and Sexuality
POLS-4000	**Indigenous Nation-Building: Traditional Governance in a Modern Era**

7. What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?
   This varies by faculty member from, presumably, no awareness to very much aware. As a program, we rely on institutional guidance (administration as well as specific Indigenous leadership), community outreach, and individual research. We have benefitted from having an active scholar and advocate (Dr. Victoria Paraschak) for Indigenous Peoples and Knowledge in our program and a positive relationship with members of AEC and CTL.

8. Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name). Details are important. If allowed please share names of whose been consulted.. or the literature used, etc.
   This has taken many forms and includes the following:
   - A few instructors have consulted with the University of Windsor's Indigenous Curriculum and Pedagogy Project Coordinator to discuss ideas surrounding the inclusion of Indigenous content into the curriculum. For example,
   - KINE-2250 has included several Indigenous guest lecturers (e.g. lectures on Lacrosse as Medicine given by an Indigenous guest speaker) and made use of Nanadagikenim- Seek to Know Grants in guest speaker invitation and course preparation.
   - Several faculty have relied on literature searches for Indigenous-related content. For example,
   - KINE-2300 has consulted the TRC website https://www.rcaanc-cirnac.gc.ca/eng/1524505883755/1557512006268 for the sport-/physical activity-related Calls to Action.
   - KINE-2450 has collected and presented marketing-related examples of what sport organizations are doing to reach/leverage Indigenous communities.
   - KINE-2500 has integrated examples from organizations such as the Aboriginal Sport Circle, the Aboriginal Sport and Wellness Council of Ontario, the Canada Games Council, and community level organizations that provide sport and recreation opportunities for the Indigenous community.

Moreover, has relied mostly on sport industry reports, blogs, policy documents for insight into the organizational realities of organizations focused on Indigenous sport and in relation to the sport system as a whole.

- KINE-4610 has used literature review and consultation with medical and chronic disease management specialists.
- KINE-4900 has included local and out of town Indigenous lecturers for these courses, and consulted with the Aboriginal Education Centre to determine experiential learning opportunities, including in a sweat (sweat lodge) experience for students with a Knowledge Keeper, Indigenous speakers have discussed the Medicine Wheel, Healing Aspects of Cedar and they have discussed how Indigenous Medicine is part of collaborative health care at Windsor Regional Hospital.

9. Are you engaging in critical analysis of Settler Colonialism and/or Decolonization? Has Kinesiology done this yet? If not, always provide details as to why not.
   As a program, no. Within some courses, yes. For example, see KINE-2300 above.

A.2 Experiential Learning Categories

Does the proposed course revision include the addition or deletion of an experiential learning component? For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

☒ **No** - the revision(s) does (do) not include the addition or deletion of experiential learning component(s).

☐ **Yes** - the revision(s) include(s) the addition or deletion of experiential learning component(s). Check all that apply:

Experiential Learning Categories	**Addition**	**Deletion**
applied research	☐	☐
capstone	☐	☐
Clinic	☐	☐
co-op	☐	☐
community service learning	☐	☐
creative performance or exhibit (*for visual and performing arts*)	☐	☐
entrepreneurship	☐	☐
field experience or site visit	☐	☐
field work	☐	☐
industry/community consulting project	☐	☐
interactive simulations	☐	☐
internship – full-time	☐	☐
internship – part-time	☐	☐
professional practicum	☐	☐
research project	☐	☐
study abroad	☐	☐
Labs	☐	☐

B. Learning Outcomes for the Courses Listed Above

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the

appropriate rows. Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.*** *Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.* ***Where there are changes to the learning outcomes, please clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining****.*

COPY AND PASTE THE FOLLOWING ROW and TABLE, AND COMPLETE THEM FOR EACH COURSE LISTED ABOVE.

COMPLETE THIS TABLE FOR EACH COURSE LISTED IN SECTION "A" ABOVE.	
COURSE NUMBER AND TITLE:	**KINE 3020. Exercise and Fitness Psychology**
SELECT ONE OF THE FOLLOWING:	
I. There are no official learning outcomes for the course in the PDC/Senate record. (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)	**_X__** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
II. There are changes to the course learning outcomes	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
III. It has been 5 years since learning outcomes for the course were last submitted to PDC/Senate. (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
IV. Learning Outcomes have been reviewed in the past 5 years and no revisions are being proposed.	**____** Learning outcomes need not be submitted. PROVIDE DATE LAST REVIEWED BY PDC/SENATE then go to the next course: _____ (check CUMA database at: https://ctl2.uwindsor.ca/cuma/public/)

Course Learning Outcomes KINE 3020. Exercise and Fitness Psychology *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Critique theories and concepts of exercise psychology. (Also relevant to B, C, F) Synthesize scholarly research related to a specific area of exercise psychology. (Also relevant to B, C)	A. the acquisition, application and integration of knowledge
B. Synthesize quantitative and qualitative research findings in exercise psychology. (Also relevant to A, D, F)	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)

Course Learning Outcomes KINE 3020. Exercise and Fitness Psychology *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
Summarize key issues in exercise psychology using innovative knowledge mobilization techniques. (Also relevant to F)	
C. Investigate critical problems within the field of exercise psychology (Also relevant to B, F).	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E. Critique exercise-related barriers and opportunities experienced by diverse populations. (Also relevant to H)	E. responsible behaviour to self, others and society
F.	F. interpersonal and communications skills
G. Collaborate with peers and community members with respect and an appreciation of different opinions. (Also relevant to F)	G. teamwork, and personal and group leadership skills
H. Formulate innovative solutions to current issues in exercise psychology. (Also relevant to A, B, I, F)	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

University of Windsor
Program Development Committee

*5.12: **Kinesiology (Graduate) Summary of Minor Course and Calendar Changes (Form E)**

Item for: **Information**

Forwarded by: **Faculty of Graduate Studies**

Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

INSTRUCTIONS ARE PROVIDED IN SHADED AREAS. DO NOT WRITE IN SHADED AREAS.

ALL SECTIONS OF THIS FORM ***MUST*** BE COMPLETED. **LEARNING OUTCOMES MUST BE PROVIDED FOR LISTED COURSES WHERE**:

I. THERE ARE **NO OFFICIAL LEARNING OUTCOMES FOR THE COURSE** IN THE PDC/SENATE RECORD (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)

OR

II. THERE ARE **CHANGES TO THE COURSE LEARNING OUTCOMES**

OR

III. IT HAS **BEEN 5 YEARS SINCE LEARNING OUTCOMES FOR THE COURSE WERE LAST** SUBMITTED TO PDC/SENATE (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)

Confirmation of Consultation with AAUs That Will Be Affected, in Major Ways, by the Changes

AAU Consulted	AAU Head/Directors	Date Consulted	Supportive	
			Yes	No

Please specify to which calendar *[Undergraduate or Graduate]* **the changes will be made. Include the effective date*** *[Fall, Winter, Spring, 20XX]***.** **(subject to timely and clear submission)* **These changes require no new resources.**	Fall 2023

A. Proposed Course Calendar Revisions

Please provide the current and the proposed new course information by cutting and pasting from the current undergraduate or graduate online calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

For contact hour/laboratory requirement changes which do not always appear in the calendar, please type in the current information and clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

Example: **CHEM-1001. University Senates ~~– Role and Power~~** This course explores the history, role, and power of Senates in Canadian universities. ~~(Also offered as BIOC-1001.)~~ (Prerequisite: CHEM-1000.) ~~2 lecture hours and 1 tutorial hour per week~~ **3 lecture hours/week**

KINE-8040. Advanced Topics in the Psychology of Sport and Exercise
An analysis of the research and literature related to the psychological phenomena influencing ~~the~~ participants in ~~the~~ sport and exercise **contexts** ~~situation~~. Topics include specific sport/exercise intervention techniques, measurement issues and social psychological aspects of sport and exercise.

A.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

*In In revising this/these course(s), **how** has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What **process** has your department/Faculty used to consider Indigenization?*
- ***How** have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

The Faculty of Human Kinetics is committed to academic study about and engagement with the Indigenous community, while acknowledging that there is significant room for growth in this area within our unit. Indigenous (First Nations, Metis and/or Inuit) content, perspectives and materials are included in our curriculum as part of historical, social, and critical discussions, highlighting local, national, and/or international Indigenous communities and their cultural practices primarily in relation to sport, exercise, and health.

1. What process has your department/Faculty used to consider Indigenization?
   We have a long standing equity (now EDI) committee, with the following objectives:
   a) To identify inequities based on gender, sexuality, age, race, ethnicity, religion, and ability within the Faculty, and provide recommendations to the Dean of the Faculty of Human Kinetics for eliminating those inequities.
   b) To provide a confidential mechanism through which the concerns of students, faculty, and/or staff who feel that they may be experiencing discrimination based on gender, sexuality, age, race, ethnicity, religion, and/or ability within the Faculty can be safely made. Concerns and recommendations will be directed from the committee to the Dean for consideration.
   c) To inform and educate students, faculty and/or staff on equity, diversity and inclusion related to gender, sexuality, age, race, ethnicity, and ability within the Faculty, the University, and community through faculty workshops, student/athlete/employee orientation resources and other social media platforms. The EDI Committee and the Anti-Racism Sub-Committee will provide a standing report at

Faculty Council on an annual basis. As well, relevant information, initiatives, and polices will be communicated at Kinesiology Council and ARS department meetings.

d) To support transparency and accountability with regards to the EDI policy, decision-making, and hiring practices within the Faculty to ensure an informed perspective of all members. Implementation and completion of the DEAP Tool will be a responsibility of the EDI committee on an annual basis.

Moreover, the faculty (under the direction of the previous associate dean – academic programs and a voluntary working group of faculty members) undertook an EDI (voluntary) assessment of course and program delivery within the faculty. This included voluntary responses to the following prompts:

a) In developing this course, has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum? (e.g. consultation with Indigenous organizations/people, literature review, etc.)
b) If yes to [the above], please describe "how" has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum? (e.g. consultation with Indigenous organizations/people, literature review, etc.)
c) Have you faced any challenges or barriers when attempting to incorporate Indigenous (First Nations, Métis, or Inuit) or other EDI-related content into the curriculum?
d) If yes to [the above], please describe these challenges and/or barriers.

Voluntary responses to these prompts were recorded and shared with all faculty.

Finally, recommendations from the working included the following:

Why should we strive for a diverse and inclusive learning environment?

Research shows that diversity and inclusion in the classroom will positively affect students, faculty, and staff at the institution, but also the communities in which we live because:

- An inclusive education provides opportunities to learn about and accept individual differences.
- Experiences with diversity are linked to positive social changes and personal growth during and after a post-secondary education including greater civic engagement, social justice, and more diverse social circles and home communities.
- Critical thinking, problem-solving, and cognitive complexity increase for all students exposed to structural and curricular diversity on campus and in all parts of campus life.
- Socializing in a diverse climate and having access to diversity in their courses increases student retention, overall satisfaction with their educational experience, classroom self-confidence, and social agency.

[For reference see Gurin et. al. 2002; Smith and Schonfeld 2000; Laird 2005; Bowman 2011; Rizvi et. al., 2016].

Recommendations:

- Instructors are strongly encouraged to highlight where EDI content is found in their courses.
    - Several courses noted EDI content that is not indicated on course syllabi. It is important for an inclusive curriculum that this content/discussion/assignment be visible to students taking the course.

- Instructors are strongly encouraged to Include a land acknowledgement and some form of commitment to EDI practices on course syllabi
    - UWindsor land acknowledgement (https://www.uwindsor.ca/indigenous-peoples/)
    - There are several examples of EDI statements online, but instructors are encouraged to include their own statements that are genuine to their course/themselves. As a quick example, the Government of Canada lists the following promoting inclusion and respect for diversity that could easily be modified by any of us:

"Canada actively promotes inclusion and respect for diversity at home and abroad. Diversity is a natural characteristic of every society. Canada recognizes diversity as a source of strength and works to champion inclusive attitudes and encourage the adoption of inclusive approaches that lead to the full and meaningful participation of all."

- Instructors with considerable EDI content or assignments in their courses should strongly consider updating their course learning outcomes to better reflect the expectations of students.
    - Establishing course learning outcomes around EDI are meaningful sustainable changes to course delivery and reflect a commitment to including this content in our program.
    - [The Associate Dean – Academic Programs] can help with the necessary PDC forms to complete.

- Instructors are strongly encouraged to increase the diversity of imagery, examples, cases, etc. used in their courses, while staying away from stereotypical imagery (e.g., female nurses, etc.).
    - At a minimum, this type of change better reflects the diversity of the world in which we live.
    - It is important to note, however, that there are other ways of introducing diversity that can be quite rewarding to the course and students who take them, but also encourage a greater degree of learning. For example:
        i. Ensure that course readings come from a diverse group of authors.
        ii. Move from imagery to discussion or higher-level pedagogy (e.g., debate, reflection, critical evaluation, etc.)
        iii. Invite diverse speakers into classes and consult with community members
        iv. Consult with experts or members of underrepresented groups for course content
        v. Ensure that students can work interactively in diverse and mixed groups
        vi. Ensure that students are encouraged to share diverse perspectives and interpretations of course material

- Consideration should be given for religion and religious practices within the curriculum, including:
    - recognizing major religious practices and the impact these may have on course participation (or for content consideration: religious remembrances and physiological/occupational effects...e.g., Ramadan...and the potential effects for participation in sport, performing in the workplace, etc.)
    - recognizing the impact of certain rites and practices on the human body
    - providing an openness to alternate forms of participation for some groups of people

- Read and try to incorporate some of the suggestions from the "inclusive teaching syllabus"

- Instructors can use the following institutional and/or other resources to find diverse subject experts and/or for help with course design (please note that this list is not the only place to find information and instructors are encouraged to actively seek out diverse researchers and content in their subject areas):
    - UWindsor - Indigenous Knowledges (contact: Jamie Kechego)
    - UWindsor - Aboriginal Education Centre (contact: Russell Nahdee)
    - UWindsor - Anti-Black Racism Resources (contact: Marium Tolson-Murtty)
    - UWindsor - Anti-Black Racism Teaching and Learning (contact: Dr. Andrew Allen)
    - UWindsor - EDI Office (contact: Dr. Clinton Beckford)
    - Sport Information Resource Centre (SIRC)
    - Black Scientists and Inventors | Black History Month (nationalgeographic.com)
    - HOME | Canadian Black Scientists
    - Indigenous History-Makers (rcaanc-cirnac.gc.ca)
    - Indigenous Sport and Wellness Ontario
    - Ontario Federation of Indigenous Friendship Centres - OFIFC
    - Indigenous Sport for Life
    - North American Indigenous Games (naigcouncil.com)

- Closeted discoverers: Lesbian, gay, bisexual, and transgender scientists | Science | AAAS (sciencemag.org)
- LGBTQ Student Athletes - NCAA
- Canadian Women & Sport | Powering Better Sport Through Gender Equity (womenandsport.ca)
- Leadership Through Sport #STRONGERTOGETHER | Leadership à Travers Le Sport #FORTENSEMBLE (thebcca.com)
- 100 Women - BBC News
- Canadian Journal for Women in Coaching | Coach
- Rick Hansen Foundation

2. How have you considered the importance or relevance to the course/program?
   See answers to question above.

3. How has your department or faculty approached raising awareness for Indigenous knowledges in your area?
   See answers to #1 above, in addition to other specific events including, but not limited to:
   - Lacrosse is Medicine event given by Rain Whited, a member of the Oneida Nation of the Thames and former player for the Windsor Warlocks, Windsor Clippers and Wallaceburg Red Devils, who also provided a guest lecture in our Ethics in Sport and Physical Activity course before the event with local First Nation, Métis and Inuit high school students as well as university staff and students in attendance. (https://windsorstar.com/news/local-news/lacrosse)

   - Dr. Paraschak (Faculty of Human Kinetics emeritus professor) has been a lead writer on a Wikipedia project (TRC Call to Action #87) ensuring better international public knowledge online about elite Indigenous athletes in Canada (https://en.wikipedia.org/wiki/Wikipedia:Wiki_Ed/University_of_Windsor/Sport_and_Aboriginal_Peoples_in_Canada_(Fall_2017)) and https://www.cbc.ca/news/canada/windsor/indigenous-athletes-database-1.4840477

   - Lancer Hockey providing support to First nations communities in British Columbia (https://golancers.ca/news/2022/5/24/mens-hockey-lancer-hockey-to-provide-humanitarian-support-to-first-nations-communities-in-british-columbia.aspx)

   - The Department of Kinesiology Hosted a lecture entitled “Fire Keepers and the Fire Within” by Stanford Zhupkooum White in support of Orange Shirt Day. (https://www.uwindsor.ca/dailynews/2021-09-23/indigenous-knowledge-keeper-share-his-journey)

   - Hosting Indigenous workshops in coaching. (https://www.cbc.ca/news/canada/windsor/indigenous-athlete-workshop-windsor-1.5360850)

   - Hosted a traditional Blanket Exercise for all Faculty and staff guided by local Indigenous friends.

   - Supported HK student partnerships in activities to promote and support health and exercise in Indigenous communities (e.g., MOVEmber event open to Indigenous students from the GECDSB).

   - Established a VOICES of Excellence Scholarship valued at $1000 to support Black and/or Indigenous students entering Human Kinetics.

4. What do the TRC and University Principles documents suggest relevant to your course?

Truth and Reconciliation Commission's Calls to Action 87 to 91:

- 87. We call upon all levels of government, in collaboration with Aboriginal peoples, sports halls of fame, and other relevant organizations, to provide public education that tells the national story of Aboriginal athletes in history.
- 88. We call upon all levels of government to take action to ensure long-term Aboriginal athlete development and growth, and continued support for the North American Indigenous Games, including funding to host the games and for provincial and territorial team preparation and travel.
- 89. We call upon the federal government to amend the Physical Activity and Sport Act to support reconciliation by ensuring that policies to promote physical activity as a fundamental element of health and well-being, reduce barriers to sports participation, increase the pursuit of excellence in sport, and build capacity in the Canadian sport system, are inclusive of Aboriginal peoples.
- 90. We call upon the federal government to ensure that national sports policies, programs, and initiatives are inclusive of Aboriginal peoples, including, but not limited to, establishing:
    I. In collaboration with provincial and territorial governments, stable funding for, and access to, community sports programs that reflect the diverse cultures and traditional sporting activities of Aboriginal peoples.
    II. An elite athlete development program for Aboriginal athletes.
    III. Programs for coaches, trainers, and sports officials that are culturally relevant for Aboriginal peoples.
    IV. Anti-racism awareness and training programs.
- 91. We call upon the officials and host countries of international sporting events such as the Olympics, Pan Am, and Commonwealth games to ensure that Indigenous peoples' territorial protocols are respected, and local Indigenous communities are engaged in all aspects of planning and participating in such events.

5. What have other similar courses/programs done that might be relevant to your course/program?
   See #6 below.
6. In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?
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   POLS-1709 Introduction to Diaspora Studies: There's No Place Like Home

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   - KINE-2250 has included several Indigenous guest lecturers (e.g. lectures on Lacrosse as Medicine given by an Indigenous guest speaker) and made use of Nanadagikenim- Seek to Know Grants in guest speaker invitation and course preparation.
   - Several faculty have relied on literature searches for Indigenous-related content. For example,

- KINE-2300 has consulted the TRC website https://www.rcaanc-cirnac.gc.ca/eng/1524505883755/1557512006268 for the sport-/physical activity-related Calls to Action.
- KINE-2450 has collected and presented marketing-related examples of what sport organizations are doing to reach/leverage Indigenous communities.
- KINE-2500 has integrated examples from organizations such as the Aboriginal Sport Circle, the Aboriginal Sport and Wellness Council of Ontario, the Canada Games Council, and community level organizations that provide sport and recreation opportunities for the Indigenous community. Moreover, has relied mostly on sport industry reports, blogs, policy documents for insight into the organizational realities of organizations focused on Indigenous sport and in relation to the sport system as a whole.
- KINE-4610 has used literature review and consultation with medical and chronic disease management specialists.
- KINE-4900 has included local and out of town Indigenous lecturers for these courses, and consulted with the Aboriginal Education Centre to determine experiential learning opportunities, including in a sweat (sweat lodge) experience for students with a Knowledge Keeper, Indigenous speakers have discussed the Medicine Wheel, Healing Aspects of Cedar and they have discussed how Indigenous Medicine is part of collaborative health care at Windsor Regional Hospital.

9. Are you engaging in critical analysis of Settler Colonialism and/or Decolonization? Has Kinesiology done this yet? If not, always provide details as to why not.
   As a program, no.
   Within some courses, yes. For example, see KINE-2300 above.

A.2 Experiential Learning Categories

Does the proposed course revision include the addition or deletion of an experiential learning component? For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

☒ **No** - the revision(s) does (do) not include the addition or deletion of experiential learning component(s).

☐ **Yes** - the revision(s) include(s) the addition or deletion of experiential learning component(s). Check all that apply:

Experiential Learning Categories	**Addition**	**Deletion**
applied research	☐	☐
capstone	☐	☐
Clinic	☐	☐
co-op	☐	☐
community service learning	☐	☐
creative performance or exhibit (*for visual and performing arts*)	☐	☐
entrepreneurship	☐	☐
field experience or site visit	☐	☐
field work	☐	☐
industry/community consulting project	☐	☐
interactive simulations	☐	☐
internship – full-time	☐	☐
internship – part-time	☐	☐

professional practicum	☐	☐
research project	☐	☐
study abroad	☐	☐
Labs	☐	☐

B. Learning Outcomes for the Courses Listed Above

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows. Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.*** *Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.* ***Where there are changes to the learning outcomes, please clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.*** **COPY AND PASTE THE FOLLOWING ROW and TABLE, AND COMPLETE THEM FOR EACH COURSE LISTED ABOVE.**

COMPLETE THIS TABLE FOR EACH COURSE LISTED IN SECTION "A" ABOVE.	
COURSE NUMBER AND TITLE:	KINE 8040. Advanced Topics in the Psychology of Sport and Exercise (These are new learning outcomes)
SELECT ONE OF THE FOLLOWING:	
I. There are no official learning outcomes for the course in the PDC/Senate record. (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)	**_X___** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
II. There are changes to the course learning outcomes	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
III. It has been 5 years since learning outcomes for the course were last submitted to PDC/Senate. (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)	**____** Provide learning outcomes for the course by completing the Learning Outcomes Table below.
IV. Learning Outcomes have been reviewed in the past 5 years and no revisions are being proposed.	**____** Learning outcomes need not be submitted. PROVIDE DATE LAST REVIEWED BY PDC/SENATE then go to the next course: _____ (check CUMA database at: https://ctl2.uwindsor.ca/cuma/public/)

LEARNING OUTCOMES TABLE

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Synthesize major concepts and theories of sport and exercise psychology (Also applied to B, C, F).	A. the acquisition, application and integration of knowledge

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
Examine issues relating to sport and exercise psychology (Also applied to B, C, F, I)	
B. Critically evaluate foundational and contemporary sport and exercise psychology research (Also applies to C)	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Critique various aspect of sport and exercise psychology as they relate to performance (Also applies to A, B)	C. critical thinking and problem-solving skills
D. Communicate effectively in verbal and/or written formats, integrating relevant literature with their ideas (Also applies to F, H)	D. literacy and numeracy skills
E.	E. responsible behaviour to self, others and society
F. Coordinate and lead discussion on sport and exercise psychology issues. (Also applies to G)	F. interpersonal and communications skills
G.	G. teamwork, and personal and group leadership skills
H.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

University of Windsor
Program Development Committee

*5.13: **Physics - Summary of Minor Course and Calendar Changes (Form E)**

Item for: **Information**

Forwarded by: **Faculty of Science**

Form History *(Leave blank if there have been no changes. Changes can also be noted directly in the Workflow)*

Date of Modification	Approval Body Modifying	Reason for Modification

INSTRUCTIONS ARE PROVIDED IN SHADED AREAS. DO NOT WRITE IN SHADED AREAS.

ALL SECTIONS OF THIS FORM ***MUST*** BE COMPLETED. **LEARNING OUTCOMES MUST BE PROVIDED FOR LISTED COURSES WHERE**:

I. THERE ARE **NO OFFICIAL LEARNING OUTCOMES FOR THE COURSE** IN THE PDC/SENATE RECORD (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)

OR

II. THERE ARE **CHANGES TO THE COURSE LEARNING OUTCOMES**

OR

III. IT HAS **BEEN 5 YEARS SINCE LEARNING OUTCOMES FOR THE COURSE WERE LAST** SUBMITTED TO PDC/SENATE (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)

Confirmation of Consultation with AAUs That Will Be Affected, in Major Ways, by the Changes

AAU Consulted	AAU Head/Directors	Date Consulted	Supportive	
			Yes	No
Faculty of Engineering	Afsaneh Edrisy, Associate Dean - Academic	December 2022	X	

Please specify to which calendar *[Undergraduate or Graduate]* **the changes will be made. Include the effective date*** *[Fall, Winter, Spring, 20XX]***.** **(subject to timely and clear submission)* **These changes require no new resources.**	Undergraduate Fall, 2023

A. Proposed Course Calendar Revisions

Please provide the current and the proposed new course information by cutting and pasting from the current undergraduate or graduate online calendar (www.uwindsor.ca/secretariat/calendars) and clearly marking deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

For contact hour/laboratory requirement changes which do not always appear in the calendar, please type in the current information and clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

Example: **CHEM-1001. University Senates ~~– Role and Power~~** This course explores the history, role, and power of Senates in Canadian universities. ~~(Also offered as BIOC-1001.)~~ (Prerequisite: CHEM-1000.) ~~2 lecture hours and 1 tutorial hour per week~~ **3 lecture hours/week**

PHYS-1400. Introductory Physics I
First semester in a four-semester sequence in calculus-based introductory physics with an emphasis on mechanics. (Prerequisites: Grade 12"U" Advanced Functions and Introductory Calculus or equivalent. Recommended co-requisite: MATH-1720.) (3 lecture hours per week, 3 laboratory hours per week.) Open to students in **Engineering,** Human Kinetics, Forensic Science, Bachelor of Arts and Science, ~~,~~and all programs within in the Faculty of Science; exceptions only with the permission of the Head or designate. (Antirequisites: PHYS-1300, PHYS-1305.)]

A.1 Indigenous (First Nations, Métis, or Inuit) Content, Perspectives, or Material

The University of Windsor is committed to building and sustaining stronger, more meaningful inclusive partnerships with Indigenous students, scholars, and communities. Indigenization of curriculum takes place in a larger context, including a requirement to respond to the four Calls to Action in education of the Truth and Reconciliation Report (2015) (page 1), the unique legal requirements of the Constitution Act 1982 (Sections 25, 35), the provincial legal requirements of the Ontario Human Rights Code, 1990, and provincial legislation Bill Pr36 (1967).

In In revising this/these course(s), ***how*** *has consideration been given to incorporating Indigenous (First Nations, Métis, or Inuit) content, perspectives, or material into the curriculum?*

Please consider these prompt questions and additional Resources including disciplinary examples:

- *What* ***process*** *has your department/Faculty used to consider Indigenization?*
- ***How*** *have you considered the importance or relevance to the course/program?*
- *How has your department or faculty approached raising awareness for Indigenous knowledges in your area?*
- *What do the TRC and University Principles documents suggest relevant to your course?*
- *What have other similar courses/programs done that might be relevant to your course/program?*
- *In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?*
- *What is your awareness of the history or background to approaches you are considering, such as the land acknowledgement? How have you developed your awareness?*
- *Which literatures, sources, or Indigenous Knowledge Holders have you consulted? (Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)*
- *Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?*
- *Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?*

This course is a first-year, first semester introductory calculus-based physics course that is very closely modelled off the grade 12 Ontario physics curricula. As such, there is no inclusion of Indigenous knowledge specifically in the content. As well, the assessment formats of the course (multiple choice exams on bubble sheets and an online homework submission system, "Mastering Physics") are not at all conducive to the evaluation of that sort of knowledge transfer which is best assessed by reflection, discussion, and conversation.

Nonetheless, the Department of Physics is committed to including Indigenous content, perspectives and/or material in the curriculum wherever possible and appropriate, and sees the inclusion of this perspective at the programmatic level as an important mandate.

What process has your department/Faculty used to consider Indigenization?

The Physics Department has been thinking about how to Indigenize the curriculum since 2020. We started by consulting with the Indigenous Curriculum Coordinator, Jaimie Kechego, and examining the resources that she suggested to us. The Leddy librarians also provided us with resources that were available through the library. We have been looking at these resources to see how they may be integrated into the physics curriculum. We are also looking to examples from other Universities who have been along this path. As a first example, we developed PHYS-2040 History of Astronomy, in which we have incorporated Indigenous knowledge for 25% of the course. When the University develops a process for approaching Indigenous knowledge keepers or Elders from Nations in our geographical area, we plan to develop relationships that will help us to further deepen the Indigenization of the curriculum. We are also trying to support Indigenous students who are currently in the program. Drs. Xiao and Rangan are mentors in the Pathway to Graduate Studies program initiated by the Faculty of Science: https://www.uwindsor.ca/science/522/meet-researchers to support Indigenous students into graduate programs. Dr. Rangan has hired Indigenous students both to help with course development, as well as for undergraduate research.

How have you considered the importance or relevance to the course/program?

Physics being a natural science, Indigenous knowledge is of obvious relevance to the discipline/program. Our efforts and struggles are not with whether we should integrate Indigenous knowledge and ways of knowing, but how to do it in an authentic way. Our long-term goal is that all our students develop the capacity for "Two-Eyed Seeing" https://journals.sagepub.com/doi/full/10.1177/1609406918812346#

How has your department or faculty approached raising awareness for Indigenous knowledges in your area?

Several members of our department have been attending seminars and workshops on Indigenization and sharing their knowledge. For example, we co-sponsored the visit and seminars of a very well-known Indigenous astronomer and advertised these talks widely within our Department to all of the students and the faculty. Along with the specific visits and talks we sponsored financially, the Department has widely advertised and encouraged the participation of its students and faculty in the Canterbury ElderCollege Indigenous speaker series. The Principal of Canterbury is Dr. Gordon Drake who is a Physics professor and past Head of Physics. Therefore there is a very close relationship between Canterbury and Physics which facilitates this cooperation and communication. Dr. Rangan is currently taking the mini course "Pulling together: A Guide for Curriculum Developers" that is being offered by Jaimie Kachego.

At the national level, the Department continues to consult with the Outreach Committee of the Canadian Association of Physicists (CAP) that is tasked with increasing the content from under-represented communities in Canadian physics curricula. Every year, at least half of the faculty in the Department attends the CAP national congress and while there are always consulting and learning what the “best practices” are for inclusion of Indigenous knowledge in a Physics curriculum. Often times there are specific technical sessions at the annual Congress devoted to the discussion of this topic. As this is a national priority, these discussions can be fruitful and inform our practices within the Department. Several faculty have been and continue to be on the Board of Directors of the CAP where this is discussed at the national level. As well, all the Heads of the Physics Departments in Canada meet several times a year through the CAP Heads Committee, and the sharing of knowledge with regards to the inclusion of Indigenous knowledge is frequently on the agenda. Based on these national conversations, the Department is very aware of what similar programs have done in their approach to the inclusion of Indigenous knowledge in similar courses and aims to emulate those approaches when possible or practical.

What do the TRC and University Principles documents suggest relevant to your course?

The University Principles are a synthesis of the TRC recommendations in their call to action. https://www.univcan.ca/media-room/media-releases/universities-canada-principles-on-indigenous-education/

Some of the University principles are well-aligned to the practices in our department. We are committed to developing and offering opportunities for Indigenous students (UP1) both via the P2GS program, NSERC USRA terms, and undergraduate research assistantships. We are committed to offering a student-centered environment (UP2) by implementing strategies that support student success. We have just begun our journey on the other principles, and some of the best practices are we are developing are to include land acknowledgements in course syllabi to indicate the respect for Indigenous nations, and continuing to look at existing Indigenous resources that we can integrate into the curriculum.

What have other similar courses/programs done that might be relevant to your course/program?
Among physics departments in Canada, we are further ahead in the journey of Indigenizing the curriculum than most others. Most learning resources in Physics have been developed for elementary and high school. The First Nations University of Canada has started teaching introductory college-level physics courses with the inclusion of Indigenous content. The challenge is that the way that Physics is taught is reductionist and taught by abstraction (example, imagine there is no gravity, or imagine there is no friction), whereas Indigenous ways of knowing are holistic and integrated. Combining the two approaches will be very challenging and will be a long process. A further complication is that the introductory courses that we teach are offered to large classes, and financial constraints have necessitated the use of textbooks and online homework systems. No such resource exists for integrating Indigenous knowledge.

In what ways could your course/program have flexibility to include new ways of learning, or content for Indigenous approaches or knowledges?
We will have to approach Indigenous knowledge keepers and/or Elders to consult with them on this topic.

What is your awareness of the history or background to approaches
Several faculty members in the department are active in the Canadian Association of Physicists, where there are discussions between physics department leaders on how to Indigenize the curriculum, as discussed above.

Which literatures, sources, or Indigenous Knowledge Holders have you consulted?
The resources that we have been studying as part of the process are:
https://www.2eyedseeing.ca/about-5
Peltier, C. (2018). An Application of Two-Eyed Seeing: Indigenous Research Methods With Participatory Action Research. International Journal of Qualitative Methods, 17(1).
https://journals.sagepub.com/doi/10.1177/1609406918812346

Resources in:
https://decolonizinglight.com/

A concrete specific example of such consultation was evidenced in the development of our newly-developed “History of Astronomy” course, and our very-large enrollment first year astronomy courses. Within both these course we are adding Indigenous content and perspectives in the relevant places in the curriculum. Specifically, the Department of Physics financially supported the 2022 visit to the campus by a renowned Indigenous astronomer who visited the campus for two days to discuss in detail the inclusion of Indigenous knowledge in the study and practice of astronomy. During this visit, this colleague also visited specifically with our History of Astronomy instructors and provided helpful insights and advice concerning the inclusion of Indigenous perspectives in the astronomy curriculum. At the local level, during the development of the History of Astronomy course, the course developer consulted with the Aboriginal Coordinator in the Center for Teaching and Learning to ensure that this content is included in a respectful manner. This course now contains an entire section of the curriculum, approximately one-fourth on the Indigenous knowledge of the night sky. As with everyone else in the Faculty of Science, we are awaiting the appointment of an Indigenous knowledge-keeper within the Faculty who will consult with the Department on other approaches for inclusion within

the programs of the Department. This History of Astronomy course has already had approximately 200 students complete it, and has so far always been over-subscribed with an enrollment cap of around 100/semester. It has proven to be very popular and very successful. It is planned to be offered again in summer and fall of 2023.
(Please confirm you have permission to share any names, it may be helpful to have the person confirm the text if you will be submitting their name)

Are you engaging in critical analysis of Settler Colonialism and/or Decolonization?
Being from a scientific discipline, we do not have the training to engage in this type of analysis.

Have you included the information in the other relevant areas in the PDC form (such as learning outcomes) or in the course syllabus where appropriate?
At present, we do not know what to include in these sections. As we progress further along, we will make the relevant PDC changes.

A.2 Experiential Learning Categories

Does the proposed course revision include the addition or deletion of an experiential learning component? For definitions go to: https://www.uwindsor.ca/cces/1423/experiential-learning-definitions

☒ **No** - the revision(s) does (do) not include the addition or deletion of experiential learning component(s).

☐ **Yes** - the revision(s) include(s) the addition or deletion of experiential learning component(s). Check all that apply:

Experiential Learning Categories	**Addition**	**Deletion**
applied research	☐	☐
capstone	☐	☐
Clinic	☐	☐
co-op	☐	☐
community service learning	☐	☐
creative performance or exhibit (*for visual and performing arts*)	☐	☐
entrepreneurship	☐	☐
field experience or site visit	☐	☐
field work	☐	☐
industry/community consulting project	☐	☐
interactive simulations	☐	☐
internship – full-time	☐	☐
internship – part-time	☐	☐
professional practicum	☐	☐
research project	☐	☐
study abroad	☐	☐
Labs	☐	☐

B. Learning Outcomes for the Courses Listed Above

Please complete the following table. State the specific learning outcomes that make up the goal of the course (what will students know and be able to do at the end of this course?) and link the learning outcomes to the Characteristics of a University of Windsor Graduate outlined in "To Greater Heights" by listing them in the appropriate rows.

Please note that a learning outcome may link to more than one of the specified Characteristics of a University of Windsor Graduate, and that a single course might not touch on each of the Characteristics. ***If a specific learning outcome is not applicable for the course, please enter N/A or not applicable.***

Proposers are strongly encouraged to contact the Centre for Teaching and Learning for assistance with the articulation of learning outcomes.

Where there are changes to the learning outcomes, please clearly mark deletions with strikethrough (~~strikethrough~~) and additions/new information with bolding and underlining.

COPY AND PASTE THE FOLLOWING ROW and TABLE, AND COMPLETE THEM FOR EACH COURSE LISTED ABOVE.

COMPLETE THIS TABLE FOR EACH COURSE LISTED IN SECTION "A" ABOVE.	
COURSE NUMBER AND TITLE:	PHYS-1400. Introductory Physics I
SELECT ONE OF THE FOLLOWING:	
I. There are no official learning outcomes for the course in the PDC/Senate record. (check the CuMA database at https://ctl2.uwindsor.ca/cuma/public/)	____ Provide learning outcomes for the course by completing the Learning Outcomes Table below.
II. There are changes to the course learning outcomes	____ Provide learning outcomes for the course by completing the Learning Outcomes Table below.
III. It has been 5 years since learning outcomes for the course were last submitted to PDC/Senate. (check the CuMA database for the date of last submission at https://ctl2.uwindsor.ca/cuma/public/)	____ Provide learning outcomes for the course by completing the Learning Outcomes Table below.
IV. Learning Outcomes have been reviewed in the past 5 years and no revisions are being proposed.	**__X_** Learning outcomes need not be submitted. PROVIDE DATE LAST REVIEWED BY PDC/SENATE then go to the next course: **_____2/12/2021_____** (check CUMA database at: https://ctl2.uwindsor.ca/cuma/public/)

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Program Development Committee

***5.14 Kinesiology – Course Learning Outcomes (KINE-1110)**

Item for: Information

KINE 1110. Principles of Mental Skills Training *(These are new learning outcomes)*

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. Explain topics, theories, and concepts related to a specific area of sport psychology. (Also relevant to C) Describe research findings related to a specific area of sport psychology. Identify relevant academic and/or non-academic sources relating to current trends in sport psychology. (Also relevant to B, I)	A. the acquisition, application and integration of knowledge
B. Interpret sport psychology concepts. Interpret quantitative and qualitative findings in sport psychology literature. (Also relevant to D)	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. Analyze current issues and problems within the field of sport psychology.	C. critical thinking and problem-solving skills
D.	D. literacy and numeracy skills
E. Recognize the diversity of experiences in sport and exercise. (Also relevant to H)	E. responsible behaviour to self, others and society
F. Communicate sport psychology topics, theories, and concepts, in both oral and written formats. Display key issues in a specific area of sport psychology using a knowledge mobilization platform. (Also relevant to B)	F. interpersonal and communications skills
G. Work successfully and respectfully with peers, university personnel and community organizations, both independently and as a team member.	G. teamwork, and personal and group leadership skills
H. Apply innovative solutions to current issues in sport psychology.	H. creativity and aesthetic appreciation
I.	I. the ability and desire for continuous learning

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*5.15: **Kinesiology – Course Learning Outcomes (KINE-1110)**

Item for: **Information**

KINE 3030. Imagery Effects on Performance
(Note: Learning outcomes were last updated October 11, 2013. These are revised learning outcomes.)

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
A. **Critique topics, theories, and concepts related to imagery and performance. (Also relevant to B, C)** ~~Identify various domains in which imagery may have a beneficial effect on performance.~~ ~~Demonstrate knowledge of imagery use in various domains and how it can be beneficial to performance.~~	A. the acquisition, application and integration of knowledge
B. **Synthesize scholarly research related to a specific area of performance imagery. (Also relevant to A, D)** **Evaluate quantitative and qualitative research findings in sport, exercise, and performance imagery. (Also relevant to D)** ~~Critically review literature, draw on personal experience; and relate information to topics introduced in lecture.~~ ~~Demonstrate critical and reflective awareness of imagery and its effects on performance.~~	B. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
C. **Analyze current issues and trends within the field of performance imagery. (Also relevant to B)** ~~Relate and make connection between their sport/physical activity experiences and their personal use of imagery.~~ ~~Critique findings from studies examining the effect of imagery on performance.~~	C. critical thinking and problem-solving skills
D. ~~Examine, interpret and evaluate the results from academic studies examining the effects of imagery on performance.~~	D. literacy and numeracy skills
E. **Investigate the various uses of performance imagery in diverse populations. (Also relevant to H)** ~~Adhere to accepted principles of academic integrity.~~	E. responsible behaviour to self, others and society
F. **Report imagery concepts, theories, and topics in both oral and written formats. (Also relevant to B, F)**	F. interpersonal and communications skills

Course Learning Outcomes *This is a sentence completion exercise.* At the end of the course, the successful student will know and be able to:	**Characteristics of a University of Windsor Graduate** A U of Windsor graduate will have the ability to demonstrate:
~~Participate in critical discussion of readings during lecture.~~ ~~Communicate concepts related to beneficial effects of imagery, both verbally and in writing, and recognize how one may use imagery to benefit their own performance.~~	
G. **Collaborate with peers and community members with respect and an appreciation of different opinions (Also relevant to F)** ~~Demonstrate an understanding of the importance of their role as a kinesiologist in the transfer of knowledge to the general public.~~ ~~Work in small groups to further one's understanding of imagery on performance (applied interventions for a performer in any domain).~~	G. teamwork, and personal and group leadership skills
H. **Generate innovative solutions to current issues in performance imagery.** ~~Develop creative solutions to improving one's imagery to enhance performance.~~	H. creativity and aesthetic appreciation
I. ~~Demonstrate an understanding of the importance of mental skills (imagery) towards performance and recognize how imagery training could facilitate their own performance.~~	I. the ability and desire for continuous learning