FOR APPROVAL **PUBLIC** **OPEN SESSION**

TO: UTSC Academic Affairs Committee

SPONSOR: Dr. William A. Gough, Vice-Principal Academic and Dean
CONTACT INFO: 416-208-7027, vpdean.utsc@utoronto.ca

PRESENTER: Dr. Rene Harrison, Vice-Dean Graduate and Postdoctoral Studies

CONTACT INFO: 416-208-2978, vdgraduate.utsc@utoronto.ca

DATE: Wednesday February 8, 2023

AGENDA ITEM: **2**

ITEM IDENTIFICATION:

Minor Modifications: Graduate Curriculum Changes – Graduate Department of Physical and Environmental Sciences, UTSC

JURISDICTIONAL INFORMATION:

University of Toronto Scarborough Academic Affairs Committee (AAC) "is concerned with matters affecting the teaching, learning and research functions of the Campus" (*AAC Terms of Reference, Section 4*). Under section 5.6 of its terms of reference, the Committee is responsible for approval of "Major and minor modifications to existing degree programs." The AAC has responsibility for the approval of Major and Minor modifications to existing programs as defined by the University of Toronto Quality Assurance Process (*UTQAP, Section 3.1*).

GOVERNANCE PATH:

1. **UTSC Academic Affairs Committee [For Approval] (February 8, 2023)**

PREVIOUS ACTION TAKEN:

No previous action in governance has been taken on this item.

HIGHLIGHTS:

This package includes minor modifications to graduate curriculum, submitted by the Graduate Department of Physical and Environmental Sciences, which require governance approval. Minor modifications to curriculum are understood as those that do not have a significant impact on program or course learning outcomes. They require governance approval when they modestly change the nature of a program or course.

The following changes are being made:

- 2 new courses
    - EES1200HEnvironmental Science Research Experience
    - EES1201H Environmental Science: Approaches and Methods in Research
- 1 course change
    - EES1122H: Global Sustainability course title change

There has been wide consultation within the GDPES.

FINANCIAL IMPLICATIONS:

There are no net implications to the campus operating budget.

RECOMMENDATION:

Be It Resolved,

THAT the proposed Graduate Department of Physical and Environmental Sciences graduate curriculum changes for the 2023-24 academic year, as detailed in the respective curriculum report, be approved.

DOCUMENTATION PROVIDED:

1. 2023-24 Curriculum Cycle: Graduate Minor Curriculum Modifications for Approval Report: Graduate Department of Physical and Environmental Sciences, dated February 8, 2023.

2023-24 Curriculum Cycle
Graduate Minor Curriculum Modifications for Approval
Report: Graduate Department of Physical and Environmental Science
February 8, 2023

Physical & Environmental Science (UTSC), Graduate Department of

2 New Courses

EES1200H: Environmental Science Research Experience

Description:

This course is designed to facilitate student integration into the research process at the very start of M.Sc. Environmental Science studies. The course begins with an intensive workshop co-taught by current M.Sc. Environmental Science supervising faculty, focusing on experimental design, approaches to environmental science research and connection to important research resources. The summer term course continues with the integration of the student into their thesis supervisor's research group for the collection of data toward addressing a research question. Student success in summer research is supported through a direct supervisor-student research mentorship.

Prerequisites: Only students enrolled in the M.Sc. Environmental Science program are eligible to take this course.

Methods Assessment:

Workshop-related writing and feedback exercises
Maintenance of a research notebook
Supervisor-assessed skills testing
Production of a research poster and oral presentation

CNC Allowed: Y

Credit Value: 0.5

Topics Covered:

Through an intensive workshop (seminar format) and under the direct supervision of a student's supervising professor, the course will cover these specific topics:
The scientific method;
Generating research objectives and hypotheses;
Research approaches in environmental science, including field work, laboratory experimentation, and modelling;
Statistical approaches for analyzing environmental data;
Accuracy, precision and uncertainty in environmental research;
University resources for success in academic research;
Undertaking a specified research project with professor mentorship;
Research communication.

Rationale:

The new M.Sc. in Environmental Science program has as one of its central tenets that students integrate immediately into the research process. This course is intended to provide students with training to successfully integrate into a research program, through: 1) a rapid mechanism (e.g., workshop/seminar format) by which students new to graduate research learn the base skills required to carry out a small and specified research project; 2) an opportunity for hands-on, professor-mentored training in a specific environmental science research approach; and 3) integration into research through the undertaking of a small and specified research project. This course introductory course will be offered to students enrolment in May 2023.

Consultation:

Extensive consultation was undertaken with multiple cognate units across all campuses of the University of Toronto during the recent program proposal and approval process for the M.Sc. Environmental Science program.
DCC Approval: November 2021
Course Code Approval: September 2022

Resources:

Regular full-time faculty will teach this course, no additional resources are required. 50 TA hrs. for this course is required.
Budget Implications: The request has been made to the Dean's Office, and was approved on January 23, 2023.

Overlap with Existing Courses: There are no potential impacts on other units given that the course is specialized in this field of study.

EES1201H: Environmental Science: Approaches and Methods in Research

Description:

This course introduces major theories, concepts, methods, and intellectual and creative traditions within environmental science research. There is a particular focus in this course on the critical evaluation of existing knowledge, oral and written communication skills, teamwork, and the ethical and professional responsibilities of environmental scientists.

Prerequisites: Only students enrolled in the M.Sc. Environmental Science program are eligible to take this course.

Methods Assessment:

Student oral presentations
Student writing assignments
Research proposal major project

CNC Allowed: Y

Credit Value: 0.5

Topics Covered:

Through a weekly seminar, the course will cover these specific topics:
History of environmental science;
Major theories and processes in environmental science;
Ethical practice as a scientist;
Effective use of library resources;
How to effectively read and understand peer-reviewed articles;
Academic writing and the peer-review process;
Preparing effective research presentations;
How to plan a research study;
Writing an M.Sc. thesis.

Rationale:

This course is intended to be the primary cohort-building course for the new M.Sc. in Environmental Science program. This course is intended to enable a much deeper integration for students than can be provided via EES1200) into disciplinary norms, ethical practices and especially, effective literature research and communication skills. The course is also intended to provide students with knowledge about current trends in environmental research. This course introductory course will be offered to students enrolment in May 2023.

Consultation:

Extensive consultation was undertaken with multiple cognate units across all campuses of the University of Toronto during the recent program proposal and approval process for the M.Sc. Environmental Science program. No concerns were raised regarding the creation of two new graduate courses, including this course.
DCC Approval: November 2021
Course Code Approval: September 2022

Resources:
Regular full-time faculty will teach this course, no additional resources are required. 50 TA hrs. for this course is required.
Budget Implications: The request has been made to the Dean's Office, and was approved on January 23, 2023

Overlap with Existing Courses:
There are no potential impacts on other units given that the course is specialized toward this field of study.

1 Course Change

EES1122H: Global Sustainability

Title:
Previous: Global Environmental Security and Sustainable Development
New: Global Sustainability

Rationale: The course title is changing to better reflect the content covered in this course.

Consultation: DCC Approval: December 1, 2022

Resources: None.