Specializations

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Modelling & Data Analytics Specialization - Modelling and Data Analytics Specialization

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-18

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

For the 2025 cohort we “reimagined” our current specializations.

Continued discussions within the ENVE curriculum committee, with our students, and with other departments across the list have shown that the lists contain some errors and that there are other courses that would benefit our students.

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Department of Civil and Environmental Engineering

Faculty
Faculty of Engineering

Undergraduate Credential Type
Specialization

Program/Plan Name
Modelling and Data Analytics Specialization

Admissions

Specialization is available for students in the following majors

H-Environmental Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum average of 60.0% in the specialization courses.

Graduation Requirements

- Complete a minimum of five courses totaling 2.5 units or greater according to the requirements below.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
    - Complete a minimum of five courses totaling 2.5 units or greater according to the requirements below.
    - List 1
    - Complete 2 of the following:
    - AE585 - Air Quality Engineering and Impacts (0.50)
    - **ENVE383 - Hydrologic Modelling (0.50)**
    - ENVE573 - Contaminant Transport (0.50)
    - ENVE585 - Air Quality Engineering and Impacts (0.50)
    - List 2
    - Complete all of the following
    - **Complete 3 courses from any additional List 1 courses or from the list of courses below.**
    - Choose any of the following:
    - **AMATH362 - Mathematics of Climate Change (0.50)**
    - **Course Not Found**
    - **BIOL458 - Quantitative Ecology (0.50)**
    - CHE521 - Process Optimization (0.50)
    - CIVE422 - Finite Element Analysis (0.50)

- **EARTH456 - Numerical Methods in Hydrogeology (0.50)**
- MSE240 - Algorithms and Data Structures (0.50)
- MSE245 - Databases and Software Design (0.50)
- MSE332 - Deterministic Optimization Models and Methods (0.50)
- MSE446 - Introduction to Machine Learning (0.50)
- MSE452 - Decision Making Under Uncertainty (0.50)
- SYDE223 - Data Structures and Algorithms (0.50)
- SYDE252 - Linear Systems and Signals (0.50)
- SYDE334 - Applied Statistics (0.50)
- SYDE411 - Optimization and Numerical Methods (0.50)
- SYDE522 - Foundations of Artificial Intelligence (0.50)
- **SYDE535 - Computational Simulations for Societal and Environmental Systems (0.50)**
- ~~ENVE583 - Design of Urban Water Systems (0.50)~~
- ~~The remaining 3 courses can be from List 1 or 2.~~
- ~~SYDE599 - Special Topics in Systems Design Engineering (0.50)~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Additional Constraints

1. Special topics courses ENVE495 and ENVE497 may be eligible to count towards the specialization requirements depending on the course topic, and with approval from the Civil and Environmental Engineering Associate Chair, Undergraduate Studies.

Specializations

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Neural Engineering Specialization - Neural Engineering Specialization

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Fall 2024

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-26

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
Not Applicable,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

The neural engineering specialization has been revised due to the change in our overall program/degree requirements, where students now have 7 technical electives. The revisions to the specialization have been designed (1) to allow our students to more seamlessly engaged in the specialization (by removing the capstone requirement) and (2) to provide choice of electives that better represent the application areas of neural engineering.

(1) We have removed the capstone requirement: this constrained students in their capstone design project, a team-based project, making it difficult at times to scope problems and/or be able to claim they met the capstone requirement for the specialization. Additionnally, tracking this requirement was difficult and complicated the degree audit.

(2) Updated lists of elective to include electives related to modeling but also to the design of brain-computer interfaces.

The specialization was designed by a subgroup of the BME undergraduate program committee with expertise in the area.

Consultations (Departmental)

The revised specialization was approved by the BME undergraduate program committee and by the SYDE department.

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Department of Systems Design Engineering

Faculty
Faculty of Engineering

Undergraduate Credential Type
Specialization

Program/Plan Name
Neural Engineering Specialization

Admissions

Specialization is available for students in the following majors

H-Biomedical Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum average of 60.0% in the specialization courses.

Proposed

Graduation Requirements

- Complete a total of seven courses according to the requirements below.

Existing

Graduation Requirements

- Complete a total of five courses and one capstone or research project according to the requirements below.

Course Requirements (units)

Required Courses

- oUnits to Complete

- No Rules

1. Required Courses
    -
    - Complete all of the following
    - Complete all the following:
    - **BME393 - Digital Systems (0.50)**
    - **BME544 - Biomedical Measurement and Signal Processing (0.50)**
    -
    - Complete 2 of the following:
    - **BME540 - Fundamentals in Neural and Rehabilitation Engineering (0.50)**
    - **BME564 - Biocompatibility and Biomedical Design (0.50)**
    - SYDE552 - Computational Neuroscience (0.50)
    - SYDE556 - Simulating Neurobiological Systems (0.50)
    -
    - Complete 2 of the following:
    - BIOL376 - Cellular Neurophysiology (0.50)
    - KIN255 - Fundamentals of Neuroscience (0.50)
    - KIN301 - Human Anatomy of the Central Nervous System (0.50)
    - **KIN312 - Introduction to Neurological Disorders (0.50)**
    - **KIN356 - Sensory Systems Neuroscience (0.50)**
    - **KIN357 - Motor Learning and Neuroplasticity (0.50)**
    - KIN416 - Neuromuscular Integration (0.50)
    -
    - Complete 1 of the following:
    - AMATH382 - Computational Modelling of Cellular Systems (0.50)
    - AMATH451 - Introduction to Dynamical Systems (0.50)
    - BIOL382 - Computational Modelling of Cellular Systems (0.50)
    - **BME386 - The Physics of Medical Imaging (0.50)**
    - **Course Not Found**
    - BME499 - Elective Biomedical Research Project (0.50)
    - BME587 - Special Topics in Biomedical Signals (0.50)
    - **BME599 - Special Topics in Biomedical Engineering (0.50)**
    - **MTE325 - Microprocessor Systems and Interfacing for Mechatronics Engineering (0.50)**
    - **SYDE411 - Optimization and Numerical Methods (0.50)**
    - SYDE522 - Foundations of Artificial Intelligence (0.50)
    - SYDE572 - Introduction to Pattern Recognition (0.50)
    - ~~PHIL256 - Introduction to Cognitive Science (0.50)~~
    - ~~PSYCH256 - Introduction to Cognitive Science (0.50)~~
    - ~~PSYCH261 - Physiological Psychology (0.50)~~
    - ~~PSYCH307 - Human Neuropsychology (0.50)~~
    - ~~STAT441 - Statistical Learning - Classification (0.50)~~
    - ~~STAT444 - Statistical Learning - Advanced Regression (0.50)~~
    - ~~Complete 1 additional course from any list above~~
    - ~~Complete 1 of the following~~
    - ~~BME461 - Biomedical Engineering Design Workshop 2 (0.50)~~
    - ~~BME462 - Biomedical Engineering Design Workshop 3 (0.50)~~
    - ~~GENE403 - Interdisciplinary Design Project 1 (0.50)~~
    - ~~GENE404 - Interdisciplinary Design Project 2 (0.50)~~
    - ~~SYDE461 - Systems Design Capstone Project 1 (0.50)~~
    - ~~SYDE462 - Systems Design Capstone Project 2 (0.50)~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?	Cross-Listings Options	Removing Cross-Lists
Yes,	Some cross-listings not to be counted,	BIOL487 (CL with SYDE552) removed at Feb 2024 SUC.

Proposed

Additional Constraints

1. To have BME499, BME587, and BME599 count toward the Specialization, only certain topics are permitted. See the Biomedical Engineering Program Director for details.

Existing

Additional Constraints

1. No one course may fulfil more than one requirement within the Specialization.
2. The capstone project and research project must have a focus on neural engineering and be approved by the Specialization co-ordinator.

Specializations

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Pollution & Restoration Specialization - Pollution and Restoration Specialization

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-18

Quality Assurance Designation

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

For the 2025 cohort we “reimagined” our current specializations.

Continued discussions within the ENVE curriculum committee, with our students, and with other departments across the list have shown that the lists contain some errors and that there are other courses that would benefit our students.

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Department of Civil and Environmental Engineering

Faculty
Faculty of Engineering

Undergraduate Credential Type
Specialization

Program/Plan Name
Pollution and Restoration Specialization

Admissions

Specialization is available for students in the following majors

H-Environmental Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum average of 60.0% in the specialization courses.

Graduation Requirements

- Complete a minimum of five courses totaling 2.5 units or greater according to the requirements below.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
    -
    - Complete a minimum of five courses totaling 2.5 units or greater according to the requirements below.
    -
    - List 1
    -
    - **Complete 2 of the following:**
    - **Course Not Found**
    - **Course Not Found**
    - ENVE573 - Contaminant Transport (0.50)
    - ENVE577 - Engineering for Solid Waste Management (0.50)
    -
    - List 2
    -
    - **Complete all of the following**
    - **Complete 3 courses from any additional List 1 courses or from the list of courses below.**
    - **Choose any of the following:**
    - AE585 - Air Quality Engineering and Impacts (0.50)
    - BIOL462 - Applied Wetland Science (0.50)
    - **CHE571 - Industrial Ecology (0.50)**
    - CHE572 - Air Pollution Control (0.50)
    - CHE574 - Industrial Wastewater Pollution Control (0.50)
    - EARTH444 - Applied Wetland Science (0.50)
    - **EARTH458 - Physical Hydrogeology (0.50)**
    - **EARTH458L - Field Methods in Hydrogeology (0.25)**
    - EARTH459 - Chemical Hydrogeology (0.50)

- ENVE585 - Air Quality Engineering and Impacts (0.50)
- **ERS215 - Environmental and Sustainability Assessment 1 (0.50)**
- **ERS335 - Restoration Ecology (0.50)**
- **ERS337 - ReWilding and Ecological Restoration (0.50)**
- GEOG304 - Carbon in the Biosphere (0.50)
- ~~Complete all the following:~~
- ~~Complete 3 of the following:~~
- ~~BIOL470 - Methods of Aquatic Ecology (0.50)~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Proposed

Additional Constraints

1. Special topics courses ENVE495 and ENVE497 may be eligible to count towards the specialization requirements depending on the course topic, and with approval from the Civil and Environmental Engineering Associate Chair, Undergraduate Studies.
2. EARTH458 and EARTH458L must be taken together and count as one course towards the specialization requirements.

Existing

Additional Constraints

1. Special topics courses ENVE495 and ENVE497 may be eligible to count towards the specialization requirements depending on the course topic, and with approval from the Civil and Environmental Engineering Associate Chair, Undergraduate Studies.

Specializations

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

CIVE-Water Resources Specialization - Water Resources Specialization

Top

Effective Date and Career

Career
Proposed

Undergraduate,

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-10-16

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

Add ENVE 417/418/481 to elective list and move ENVE 383 from required list to elective.

- Env E 417, ENVE 418 and ENVE 481 are all new course that fit within the water resources specialization.
- Remove the 'Complete all of the following:" language for ENVE 383. This course is no longer essential for the others. I recommend following the structure of the ENVE- WR specialization so that all of the CIVE/ENVE courses are in one list.

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Department of Civil and Environmental Engineering

Faculty
Faculty of Engineering

Undergraduate Credential Type
Specialization

Program/Plan Name
Water Resources Specialization

Admissions

Specialization is available for students in the following majors

H-Civil Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum average of 60.0% in the specialization courses.

Graduation Requirements

- Complete a total of four courses according to the requirements below.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
   -
   - **Complete 4 of the following:**
   - BIOL462 - Applied Wetland Science (0.50)
   - CIVE583 - Design of Urban Water Systems (0.50)
   - EARTH444 - Applied Wetland Science (0.50)

- EARTH458 - Physical Hydrogeology (0.50)
- ENVE376 - Biological Processes (0.50)
- ENVE383 - Hydrologic Modelling (0.50)
- **Course Not Found**
- **Course Not Found**
- **ENVE481 - Open Channel Hydraulics (0.50)**
- ENVE573 - Contaminant Transport (0.50)
- ENVE583 - Design of Urban Water Systems (0.50)
- GEOG209 - Hydroclimatology (0.50)
- GEOG305 - Fluvial Geomorphology (0.50)
- GEOG371 - Advanced Remote Sensing Techniques (0.50)
- GEOG381 - Advanced Geographic Information Systems (0.50)
- GEOG453 - Urban Stormwater Management (0.50)
- PLAN381 - Advanced Geographic Information Systems (0.50)
- PLAN453 - Urban Stormwater Management (0.50)
- SYDE533 - Conflict Resolution (0.50)
- ~~Complete all of the following~~
- ~~Complete all the following:~~
- ~~Complete 3 of the following:~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Specializations

Undergraduate Plan Guidelines

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Artificial Intelligence Option - Artificial Intelligence Option

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Fall 2025

Proposal Details

Proposal Type
Change,

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
Not Applicable,

Creating or Changing Invalid Combinations
Yes,

Invalid Combinations Consultations

Consultation with BME - in agreeance that there is too much overlap with Biomedical Artificial Intelligence option.

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

There is significant overlap between the AI option and the Biomedical AI specialization, adding as invalid combination.

Two new courses have been created in ECE, 457D added to List 2, 407 added to List 3 (per Otman Basir, Option Coordinator).

One new course has been added to List 3, MSE 531 (per discussion between Ada Hurst & Otman Basir).

Adding CHE 523 to List 3 (per Otman Basir)

The option lists contain many courses in similar themes, which may be anti-requisites or cross-lists. The intent of the option is that students should take courses from a variety of areas and the new structure makes this clear. The new structure will also be beneficial to students and advisors, who have reported that it is difficult to plan what courses to take based on the current presentation.

Increasing declaration average requirement to attract students likely to succeed in the program (per Option Coordinator).

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Dean of Engineering Office

Faculty
Faculty of Engineering

Undergraduate Credential Type
Option

Program/Plan Name
Artificial Intelligence Option

Admissions

Option is available for students in the following degrees

Bachelor of Applied Science | Bachelor of Software Engineering

Admissions Entry Point
Declare Plan,

Declaration Requirements

Students must have a minimum cumulative average of 75.0% in order to declare this Option.

Requirements Information

Invalid Combinations
Yes,

Proposed

List of Invalid Combinations

Medical Artificial Intelligence Specialization

Artificial Intelligence Specialization

Artificial Intelligence Specialization

Existing

List of Invalid Combinations

Artificial Intelligence Specialization

Artificial Intelligence Specialization

Average Requirement

Minimum Average(s) Required

Yes,

- A minimum cumulative option average of 60.0%.

Graduation Requirements

- Complete a total of 3.0 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
   - **Complete a total of six courses**
   - List 1
   - Complete 1 of the following:
   - HIST212 - The Computing Society (0.50)
   - MSE442 - Impact of Information Systems on Organizations and Society (0.50)
   - STV205 - Cybernetics and Society (0.50)
   - STV208 - Artificial Intelligence and Society: Impact, Ethics, and Equity (0.50)
   - STV210 - The Computing Society (0.50)
   - STV302 - Information Technology and Society (0.50)
   - List 2
   - Complete all of the following
   - **Complete 2 courses from the following lists.**
   - Choose any of the following:
   - CS485 - Statistical and Computational Foundations of Machine Learning (0.50)
   - ECE457C - Reinforcement Learning (0.50)
   - MSE435 - Advanced Optimization Techniques (0.50)
   - **Complete no more than 1 from the following:**
   - **Course Not Found**
   - **Course Not Found**
   - CS480 - Introduction to Machine Learning (0.50)
   - CS486 - Introduction to Artificial Intelligence (0.50)
   - ECE457A - Co-operative and Adaptive Algorithms (0.50)
   - ECE457B - Fundamentals of Computational Intelligence (0.50)
   - MSE446 - Introduction to Machine Learning (0.50)
   - SYDE522 - Foundations of Artificial Intelligence (0.50)
   - **Complete no more than 1 from the following:**
   - AMATH449 - Neural Networks (0.50)
   - CS479 - Neural Networks (0.50)
   - **Course Not Found**
   - MSE546 - Advanced Machine Learning (0.50)
   - SYDE577 - Deep Learning (0.50)
   - List 3

-
- Complete all of the following
- Complete 3 additional courses from List 2 or List 3
- Choose any of the following:
- CHE521 - Process Optimization (0.50)
- CHE522 - Advanced Process Dynamics and Control (0.50)
- CHE524 - Process Control Laboratory (0.50)
- CO367 - Nonlinear Optimization (0.50)
- CO463 - Convex Optimization and Analysis (0.50)
- CO466 - Continuous Optimization (0.50)
- CS452 - Real-Time Programming (0.50)
- CS484 - Computational Vision (0.50)
- ECE423 - Embedded Computer Systems (0.50)
- ECE455 - Embedded Software (0.50)
- ECE486 - Robot Dynamics and Control (0.50)
- ECE488 - Multivariable Control Systems (0.50)
- ECE495 - Autonomous Vehicles (0.50)
- **MSE531 - Stochastic Processes and Decision Making (0.50)**
- MTE544 - Autonomous Mobile Robots (0.50)
- MTE546 - Multi-Sensor Data Fusion (0.50)
- STAT341 - Computational Statistics and Data Analysis (0.50)
- STAT440 - Computational Inference (0.50)
- STAT441 - Statistical Learning - Classification (0.50)
- STAT444 - Statistical Learning - Advanced Regression (0.50)
- SYDE556 - Simulating Neurobiological Systems (0.50)
- SYDE572 - Introduction to Pattern Recognition (0.50)
-
- **Complete no more than 1 from the following:**
- CO456 - Introduction to Game Theory (0.50)
- **Course Not Found**
-
- **Complete no more than 1 from the following:**
- ECE481 - Digital Control Systems (0.50)
- ECE484 - Digital Control Applications (0.50)
-
- **Complete no more than 1 from the following:**
- BIOL487 - Computational Neuroscience (0.50)
- SYDE552 - Computational Neuroscience (0.50)
- ~~Complete a total of 6 courses~~
- ~~Complete 2 of the following:~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Additional Constraints

1. At least one course must be from the Faculty of Mathematics and at least one course must be from the Faculty of Engineering. Exceptions to this rule may be granted by the option co-ordinator if it is logistically infeasible to be satisfied.
2. Five of the courses must be considered elective (that is, not required courses) in the student's major. For the purposes of this Option, a course that a student could choose to graduate without will be considered elective.

3. Special topics courses, independent project courses, and the capstone project courses may sometimes be appropriate for this Option, with approval of the Artificial Intelligence option co-ordinator and the course instructor.

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines
Yes,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Biomechanics Option - Biomechanics Option

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-11-28

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
Yes,

Invalid Combinations Consultations

FUGS approved invalid combination with renamed Biomechanics and Rehabilitation Specialization (BME) on November 28, 2025.

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

Engineering FUGS approved invalid combination with renamed Biomechanics and Rehabilitation Specialization (BME) on November 28, 2025.

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Dean of Engineering Office

Faculty
Faculty of Engineering

Undergraduate Credential Type
Option

Program/Plan Name
Biomechanics Option

Admissions

Option is available for students in the following degrees

Bachelor of Applied Science | Bachelor of Software Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Proposed

Invalid Combinations
Yes,

Existing

Invalid Combinations
No,

List of Invalid Combinations

Sports Engineering Specialization

Average Requirement

Yes,

Minimum Average(s) Required

- A minimum cumulative option average of 60.0%.

Graduation Requirements

- Complete a total of 3.5 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

Course Requirements (no units)

Required Courses

- Complete all of the following
- Complete 1 of the following:
  - BME588 - Special Topics in Biomechanics (0.50)
  - CIVE460 - Engineering Biomechanics (0.50)
  - ME574 - Engineering Biomechanics (0.50)
- Complete 1 of the following
  - Complete 1 of the following:
    - BIOL201 - Human Anatomy (0.50)
    - BIOL273 - Principles of Human Physiology 1 (0.50)
    - BME284 - Physiological and Biological Systems (0.50)
    - SYDE584 - Physiological Systems and Biomedical Design (0.50)
  - Complete all the following:
    - KIN100 - Regional Human Anatomy (0.50)
    - KIN100L - Regional Human Anatomy Laboratory (0.25)
- Complete 1 of the following
  - Complete 1 of the following:
    - KIN320 - Task Analysis (0.50)
    - KIN420 - Occupational Biomechanics (0.50)
    - SYDE162 - Human Factors in Design (0.50)
    - SYDE543 - Cognitive Ergonomics (0.50)
    - SYDE548 - User Centred Design Methods (0.50)
  - Complete all the following:
    - KIN121 - Biomechanics of Human Movement (0.50)
    - KIN121L - Biomechanics of Human Movement Laboratory (0.25)
- Complete 1 of the following:
  - CHE341 - Introduction to Process Control (0.50)
  - CIVE306 - Solid Mechanics 3 (0.50)
  - CIVE422 - Finite Element Analysis (0.50)
  - ECE380 - Analog Control Systems (0.50)
  - ECE486 - Robot Dynamics and Control (0.50)
  - ME322 - Mechanical Design 1 (0.50)
  - ME360 - Introduction to Control Systems (0.50)
  - ME423 - Mechanical Design 2 (0.50)
  - ME547 - Robot Manipulators: Kinematics, Dynamics, Control (0.50)
  - ME555 - Computer-Aided Design (0.50)
  - ME559 - Finite Element Methods (0.50)

        - ME566 - Computational Fluid Dynamics for Engineering Design (0.50)
        - MTE360 - Automatic Control Systems (0.50)
        - NE336 - Micro and Nanosystem Computer-Aided Design (0.50)
        - PHYS395 - Biophysics of Therapeutic Methods (0.50)
        - SYDE352 - Introduction to Control Systems (0.50)
        - SYDE543 - Cognitive Ergonomics (0.50)
        - SYDE544 - Biomedical Measurement and Signal Processing (0.50)
        - SYDE553 - Advanced Dynamics (0.50)
        - SYDE572 - Introduction to Pattern Recognition (0.50)
        - SYDE575 - Image Processing (0.50)
- Complete 1 of the following
    - Complete 1 of the following:
        - BME551 - Biomechanics of Human Movement (0.50)
        - KIN312 - Introduction to Neurological Disorders (0.50)
        - KIN340 - Musculoskeletal Injuries in Sport and Activity (0.50)
        - KIN356 - Sensory Systems Neuroscience (0.50)
        - KIN416 - Neuromuscular Integration (0.50)
        - KIN420 - Occupational Biomechanics (0.50)
        - KIN422 - Human Posture, Balance and Gait (0.50)
        - KIN425 - Biomechanical Modelling (0.50)
        - KIN472 - Directed Study in Special Topics (0.50)
    - Complete all the following:
        - KIN221 - Advanced Biomechanics of Human Movement (0.50)
        - KIN221L - Advanced Biomechanics of Human Movement Laboratory (0.25)
    - Complete all the following:
        - KIN255 - Fundamentals of Neuroscience (0.50)
        - KIN255L - Fundamentals of Neuroscience Laboratory (0.25)
- Complete 1 of the following
    - Complete all the following:
        - CHE482 - Group Design Project (0.50)
        - CHE483 - Group Design Project and Symposium (0.50)
    - Complete all the following:
        - CIVE400 - Civil Engineering Design Project 1 (0.50)
        - CIVE401 - Civil Engineering Design Project 2 (0.50)
    - Complete all the following:
        - ECE498A - Engineering Design Project (0.50)
        - ECE498B - Engineering Design Project (0.50)
    - Complete all the following:
        - ENVE400 - Environmental Engineering Design Project 1 (0.50)
        - ENVE401 - Environmental Engineering Design Project 2 (0.50)
    - Complete all the following:
        - GENE403 - Interdisciplinary Design Project 1 (0.50)
        - GENE404 - Interdisciplinary Design Project 2 (0.50)
    - Complete all the following:
        - ME481 - Mechanical Engineering Design Project 1 (0.50)
        - ME482 - Mechanical Engineering Design Project 2 (0.50)
    - Complete all the following:
        - MTE481 - Mechatronics Engineering Design Project (0.50)
        - MTE482 - Mechatronics Engineering Project (0.50)
    - Complete all the following:
        - NE408 - Nanosystems Design Project (0.50)
        - NE409 - Nanosystems Design Project and Symposium (0.50)
    - Complete all the following:
        - SYDE461 - Systems Design Capstone Project 1 (0.50)
        - SYDE462 - Systems Design Capstone Project 2 (0.50)

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Additional Constraints

1. To use BME588 towards this Option, the topic title must be "Introductory Mechanics of Biomedical and Biological Materials".
2. KIN420 may count only towards one requirement.
3. The two-term project topic must be in the area of biomechanics and students are encouraged to have their projects supervised or co-supervised by a faculty member outside of their home department.
4. One course must be considered "extra" to your degree. Contact the Option co-ordinator for information on requirements and restrictions.

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines
Yes,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Entrepreneurship Option - Entrepreneurship Option

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-04-15

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
No,

Creating or Changing Invalid Combinations
Yes,

Invalid Combinations Consultations

New Diploma created by Conrad School (same unit)

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

A new diploma was created, need to update invalid combinations

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Dean of Engineering Office

Faculty
Faculty of Engineering

Undergraduate Credential Type
Option

Program/Plan Name
Entrepreneurship Option

Admissions

Option is available for students in the following degrees

Bachelor of Applied Science | Bachelor of Software Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Proposed

Invalid Combinations
Yes,

List of Invalid Combinations

Diploma in Business and Entrepreneurship

Existing

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative option average of 60.0%.

Graduation Requirements

- Complete a total of 3.0 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

Course Requirements (no units)

Required Courses

- Complete all of the following
- Complete all the following:
  - BET100 - Foundations of Entrepreneurial Practice (0.50)
  - BET320 - Entrepreneurial Strategy (0.50)
  - BET340 - Essentials of Entrepreneurial Planning and Execution (0.50)
- Complete at least 1 additional BET course
- Complete up to 2 additional BET courses, or courses in an area related to an entrepreneurial endeavor or entrepreneurship, as approved by the Conrad associate director, undergraduate studies

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?
No,

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines
Yes,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Management Science Option - Management Science Option

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-03-03

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
Yes,

Impact on Existing Students

Students currently completing their engineering studies can take advantage of the additional elective courses added to the option

Is the credential name changing?

No,

Co-operative System of Study and Requirements

Not Applicable,

Creating or Changing Invalid Combinations

No,

Change to Learning Outcomes

No,

Rationale and Background for Change(s)

The proposal adds two new electives to the MSCI option on the recommendation of the coordinator of the Management Science Option. The courses are deemed to fit within the theme of the option.

- SYDE 535 - Computational Simulations for Societal and Environmental Systems
- CHE 523 - Introduction to Machine Learning and Data Science in Chemical Engineering
- BME 522 - (Cross-listed with SYDE 522)

The proposal also removes ECON 201 and adds ECON 101 as alternatives to MSE 263. This is directly related to another proposal, which establishes that ECON 201 is not an anti-requisite of MSE 263 (but ECON 101 still is)

Consultations (Departmental)

Consulted with SYDE, CHE, and Economics department. No issues were raised.

General Program/Plan Information

Faculty **Academic Unit**

Faculty of Engineering

Department of Management Science and Engineering

Faculty
Faculty of Engineering

Undergraduate Credential Type
Option

Program/Plan Name
Management Science Option

Admissions

Option is available for students in the following degrees

Bachelor of Applied Science

Bachelor of Software Engineering

Admissions Entry Point
Declare Plan,

Declaration Requirements

- Before requesting admission to this academic plan, see invalid credential combinations.

Requirements Information

Invalid Combinations

Yes,

List of Invalid Combinations

Management Engineering (Bachelor of Applied Science - Honours)

Average Requirement

Yes,

Minimum Average(s) Required

- A minimum cumulative option average of 60.0%.

Graduation Requirements

- Complete a total of 3.0 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
    -
    - Complete all of the following
    - Complete 1 of the following:
    - MSE211 - Organizational Behaviour (0.50)
    - MSE311 - Organizational Design and Technology (0.50)
    - PSYCH238 - Organizational Psychology (0.50)
    -
    - Complete 1 of the following:
    - BME411 - Optimization and Numerical Methods (0.50)
    - CHE521 - Process Optimization (0.50)
    - CIVE332 - Civil Systems and Project Management (0.50)
    - CO250 - Introduction to Optimization (0.50)
    - ENVE335 - Decision Making for Environmental Engineers (0.50)
    - MSE331 - Introduction to Optimization (0.50)
    - SYDE411 - Optimization and Numerical Methods (0.50)
    -
    - Complete all of the following
    - Complete 4 courses from the following lists.
    - Choose any of the following:
    - CIVE343 - Traffic Simulation Modelling and Applications (0.50)
    - ECON371 - Business Finance 1 (0.50)
    - HRM200 - Basic Human Resources Management (0.50)
    - MSE311 - Organizational Design and Technology (0.50)
    - MSE332 - Deterministic Optimization Models and Methods (0.50)

- MSE343 - Human-Computer Interaction (0.50)
- MSE422 - Economic Impact of Technological Change and Entrepreneurship (0.50)
- MSE431 - Stochastic Models and Methods (0.50)
- MSE432 - Production and Service Operations Management (0.50)
- MSE433 - Applications of Management Engineering (0.50)
- MSE435 - Advanced Optimization Techniques (0.50)
- MSE442 - Impact of Information Systems on Organizations and Society (0.50)
- MSE452 - Decision Making Under Uncertainty (0.50)
- MSE454 - Technical Entrepreneurship (0.50)
- MSE531 - Stochastic Processes and Decision Making (0.50)
- MSE541 - Search Engines (0.50)
- MSE543 - Analytics and User Experience (0.50)
- MSE546 - Advanced Machine Learning (0.50)
- MSE551 - Quality Management and Control (0.50)
- MSE555 - Scheduling: Theory and Practice (0.50)
- MSE597 - Complementary Studies Topics in Management Science and Engineering (0.50)
- MSE598 - Special Topics in Management Engineering (0.50)
- SYDE531 - Design Optimization Under Probabilistic Uncertainty (0.50)
- SYDE533 - Conflict Resolution (0.50)
- **SYDE535 - Computational Simulations for Societal and Environmental Systems (0.50)**
-
- Complete no more than 1 from the following:
- AE392 - Economics and Life Cycle Cost Analysis (0.50)
- BME364 - Engineering Biomedical Economics (0.50)
- CIVE392 - Economics and Life Cycle Cost Analysis (0.50)
- ENVE392 - Economics and Life Cycle Cost Analysis (0.50)
- GEOE392 - Economics and Life Cycle Cost Analysis (0.50)
- MSE261 - Engineering Economics: Financial Management for Engineers (0.50)
- SYDE262 - Engineering Economics of Design (0.50)
-
- Complete no more than 1 from the following:
- BET450 - Leadership (0.50)
- MSE411 - Leadership and Influence (0.50)
-
- Complete no more than 1 from the following:
- **Course Not Found**
- **Course Not Found**
- CS480 - Introduction to Machine Learning (0.50)
- ECE457B - Fundamentals of Computational Intelligence (0.50)
- MSE446 - Introduction to Machine Learning (0.50)
- SYDE522 - Foundations of Artificial Intelligence (0.50)
-
- Complete no more than 1 from the following:
- **ECON101 - Introduction to Microeconomics (0.50)**
- MSE263 - Managerial Economics (0.50)
-
- Complete no more than 1 from the following:
- MSE211 - Organizational Behaviour (0.50)
- PSYCH238 - Organizational Psychology (0.50)
- ~~ECON201 - Microeconomic Theory for Business and Policy (0.50)~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

No,

Additional Constraints

1. At least three courses must be MSE-labelled courses.
2. A maximum of one course from outside the approved list may be counted towards the Option, subject to approval of the option co-ordinator.
3. Students may take both MSE211 and MSE311; each course may only be used towards one requirement.

Notes

- For further information about the Management Science Option, contact the option co-ordinator in the Management Science and Engineering Department.

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines

Yes,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Statistics Option - Statistics Option

Top

Effective Date and Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-19

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
No,

Is the credential name changing?
No,

Co-operative System of Study and Requirements
Not Applicable,

Creating or Changing Invalid Combinations
No,

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

The proposal adds MSE 531 - Stochastic Processes and Decision Making to the 5th list of courses. The course is deemed to fit within the theme of the option.

RO dependency work: Removing CHE425 (retired at Dec 2025 SUC meeting).

Consultations (Departmental)

Riley Metzger approved (Statistics option coordinator)

General Program/Plan Information

Faculty

Faculty of Engineering

Academic Unit

Dean of Engineering Office

Faculty
Faculty of Engineering

Undergraduate Credential Type
Option

Program/Plan Name
Statistics Option

Admissions

Option is available for students in the following degrees

Bachelor of Applied Science | Bachelor of Software Engineering

Admissions Entry Point
Declare Plan,

Requirements Information

Invalid Combinations
No,

Average Requirement
Yes,

Minimum Average(s) Required

- A minimum cumulative option average of 60.0%.

Graduation Requirements

- Complete a total of 3.5 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
    -
    - Complete all of the following
    - Complete all the following:
    - STAT435 - Statistical Methods for Process Improvements (0.50)
    -
    - Complete 1 of the following:
    - CHE220 - Process Data Analysis (0.50)
    - CIVE224 - Probability and Statistics (0.50)
    - ENVE224 - Probability and Statistics (0.50)
    - GEOE224 - Probability and Statistics (0.50)
    - ME202 - Statistics for Engineers (0.50)
    - MSE251 - Probability and Statistics 1 (0.50)
    - MTE201 - Experimental Measurement and Statistical Analysis (0.50)
    - NE215 - Probability and Statistics (0.50)
    - STAT231 - Statistics (0.50)
    - SYDE212 - Probability and Statistics (0.50)
    -
    - Complete 1 of the following:
    - CHE225 - Strategies for Process Improvement and Product Development (0.50)
    - MSE253 - Probability and Statistics 2 (0.50)
    - STAT332 - Sampling and Experimental Design (0.50)
    -
    - Complete 1 of the following:
    - STAT331 - Applied Linear Models (0.50)
    - SYDE334 - Applied Statistics (0.50)
    -
    - Complete 3 of the following:
    - CHE341 - Introduction to Process Control (0.50)
    - CHE522 - Advanced Process Dynamics and Control (0.50)
    - CHE524 - Process Control Laboratory (0.50)
    - CIVE343 - Traffic Simulation Modelling and Applications (0.50)
    - CIVE375 - Environmental Engineering Principles (0.50)
    - CIVE440 - Transit Planning and Operations (0.50)

- ENVE573 - Contaminant Transport (0.50)
- ME340 - Manufacturing Processes (0.50)
- MSE431 - Stochastic Models and Methods (0.50)
- MSE432 - Production and Service Operations Management (0.50)
- MSE452 - Decision Making Under Uncertainty (0.50)
- **MSE531 - Stochastic Processes and Decision Making (0.50)**
- PLAN478 - Transit Planning and Operations (0.50)
- STAT230 - Probability (0.50)
- STAT333 - Stochastic Processes 1 (0.50)
- STAT430 - Experimental Design (0.50)
- STAT431 - Generalized Linear Models and their Applications (0.50)
- STAT433 - Stochastic Processes 2 (0.50)
- STAT443 - Forecasting (0.50)
- SYDE531 - Design Optimization Under Probabilistic Uncertainty (0.50)
- SYDE533 - Conflict Resolution (0.50)
- SYDE572 - Introduction to Pattern Recognition (0.50)
- ~~CHE425 - Strategies for Process Improvement and Product Development (0.50)~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?

Yes,

Cross-Listings Options

All cross-listings to be displayed,

Additional Constraints

1. Only one of MSE431 or SYDE531 may be taken.

Notes

- For further information, contact the option co-ordinator.

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines
Yes,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Entrepreneurship Minor - Entrepreneurship Minor

Top

Effective Date and Career

Career
Proposed

Undergraduate,

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-04-15

Quality Assurance Designation
Minor Modification Qad

Is there an impact to existing students?
Yes,

Impact on Existing Students

We are proposing to modify the current Minor requirements by adding a specific list of approved non-BET elective courses that can be counted toward the Minor, replacing the current requirement for students to obtain individual approval from the program Associate Director for courses outside of BET.

Impact on Current Students: The proposed changes will have a positive impact on students currently registered in the Minor in Entrepreneurship by providing greater clarity and streamlining the course selection process. Since the current process requires approval from the Associate Director of Undergraduate Programs at Conrad for all non-BET courses, students who have already received approval for specific courses will not be affected.

Is the credential name changing?
No,

Co-operative System of Study and Requirements
Not Applicable,

Creating or Changing Invalid Combinations
Yes,

Invalid Combinations Consultations

Adding invalid combination with BET diploma per FUGS approval (October 24th).

Change to Learning Outcomes
No,

Rationale and Background for Change(s)

The addition of an approved course list to the minor is intended to provide clarity, structure, and academic coherence to students pursuing the credential. Currently, the lack of defined course options can lead to confusion about which courses satisfy the requirements, results in inconsistent learning outcomes, and creates administrative challenges in verifying completion of the minor.

Adding invalid combination with BET diploma per FUGS approval (October 24th).

Consultations (Departmental)

The Undergraduate Advisor went through all courses offered at the University of Waterloo, highlighting any courses that touched on business management and/or entrepreneurship and related fields. The Undergraduate Committee at Conrad then reviewed these courses, selecting courses that complimented the Minor in Entrepreneurship and could be included as an elective for the Minor.

General Program/Plan Information

Faculty
Faculty of Engineering

Academic Unit
Dean of Engineering Office

Faculty
Faculty of Engineering

Undergraduate Credential Type
Minor

Program/Plan Name
Entrepreneurship Minor

Admissions

Admissions Entry Point
Declare Plan,

Declaration Audience
This credential is open to students enrolled in any degree program.

Declaration Requirements

- Before declaring this academic plan, see invalid credential combinations.

Requirements Information

Invalid Combinations
Yes,

Proposed

List of Invalid Combinations

Diploma in Business and Entrepreneurship

Entrepreneurial Mindset Specialization

Existing

List of Invalid Combinations

Entrepreneurial Mindset Specialization

Average Requirement

Yes,

Minimum Average(s) Required

- A minimum cumulative minor average of 65.0%.
- Students must receive a minimum grade of 60.0% in each course.

Graduation Requirements

- Complete a total of 4.0 units.

Course Requirements (units)

Required Courses

- 0Units to Complete
- No Rules

1. Required Courses
    -
    - Complete all of the following
    - Complete all the following:
    - BET100 - Foundations of Entrepreneurial Practice (0.50)
    - BET320 - Entrepreneurial Strategy (0.50)
    - BET340 - Essentials of Entrepreneurial Planning and Execution (0.50)
    -
    - **Complete 3 additional BET courses**
    - Complete all of the following
    - **Complete 2 courses from any additional BET courses or from the list of courses below.**
    - **Choose any of the following:**
    - **AFM101 - Introduction to Financial Accounting (0.50)**
    - **AFM131 - Introduction to Business in North America (0.50)**
    - **AFM274 - Introduction to Corporate Finance (0.50)**
    - **AFM333 - International Business (0.50)**
    - **AFM433 - Business Strategy (0.50)**
    - **AFM480 - Introduction to Organizational Behaviour (0.50)**
    - **ARBUS101 - Introduction to Business in North America (0.50)**
    - **ARBUS300 - Practical Business Skills (0.50)**
    - **ARBUS301 - International Business (0.50)**
    - **CFM401 - Topics in Financial Technology (0.50)**
    - **COMM400 - Entrepreneurship, Technology and the Emerging Information Economy (0.50)**
    - **DAC309 - User Experience Design (0.50)**
    - **ENBUS203 - Green Entrepreneurship (0.50)**
    - **ENBUS302 - Strategies for Environment and Business (0.50)**
    - **ENVS105 - Environmental Sustainability and Ethics (0.50)**
    - **ERS200 - Indigenous Sustainability Entrepreneurship (0.50)**
    - **ERS201 - Environmental Policy, Politics and Governance (0.50)**
    - **GBDA210 - Introduction to User Experience Design (0.50)**
    - **GBDA304 - Marketing in the Digital World (0.50)**
    - **INDENT200 - The Past, Present, and Future of Indigenous Entrepreneurship (0.50)**
    - **INDENT210 - Fundamentals of Indigenous Entrepreneurship (0.50)**
    - **INDENT302 - Creating an Online Business (0.50)**
    - **INDENT310 - Case Studies in Indigenous Venture Creation (0.50)**
    - **INDEV308 - Introduction to Social Entrepreneurship (0.50)**
    - **INNOV200 - Theory and Practice of Social Innovation and Impact (0.50)**

- **INNOV201 - Social Innovation for Global Impact (0.50)**
- **INNOV302 - Measuring and Evaluating Social Innovation for Impact (0.50)**
- **MSE211 - Organizational Behaviour (0.50)**
- **MSE411 - Leadership and Influence (0.50)**
- **MSE454 - Technical Entrepreneurship (0.50)**
- **REC218 - Social Entrepreneurship for Change (0.50)**
- **SCBUS122 - Management of Business Organizations (0.50)**
- **SCBUS225 - Organizational Behaviour in Scientific and Technical Workplaces (0.50)**
- ~~Complete at least 3 additional BET courses~~
- ~~Complete up to 2 additional BET courses, or courses at the 300- or 400-level in an area related to an entrepreneurial endeavor or entrepreneurship, as approved by the Conrad associate director, undergraduate studies~~

Course Lists

Required Courses

- No Rules

Are there cross-listed courses listed in requirements?
No,

Proposed

Additional Constraints

1. Exceptions to the requirements listed above require approval of the Associate Director, Conrad School of Entrepreneurship and Business.

Existing

Additional Constraints

Specializations

Undergraduate Plan Guidelines

Adherence to Academic Plan Guidelines
Yes,

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Engineering

Dependencies

Date 2026/01/14

Show Empty Fields

Meeting Information

Agenda Page TitleSUC - 2026-02 - Consent Agenda - Faculty of Environment

Career Level
Undergraduate,

Faculty/UnitFaculty of Environment

Date2026-02-04 **Time10:00am** **LocationNH3318**

Summary

Other Business

Information only:

1. **Calendar note added to the Knowledge Integration Honours and Knowledge Integration Minor plans, pausing admission.**
2. **GEM Curriculum review summary: Attachment: GEM Curriculum Proposal - UGSC.pptx**

Attachment(s)

- **GEM Curriculum Proposal - UGSC.pptx**

Course Proposals

Course Proposal Details

Retired:

- **GEOG215, GEOG300, GEOG302, GEOG309, GEOG316/PLAN351, GEOG336, GEOG357, GEOG405, GEOG409, GEOG414, GEOG415, GEOG418, GEOG436, GEOG459, GEOG483, GEOG484, PLAN387, GEOG/PLAN487: GEM curriculum review**
- **ERS265, ERS370, ERS373, ERS401, ERS406, ERS443, ERS473, GEOG392, INDEV275, INDEV474: courses either not offered in at least the last 5 years, or no longer required**
- **PLAN340, PLAN346: Last offering of courses has taken place, due to the implementation of the new curriculum (Fall 2024)**

New:

- **ENVS434: cross-listed with SYDE534**
- **ENVS459: New energy course, which will cover some content from the retired GEOG459 course**
- **ERS260: cross-listed with SDS260R**
- **GEOG287 (GDS), GEOG390, GEOG427: GEM curriculum review**
- **GEOG441: cross-listed with PLAN441**
- **GEOG445: cross-listed with PLAN445**

Change:

- **ENBUS405, ERS300: component**
- **ENVS131, GEOG225, INTEG120: description**
- **ENVS274, ENVS374: consent**
- **ENVS200: Antireq**
- **ERS102, ERS201, ERS202, ERS215, ERS340, ERS365, GEOG304, GEOG307, GEOG314, GEOG359, GEOG320, GEOG323, GEOG325, GEOG408, GEOG417, GEOG423, REC383: prerequisites**
- **ERS460, GEOG460: title, abbreviated title**
- **GEOG100: title, abbreviated title, description, components, prerequisite, anti-requisite**
- **GEOG101: title, abbreviated title, description, components, anti-requisite**
- **GEOG102: title, description**
- **GEOG181, GEOG187, GEOG271, GEOG281(PLAN281), GEOG471: change subject to GDS**
- **GEOG205, GEOG351, PLAN353: title, abbreviated title, and description**
- **GEOG202, GEOG311: title, abbreviated title, description, and prerequisite**
- **GEOG318: change subject to GDS, title, abbreviated title, and description**
- **GEOG326: renumber from GEOG203, prerequisites**
- **GEOG356, GEOG426: title, abbreviated title, and prerequisites**
- **GEOG371: change subject to GDS, title, and abbreviated title**
- **GEOG381: change subject to GDS, fix typo in course description**
- **GEOG387: change subject to GDS, title, abbreviated title, description, and antirequisite**
- **GEOG481: change subject to GDS, additional course fees**
- **GEOG490A: title, abbreviated title, description, consent, prerequisite, and note**
- **GEOG490B: description, consent, and prerequisite**
- **PLAN381: change cross listed course subject to GDS, fix typo in course description**
- **PLAN419: title change**
- **PLAN441: title, abbreviated title, description, cross-listing (GEOG441), prerequisites**
- **PLAN445: title, abbreviated title, cross-listing (GEOG445), prerequisites**
- **PLAN481: additional course fees**
- **SDS260R: add cross-listing with ERS260 (new)**
- **SYDE534: add cross-listing with ENVS434 (new)**

Courses: Retire

Code	Title	Type	Workflow Step
ERS 265	Water: Environmental History and Change	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 370	Corporate Sustainability: Issues and Prospects	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 373	Special Topics in Environment, Resources and Sustainability	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 401	Translational Ecology	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 406	Paths to Sustainability	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 443	Ecosystem Field Research	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 473	Special Topics in Environment, Resources and Sustainability	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 215	China: Diverse and Dynamic	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 300	Geomorphology and the Southern Ontario Environment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 302	Geographies of Work and Employment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 309	Physical Climatology	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 316	Multivariate Statistics	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 336	Space, Power, and Politics: Citizenship in a Changing World	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 357	River Management	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 392	International Field Research	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 405	Wetlands	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 409	Energy Balance Climatology	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 414	Climate Justice	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 415	Economy and Society Project	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 418	Cold Region Climates	Courses	SUC Subcommittee, SUC Curricular Subcommittee

GEOG 436	Feminist Economic Geography: Gender, Identities and Social Change	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 452	Climate Change and Environment Project	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 459	Energy and Sustainability	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 483	Civic Technology and Digital Infrastructures	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 484	Machine Learning in Geospatial Science	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 487	Management Issues in Geographic Information Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee
INDEV 275	Special Topics in International Development	Courses	SUC Subcommittee, SUC Curricular Subcommittee
INDEV 474	Special Topics in International Development	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 340	Canadian Environmental Policy and Politics	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 346	Advanced Tools for Planning: Public Participation and Mediation	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 351	Multivariate Statistics	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 387	Spatial Databases	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 487	Management Issues in Geographic Information Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Courses: New

Code	Title	Type	Workflow Step
ENVS 434	Electric Energy Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ENVS 459	Energy, Governance, and Sustainability	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 260	Ecology, Society, and Justice: Social Development and the Environment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 287	Geospatial Data Collection and Management	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 390	Research Methods and Design	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 427	Climate Change Solutions: Techniques and Applications	Courses	SUC Subcommittee, SUC Curricular Subcommittee

GEOG 441	Disability and Accessibility in the City	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 445	Gender and Queer Inclusive Environments	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Courses: Changes

Code	Title	Type	Workflow Step
ENBUS 405	Introduction to Life Cycle Assessment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ENVS 131	Communications for Environmental Professions	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ENVS 200	Field Ecology	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ENVS 274	Special Topics in Environment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ENVS 374	Special Topics in Environment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 102	At Home in the Universe	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 201	Environmental Policy, Politics and Governance	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 202	Natural Resources Ecology	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 215	Environmental and Sustainability Assessment 1	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 300	Social Ecological Systems Analysis	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 340	Ecosystem Assessment	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 365	Water Governance	Courses	SUC Subcommittee, SUC Curricular Subcommittee
ERS 460	Sustainable Food: Localizing Food Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 181	Designing Effective Maps	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 187	Geospatial Data Science	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 271	Earth from Space Using Remote Sensing	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 281	Introduction to Geographic Information Systems (GIS)	Courses	SUC Subcommittee, SUC Curricular Subcommittee

GDS 318	Spatial Statistical Analysis	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 371	Advanced Remote Sensing	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 381	Advanced Geographic Information Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 387	Artificial Intelligence in Geospatial Data Science	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 471	Remote Sensing Project	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GDS 481	Geographic Information Systems Project	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 100	Changing Human Environments and Introduction to Geography and Environmental Management	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 101	Changing Human Environments	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 102	Changing Physical Environments	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 202	Economy and Development: Spaces of Global Transformation	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 205	Landscape Dynamics	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 225	Global Environment and Health	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 304	Carbon in the Biosphere	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 307	Societal Adaptation to Climate Change	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 311	The Global Economy	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 314	Climate Services	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 320	The Cryosphere	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 323	Tourism Impacts - International Perspectives	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 325	Geographies of Health	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 326	Environment and Development in a Global Perspective	Courses	SUC Subcommittee, SUC Curricular Subcommittee

GEOG 351	Transportation, Mobility, and Sustainability	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 356	Natural Resources Management	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 359	Low Carbon Transition	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 408	Earth's Future Climates	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 417	Climate Change Communication	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 423	Sustainable Tourism	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 426	Development and Global Change: Worlds in Transition	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 460	Sustainable Food: Localizing Food Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 490A	Honours Thesis Proposal	Courses	SUC Subcommittee, SUC Curricular Subcommittee
GEOG 490B	Honours Thesis Completion	Courses	SUC Subcommittee, SUC Curricular Subcommittee
INTEG 120	The Art and Science of Learning	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 281	Introduction to Geographic Information Systems (GIS)	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 353	Spatial Statistical Analysis	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 381	Advanced Geographic Information Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 419	Climate Change and Community Planning	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 441	Disability and Accessibility in the City	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 445	Gender and Queer Inclusive Environments	Courses	SUC Subcommittee, SUC Curricular Subcommittee
PLAN 481	Geographic Information Systems Project	Courses	SUC Subcommittee, SUC Curricular Subcommittee
REC 383	Tourism Impacts - International Perspectives	Courses	SUC Subcommittee, SUC Curricular Subcommittee
SDS 260R	Ecology, Society, and Justice: Social Development and the Environment	Courses	SUC Subcommittee, SUC Curricular Subcommittee

SYDE 534	Electric Energy Systems	Courses	SUC Subcommittee, SUC Curricular Subcommittee

Programs & Plans Proposals

Programs & Plans Proposal Details

Minor Modifications: Program and plan changes are arranged by unit which administers that plan: AD UG, SEED, ERS, GEM, KI, SFM

- **All GEM plans: revisions align with curriculum review.**
- **All GEM Specializations: revised to align with curriculum review. Required units have been decreased and repetitive courses with the major removed.**
- **Geography and Environmental Minor: add additional course labels that can be used towards the minor course requirements.**
- **All other plan changes: housekeeping curriculum course changes (adds and drops)**

Programs & Plans: Retire No proposals have been added.

Programs & Plans: Major Modifications No proposals have been added.

Programs & Plans: Minor Modifications

Code	Title	Type	Workflow Step
Degree Reqs: BES	Bachelor of Environmental Studies Degree Requirements	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Ecological Restoration & Rehabilitation Diploma	Diploma in Ecological Restoration and Rehabilitation	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Environmental Assessment Diploma	Diploma in Environmental Assessment	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Excellence in Geographic Information Systems Diploma	Diploma of Excellence in Geographic Information Systems	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Future Cities Diploma	Diploma in Future Cities	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Parks Minor	Parks Minor	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Sustainability Diploma	Diploma in Sustainability	Programs	SUC Subcommittee, SUC Curricular Subcommittee

Urban Studies Minor	Urban Studies Minor	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Environment & Business	Environment and Business (Bachelor of Environmental Studies - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Environment, Resources & Sustainability	Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
JH-Environment, Resources & Sustainability	Environment, Resources and Sustainability (Joint Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
CEC-Aviation Specialization	Aviation Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
G-Aviation Specialization	Aviation Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GEM-Aviation Specialization	Aviation Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Geography & Aviation	Geography and Aviation (Bachelor of Environmental Studies - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
G-Climate Change & Environment Specialization	Climate Change Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GA-Climate Change & Environment Specialization	Climate Change Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GEM-Climate Change & Environment Specialization	Climate Change Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Climate & Environmental Change	Climate and Environmental Change (Bachelor of Sciences - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
G-Earth Systems Science Specialization	Earth Systems Science Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GA-Earth Systems Science Specialization	Earth Systems Science Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GEM-Earth Systems Science Specialization	Earth Systems Science Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee

CEC-Economy & Society Specialization	Economy and Development Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
G-Economy & Society Specialization	Economy and Development Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GA-Economy & Society Specialization	Economy and Development Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GEM-Economy & Society Specialization	Economy and Development Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Geography & Environmental Management	Geography and Environmental Management (Bachelor of Environmental Studies - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
JH-Geography & Environmental Management	Geography and Environmental Management (Joint Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
3G-Geography & Environmental Management	Geography and Environmental Management (Bachelor of Environmental Studies - Three-Year General)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Geography & Environmental Management Minor	Geography and Environmental Management Minor	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Geomatics	Geospatial Data Science (Bachelor of Environmental Studies - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
JH-Geomatics	Geospatial Data Science (Joint Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
CEC-Geomatics Specialization	Geographic Information Systems Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GA-Geomatics Specialization	Geographic Information Systems Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
GEM-Geomatics Specialization	Geographic Information Systems Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee
H-Knowledge Integration	Knowledge Integration (Bachelor of Knowledge Integration - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee
Science, Technology, & Society Specialization	Science, Technology, and Society Specialization	Programs	SUC Subcommittee, SUC Curricular Subcommittee

H-Sustainability & Financial Management	Sustainability and Financial Management (Bachelor of Sustainability and Financial Management - Honours)	Programs	SUC Subcommittee, SUC Curricular Subcommittee

Regulations Proposals

Regulations Proposal Details

Regulations: Retire No proposals have been added.

Regulations: New No proposals have been added.

Regulations: Changes No proposals have been added.

ERS 265 - Water: Environmental History and Change

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-05-01

Last Offering of Course

Retired Impact

Retired Impact Details

Winter 2020	Yes,	Less choice in course list. but has not been offered in 4 years, so likely little impact.

Rationale for Change

Course has not been offered in the last 5 years.

Related agenda proposals:

- Science, Technology, and Society Specialization (KI)

Consultations

Plans that have this course listed as an elective option: H BA and General BA - were notified September 17, 2025.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code	Number	Course Level
ERS	265	200

Title

Water: Environmental History and Change

Abbreviated Title

Undergraduate Communication

Water: Env History & Change

Requirement Identifier
No,

Description
This course explores issues of water management from ancient to recent history. Tensions related to water supply and demand, agriculture and urbanization, health and sanitation, gender and household access to water resources, urban water and wastewater infrastructure, trans-boundary politics, and water privatization debates are considered. Readings and detailed assessments of national and international cases from Europe, Western Asia, and North America are used as a basis for in-class discussion and research projects.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (no units)

- 3G-Gender & Social Justice - Gender and Social Justice (Bachelor of Arts - Three-Year General)
- 4G-Gender & Social Justice - Gender and Social Justice (Bachelor of Arts - Four-Year General) View Program
- H-Gender & Social Justice - Gender and Social Justice (Bachelor of Arts - Honours) View Program

View Program

Course Requirements (units)

- Science, Technology, & Society Specialization - Science, Technology, and Society Specialization

View Program

ERS 370 - Corporate Sustainability: Issues and Prospects

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-05-01

Last Offering of Course
Fall 2016

Retired Impact
Yes,

Retired Impact Details
Less choice in course list. but has not been offered in 9 years, so likely no impact.

Rationale for Change

Course has not been offered in over 5 years.

Related agenda proposals:

- Diploma in Sustainability

Consultations

Plans that have this course listed as an elective option: H Software Engineering, BASc, Env Eng (option), Sustainability Diploma - were notified September 17/25

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
370

Course Level
300

Title
Corporate Sustainability: Issues and Prospects

Abbreviated Title
Corp Sust: Issues & Prospects

Undergraduate Communication Requirement Identifier
No,

Description
A course that examines the ways in which sustainability issues and business operations have interacted, considering progressively 'greener' corporate responses and broader sustainability challenges.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2B or higher

Corequisites

No Rules

Antirequisites

Not open to students enrolled in H-Environment & Business

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (units)

- Sustainability Diploma - Diploma in Sustainability View Program

Course Requirements (no units)

- Environmental Engineering Option - Environmental Engineering Option View Program

Course Lists

- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours)
- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program

View Program

ERS 373 - Special Topics in Environment, Resources and Sustainability

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Offering Number
1

Existing

Effective Term and Year
Fall 2024

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-05-01

Last Offering of Course
Never offered

Retired Impact
No,

Rationale for Change

This course was added to the course catalogue effective date: 2014 but never offered. If a 300- level topic course is required, ENVS374 will be used.

Related agenda proposals: N/A

Consultations

Not applicable

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
373

Course Level
300

Title
Special Topics in Environment, Resources and Sustainability

Abbreviated Title
Topics: Env/Resources/Sust

Undergraduate Communication Requirement Identifier
No,

Description
Course content varies according to instructor availability and demand for specific topics in environment, resources and sustainability and may include field courses.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLectureOnlineTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
03

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Consent to Add
Instructor consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2B or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

ERS 401 - Translational Ecology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-07-01

Last Offering of Course
Winter 2025

Retired Impact
Yes,

Retired Impact Details
Students who are currently enrolled in H-ERS and JH-ERS have been contacted and will be following the new plans as outlined in this agenda, which remove ERS401 from the plan curriculum.

Rationale for Change

Was a core requirement for ERS students - this will be replaced by one elective senior ERS course.

Related agenda proposals:

- H-Environment, Resources and Sustainability
- JH-Environment, Resources and Sustainability

Consultations

School consensus to retire this core course.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
401

Course Level
400

Title
Translational Ecology

Abbreviated Title
Translational Ecology

Undergraduate Communication Requirement Identifier
No,

Description
Translational ecology analyses ecosystems in a manner that leads to better policies, decision-making, and action. It is where environmental sciences meet environmental policy and governance. Translational ecology further embraces how the arts, media, and culture can act upon what emerges from analysis of socioecological systems. ERS 401 will focus student efforts on action-based and innovative modules and projects that provide a path to students designing their short- and long-term careers.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureProject

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- ERS400 - Social-Ecological Approaches to Sustainability (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program
- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program

ERS 406 - Paths to Sustainability

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Offering Number
1

Fall 2023

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-05-01

Last Offering of Course
Winter 2016

Retired Impact
Yes,

Retired Impact Details
Less choice in course list but has not been offered in 9 years, so likely no impact.

Rationale for Change

Course not offered in the last 5 years.

Related agenda proposals:

- Science, Technology, and Society Specialization (KI)

Consultations

The Faculty that lists this course as an elective option: BASc - was notified September 17/25

Course Information

Faculty
Faculty of Environment

Academic Unit
School of Environment, Resources and Sustainability

Subject Code

Number

Course Level

ERS	406	400

Title
Paths to Sustainability

Abbreviated Title
Paths to Sustainability

Undergraduate Communication Requirement Identifier
No,

Description
Experiential and reflective course examines everyday significance of several 'metaphors we live by' both as citizens and as environmentalists. Examines links between language, worldview and sustainability by contrasting metaphors used in sustainability discourse, including ecological balance and health, ecosystem services, planetary boundaries, resilience and restoration.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program

Course Requirements (units)

- Science, Technology, & Society Specialization - Science, Technology, and Society Specialization View Program

ERS 443 - Ecosystem Field Research

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-05-01

Last Offering of Course
Never offered

Retired Impact
No,

Rationale for Change

Course added effective 2016 but never offered.

Related agenda proposals:

- Parks minor

Consultations

No applicable.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
443

Course Level
400

Title
Ecosystem Field Research

Abbreviated Title
Ecosystem Field Research

Undergraduate Communication Requirement Identifier
No,

Description
This field research course is designed to involve students in high-level intensive research on the function and/or structure of ecosystems as they change because of successional and human processes. Students will normally undertake an experimental approach to an ecosystem-based problem and evaluation outcomes of their experiment or long-term data sets. The course will be focused on one ecosystem per offering, e.g., marine, aquatic, terrestrial forest, mountain. It is expected that the course will be off-campus at a field station or protected area within North America but there may be opportunities to deliver it outside of North America. When offered, the syllabus will provide details on exact location.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLecture

Primary Component
Field Studies

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
Department consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed at least 1 of the following:
  - ENVS178 - Environmental Applications of Data Management and Statistics (0.50)
  - STAT202 - Introductory Statistics for Scientists (0.50)
- Must have completed at least 1 of the following:
  - BIOL150 - Organismal and Evolutionary Ecology (0.50)
  - BIOL251 - Fundamentals of Ecology (0.50)
  - ENVS200 - Field Ecology (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (units)

- Parks Minor - Parks Minor

View Program

ERS 473 - Special Topics in Environment, Resources and Sustainability

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-05-01

Last Offering of Course
Spring 2016

Retired Impact
No,

Rationale for Change

Course has not been offered in over 5 years.

Related agenda proposals: N/A

Course Information

Faculty
Faculty of Environment

Academic Unit
School of Environment, Resources and Sustainability

Subject Code

Number

Course Level

ERS	473	400

Title
Special Topics in Environment, Resources and Sustainability

Abbreviated Title
Topics: Env/Resources/Sust

Undergraduate Communication Requirement Identifier
No,

Description
Course content varies according to instructor availability and demand for specific topics in environment, resources and sustainability and may include field courses.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?	Total Completions Allowed	Allow Multiple Enrol in a Term
	03	

Yes,

Yes,

Enrolment Rules

Consent to Add
Instructor consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3B or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

GEOG 215 - China: Diverse and Dynamic

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Fall 2020

Retired Impact
Yes,

Retired Impact Details
Course is listed as one option among several. Students can still complete the program/plan without this course offering (it also hasn't been offered in five years).

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that have not been offered in several years and which we have no plans to offer in the near future. Since the course has not been offered in several years, and we no longer have capacity to offer this course in the future, we are retiring from the calendar.

Related agenda proposals:

- Urban Studies Minor

Consultations

Discussed with Culture and Language Studies so that they are aware of the changes. See email from Pia received on Sept 18 acknowledging retirement and not highlighting any concerns, as well as email from Robert Case on Sept 18 acknowledging that they have been duly informed.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
215

Course Level
200

Title
China: Diverse and Dynamic

Abbreviated Title
China: Diverse & Dynamic

Undergraduate Communication Requirement Identifier
No,

Description
Changing geographies of China are examined and explained. Patterns and processes of change will be systematically analyzed for topics such as the physical environment, resources, development policy, globalization, industrialization, urbanization, and regional development. Diverse cities and regions are compared and the integration of China into the global economy is explored.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components

Primary Component

Lecture	Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (units)

- Urban Studies Minor - Urban Studies Minor — View Program

Course Requirements (no units)

- East Asian Studies Diploma - Diploma in East Asian Studies — View Program
- East Asian Studies Minor - East Asian Studies Minor — View Program

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements — View Program

GEOG 300 - Geomorphology and the Southern Ontario Environment

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Offering Number
1

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Spring 2019

Retired Impact
Yes,

Retired Impact Details
No impact to students. Course has not been offered for several years. Course will be removed from specialization requirements going forward.

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that have not been offered in several years and which we have no plans to offer in the near future. Since the course has not been offered in several years, and we no longer have capacity to offer this course in the future, we are retiring from the calendar.

Related agenda proposals:

- H-Knowledge Integration
- G-Earth Systems Science Specialization
- GA-Earth Systems Science Specialization
- GEM-Earth Systems Science Specialization

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
300

Course Level
300

Title
Geomorphology and the Southern Ontario Environment

Abbreviated Title
Geomorphology & South ON Env

Undergraduate Communication Requirement Identifier
No,

Description
Study of the origin and evolution of landforms with emphasis on southern Ontario. Analysis of geomorphic processes. Study of human impact on geomorphological landscapes. The lectures will be supplemented by field trips and field work required for term projects.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed at least 1 of the following:
  - GEOG209 - Hydroclimatology (0.50)
  - GEOG305 - Fluvial Geomorphology (0.50)
- Students must be in level 2A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

GEOG 302 - Geographies of Work and Employment

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Fall 2025

Retired Impact
Yes,

Retired Impact Details
Course is included in a list with many options. Students will be able to take other courses in the list and still meet their degree requirements.

Rationale for Change

As part of an extensive curriculum review, our department is merging courses focused on economic geography around the "11" course code (GEOG311, GEOG411). We are retiring courses focused on economic geography that do not align with this numbering and will no longer be offered going forward.

Related proposal:

- CEC-Economy & Society Specialization
- G-Economy & Society Specialization
- GA-Economy & Society Specialization
- GEM-Economy & Society Specialization
- Urban Studies Minor
- GEOG311

Consultations

Emailed Jason Grove on Sept 24 to inform of retirement of course (for Bachelor of Applied Sciences impact).

Course Information

Faculty
Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
302

Course Level
300

Title
Geographies of Work and Employment

Abbreviated Title
Geog of Work & Employment

Undergraduate Communication Requirement Identifier
No,

Description
This course examines the spatial dimensions of work and employment, focusing not just on traditional spaces of work (e.g., the factory, the office), but also spaces of unpaid work in the home, forced work and slavery, migrant labour, and so on. Classes will include lecture content but emphasize student participation and discussion. Students will practice practical qualitative research skills by conducting semi-structured interviews.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureSeminar

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (units)

- Urban Studies Minor - Urban Studies Minor — View Program
- GEM-Economy & Society Specialization - Economy and Society Specialization — View Program
- G-Economy & Society Specialization - Economy and Society Specialization — View Program
- GA-Economy & Society Specialization - Economy and Society Specialization — View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization — View Program

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements — View Program

GEOG 309 - Physical Climatology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2026

Retired Impact
Yes,

Retired Impact Details
GEOG 309 will be replaced by AVIA 370 in the programs where

it is listed as a requirement (e.g., Aviation programs). AVIA 370 will be available to take the place of this course, if needed by any students.

Rationale for Change

As part of an extensive curriculum review, focused on both the needs of climate change students and Aviation students, it was decided that a new course focused on Aviation meteorology best suited both needs. Decided in collaboration with the Faculty of Science, GEOG309 is being retired to make room for this new Aviation meteorology course.

Any impacted students will be advised to petition to take AVIA370 as a replacement.

Related agenda proposals:

- H-Climate and Environmental Change
- H-Geography and Aviation
- CEC-Aviation Specialization
- G-Aviation Specialization
- GEM-Aviation Specialization
- G-Climate Change and Environment Specialization
- GA-Climate Change and Environment Specialization
- GEM-Climate Change and Environment Specialization
- G-Earth Systems Science Specialization
- GA-Earth Systems Science Specialization
- GEM-Earth Systems Science Specialization
- GEOG408

Consultations

Faculty of Science was consulted. Faculty of MATH consultation pending.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
309

Course Level
300

Title
Physical Climatology

Abbreviated Title
Physical Climatology

Undergraduate Communication Requirement Identifier
No,

Description
Principles of physical climatology with emphasis on regional and global change and variability. Topics include radiation and energy balances, general circulation patterns, synoptic development and micro-climatology.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete 1 of the following

- Must have completed at least 1 of the following:
  - EARTH121 - Introductory Earth Sciences (0.50)
  - GEOG102 - Global Environmental Systems: Processes and Change (0.50)
- Enrolled in H-Science & Aviation

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path

Faculty/AFIW Path(s) for Workflow

Committee approvals, Faculty of Environment

Dependencies

Prerequisites

- GEOG 418 - Cold Region Climates View Program
- GEOG 409 - Energy Balance Climatology View Program
- GEOG 408 - Earth's Future Climates View Program

Course Requirements (no units)

- H-Science & Aviation - Science and Aviation (Bachelor of Science - Honours) View Program

Course Requirements (units)

- H-Geography & Aviation - Geography and Aviation (Bachelor of Environmental Studies - Honours)
- G-Aviation Specialization - Aviation Specialization View Program View Program
- CEC-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- GEM-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program
- Climate & Sustainability Specialization - Climate and Sustainability Specialization View Program

GEOG 316 - Multivariate Statistics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Spring 2026

Retired Impact
Yes,

Retired Impact Details
Students have a choice to take either GEOG 316 or GEOG 318. GEOG 318 will be retained so students will be able to meet their degree requirements without this course. The course is being removed from specializations.

Rationale for Change

As part of an extensive curriculum review, and due to the retirements of four geomatics-focused faculty members, our department is revamping and streamlining our Geomatics (Geospatial Data Science courses). We are reducing the number of options available and streamlining around core required courses. GEOG316 is being retired, with some of the content moved into GEOG318, which will be retained.

GEOG484 is being retired as well, so will not impact the pre-req on that course.

PLAN351 cross-listed with GEOG316 is also being retired.

Related agenda proposals:

- H-Geomatics
- CEC-Aviation Specialization
- G-Aviation Specialization
- GEM-Aviation Specialization
- G-Climate Change and Environment Specialization
- GA-Climate Change and Environment Specialization
- GEM-Climate Change and Environment Specialization
- G-Earth Systems Science Specialization
- GA-Earth Systems Science Specialization
- GEM-Earth Systems Science Specialization
- CEC-Economy and Society Specialization
- G-Economy and Society Specialization
- GA-Economy and Society Specialization
- GEM-Economy and Society Specialization
- CEC-Geomatics Specialization
- GA-Geomatics Specialization
- GEM-Geomatics Specialization
- GEOG318
- PLAN351

Consultations

Consultations with Planning have occurred - Planning will retire their cross-listed course PLAN351.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
316

Course Level
300

Title
Multivariate Statistics

Abbreviated Title
Multivariate Statistics

Undergraduate Communication Requirement Identifier
No,

Description
The theory and application of multivariate statistics, with particular emphasis upon the use of the computer.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PLAN 351 - Multivariate Statistics

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- ENVS278 - Applied Statistics for Environmental Research (0.50)

Corequisites

No Rules

Antirequisites

Not open to students enrolled in a program offered by Faculty of Mathematics

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- GEOG 484 - Machine Learning in Geospatial Science

View Program

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- G-Aviation Specialization - Aviation Specialization View Program
- GEM-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- G-Economy & Society Specialization - Economy and Society Specialization View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- GEM-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- GA-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization View Program

Course Requirements (no units)

- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

GEOG 336 - Space, Power, and Politics: Citizenship in a Changing World

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Fall 2024

Retired Impact
Yes,

Retired Impact Details
The course is listed as one of several options that students can take to meet degree requirements. Retiring the course will not impact student ability to complete the program/ plan.

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that either a) have not been offered in several years or b) have low enrollments, and which we have no plans to offer in the near future. Further, we have reviewed opportunities to collaborate with other units in order to improve efficiencies in course offerings.

This course is being retired to make room for new cross-listed courses with Planning: GEOG441 and GEOG445.

Related agenda proposals:

- CEC-Economy & Society Specialization
- G-Economy & Society Specialization

- GA-Economy & Society Specialization
- GEM-Economy & Society Specialization

Consultations

Programs with courses using GEOG 336 as a degree requirement option have been notified.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
336

Course Level
300

Title
Space, Power, and Politics: Citizenship in a Changing World

Abbreviated Title
Space, Power & Politics

Undergraduate Communication Requirement Identifier
No,

Description
This course uses international case studies to examine how people interact with the state. These state-society relations include the experience of migrants, community volunteers, protesters, voters, environmental activists, and young people. Real world issues are incorporated throughout to understand how diverse groups of people create, debate, and contest the nation-state.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureSeminar

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - GEOG101 - Human Geographies: People, Space and Change (0.50)
- Students must be in level 3A

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Lists

- Peace & Conflict Studies Minor - Peace and Conflict Studies Minor View Program

Course Requirements (units)

- GEM-Economy & Society Specialization - Economy and Society Specialization View Program
- G-Economy & Society Specialization - Economy and Society Specialization View Program
- GA-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization View Program

Course Lists

- 4G-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Four-Year General)
- H-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Honours) View Program View Program
- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program
- 3G-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Three-Year General) View Program

GEOG 357 - River Management

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Fall 2024

Retired Impact
Yes,

Retired Impact Details
Course is included in a list with many options. Students will be able to take other courses in the list and still meet their degree requirements. Course is also being removed from our specialization requirements.

Rationale for Change

As part of an extensive curriculum review, our department is revamping and streamlining our courses. We are reducing the number of options available and streamlining around core required courses. GEOG357 is being retired due to overlap with another fluvial geomorphology course.

Related agenda proposals:

- G-Climate Change & Environment Specialization
- GA-Climate Change & Environment Specialization
- GEM-Climate Change & Environment Specialization

Consultations

ENG has been informed.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code

GEOG

Number

357

Course Level

300

Title

River Management

Abbreviated Title

River Management

Undergraduate Communication Requirement Identifier

No,

Description

Human society was born along the world's greatest rivers and we have depended on rivers for agriculture, drinking water, transportation, and recreation for millennia. However, we have also altered river form and function towards an 'unnatural' condition. This course analyzes the ways in which humans affect river systems, the physical and social mechanisms which complicate the relationship between humans and rivers, and how humans can restore rivers to a more natural state. This course also compares geomorphic, ecologic, and social functioning of rivers in pre- and post-alteration systems. The major theme of this course is navigating the delicate balance between allowing rivers to flow naturally and maintain ecologic functionality while simultaneously maintaining the river's ability to provide services of use to humans. What does human alteration of river systems mean for the current and future state of river ecology, morphology, and hydrology? Can we find a way for rivers to provide functionality that satisfies the needs of both society and nature? This course provides students with the background and tools to take on these and other essential questions and challenges.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

LectureSeminarTutorial

Primary Component

Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2B or higher

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in: GEOG374 (Topic 9: River Management)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Lists

- H-Architectural Engineering - Architectural Engineering (Bachelor of Applied Science - Honours)
- H-Civil Engineering - Civil Engineering (Bachelor of Applied Science - Honours) View Program

View Program

Course Requirements (no units)

- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

GEOG 392 - International Field Research

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Offering Number
1

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Over 5 years

Retired Impact
Yes,

Retired Impact Details
Students have the option to complete either GEOG 391 or GEOG 392, so they can meet the degree requirements without this course. Adding a new GEOG 390 course that students can take to meet this requirement, so can substitute, if need be.

Rationale for Change

After an extensive curriculum review, we are revamping the research methods training students receive in our four departmental programs. We are shifting the core research methods and design courses to the 300-level (previously occurred at the 200-level), and retiring our current research-focused 200-level and 300-level courses (retiring GEOG293 and GEOG294 2026, and GEOG391 2027).

This course has not been offered in several years and we have no plans to offer in the future. We have other course codes (GEOG430) that we can use if we decide to offer a field course in the future.
Related agenda proposals:

- JH-Geography and Environmental Management
- H-Geography and Environmental Management

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
392

Course Level
300

Title
International Field Research

Abbreviated Title
International Field Research

Undergraduate Communication Requirement Identifier
No,

Description
Field course in which research skills will be further developed. This course is taught at an international location, and includes integrated content and applications from all four specializations in Geography and Environmental Management.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesTutorial

Primary Component
Field Studies

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - ENVS278 - Applied Statistics for Environmental Research (0.50)
- Must have completed at least 1 of the following:
  - GEOG293 - Approaches to Research in Human Geography (0.50)
  - GEOG294 - Approaches to Research in Physical Geography (0.50)

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- GEOG391 - Field Research (0.50)

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Antirequisites

- GEOG 391 - Field Research View Program

Course Requirements (units)

- H-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- JH-Geography & Environmental Management - Geography and Environmental Management (Joint Honours) View Program

GEOG 405 - Wetlands

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and

Offering Number
1

Year
Fall 2024

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2026

Retired Impact
Yes,

Retired Impact Details
New course will be created (GEOG 402) to replace this one that is cross-listed with EARTH 444 and BIOL 462. New GEOG 402 will count in lieu of GEOG 405 in all programs that require GEOG 402.

Rationale for Change

After an extensive curriculum review, we are proposing changes to many of our core courses to streamline and scaffold learning throughout our course offerings. We are also aiming to reduce redundancies across course offerings and explore opportunities to collaborate with other units. Earth Sciences and Biology offer a popular Wetlands course (EARTH 444 cross-listed with BIOL 462) that was already an anti-requisite to GEOG 405.

To achieve a new cross listing with these existing courses, we are introducing a new course in place of GEOG405 (GEOG402) and retiring GEOG405.

Related proposals:

- BIOL462
- EARTH 444
- GEOG402

Consultations

None needed.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
405

Course Level
400

Title
Wetlands

Abbreviated Title
Wetlands

Undergraduate Communication Requirement Identifier
No,

Description
Basic concepts on the distribution, classification, development, hydrology, biogeochemistry, and ecology of wetlands with an emphasis on temperate and boreal/subarctic systems. Human impacts, restoration and reclamation of wetlands are considered with the view of wetlands as functional ecosystems.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Complete all of the following
    - Must have completed the following:
    - ENVS200 - Field Ecology (0.50)
    -
    - Must have completed at least 1 of the following:
    - EARTH123 - Introductory Hydrology (0.50)
    - GEOG209 - Hydroclimatology (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Antirequisites

- BIOL 462 - Applied Wetland Science View Program
- EARTH 444 - Applied Wetland Science View Program

Course Requirements (units)

- Ecological Restoration & Rehabilitation Diploma - Diploma in Ecological Restoration and Rehabilitation View Program

Course Lists

- Environmental Assessment Diploma - Diploma in Environmental Assessment View Program

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

GEOG 409 - Energy Balance Climatology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Offering Number
1

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2024

Retired Impact
Yes,

Retired Impact Details
Students have option to complete other courses to meet degree requirements.

Rationale for Change

As part of an extensive curriculum review, focused on both the needs of climate change students and Aviation students, it was decided that a new course focused on Aviation meteorology best suited both needs. GEOG409 is being retired to make room for this new Aviation meteorology course (AVIA370).

Related agenda proposals:

- H-Climate & Environmental Change
- G-Earth Systems Science Specialization
- GA-Earth Systems Science Specialization
- GEM-Earth Systems Science Specialization
- G-Climate Change & Environment Specialization
- GA-Climate Change & Environment Specialization
- GEM-Climate Change & Environment Specialization
- AVIA370

Consultations

ENG has been informed.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
409

Course Level
400

Title
Energy Balance Climatology

Abbreviated Title
Energy Balance Climatology

Undergraduate Communication Requirement Identifier
No,

Description
A field and lecture course including the radiation and energy balances of various surfaces, the principles of turbulent energy exchange, and the biotic response to the energy environment. These concepts will be illustrated through the collection and examination of field data. The student will be responsible for presentation of a seminar on an assigned topic as well as presentation of the results of research incorporating data collected at the University of Waterloo weather station.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureSeminarTutorial

Primary Component
Seminar

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- GEOG309 - Physical Climatology (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Lists

- H-Environmental Engineering - Environmental Engineering (Bachelor of Applied Science - Honours) View Program

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Lists

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

Course Requirements (no units)

- Energy & Climate Change Specialization - Energy and Climate Change Specialization View Program

GEOG 414 - Climate Justice

Top

Effective Date & Career

Career

Proposed

Offering Number

Undergraduate,	**Effective Term and Year** Fall 2026	1
	Existing	
	Effective Term and Year Fall 2025	

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2025

Retired Impact
No,

Rationale for Change

As part of an extensive curriculum review, it was determined that issues of climate justice are sufficiently integrated throughout all (or most) climate change-focused courses which reduced the need for the a course focused specifically on this issue. Further, due to reduced teaching capacity, we have no plans to offer this course in the future.

Related agenda proposals: N/A

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
414

Course Level
400

Title
Climate Justice

Abbreviated Title
Climate Justice

Undergraduate Communication Requirement Identifier
No,

Description
An exploration of the implications of climate change through a human rights lens and of related questions about who is responsible for climate change; how the burdens of mitigation, adaptation, and compensation should be distributed; and how to evaluate climate policies, programs, and technologies.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - GEOG207 - Climate Change Fundamentals (0.50)
- Students must be in level 3A

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

GEOG 415 - Economy and Society Project

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2026

Retired Impact
Yes,

Retired Impact Details
Students will have the option to shift into the new human-geography focused specializations that do not require this course, or to complete a thesis or the i-capstone course (focused on the HG topic) to complete this requirement.

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that either a) have not been offered in several years or b) have low enrollments, and which we have no plans to offer in the near

future.

We have also decided to remove capstone courses as a requirement for our specializations, so we no longer require a capstone course specifically for this specialization. Instead, students interested in completing a capstone will have the option of completing a faculty-level or i-capstone course.

Related agenda proposals:

- CEC-Economy and Society Specialization
- G-Economy and Society Specialization
- GA-Economy and Society Specialization
- GEM-Economy and Society Specialization

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
415

Course Level
400

Title
Economy and Society Project

Abbreviated Title
Economy & Society Project

Undergraduate Communication Requirement Identifier
No,

Description
Human geography concepts and techniques are applied to the study of a current economic or social issue facing a local, regional, or national jurisdiction.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
Project

Primary Component
Project

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed the following:
  - GEOG293 - Approaches to Research in Human Geography (0.50)
- Must have completed at least 1 of the following:

- GEOG202 - Geography of the Global Economy (0.50)
- GEOG203 - Environment and Development in a Global Perspective (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (units)

- GEM-Economy & Society Specialization - Economy and Society Specialization View Program
- G-Economy & Society Specialization - Economy and Society Specialization View Program
- GA-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization View Program

GEOG 418 - Cold Region Climates

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Never offered

Retired Impact
No,

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that have not been offered in several years and which we have no plans to offer in the near future. Since the course has not been offered in several years (it has never been offered at all, to my knowledge), and we no longer have capacity to offer this course in the future, we are retiring from the calendar.

Related agenda proposals:

- G-Earth Systems Science Specialization
- GA-Earth Systems Science Specialization
- GEM-Earth Systems Science Specialization

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
418

Course Level
400

Title
Cold Region Climates

Abbreviated Title
Cold Region Climates

Undergraduate Communication Requirement Identifier
No,

Description
This course provides a comprehensive overview of the Arctic climate system. A variety of topics are considered including: key components and processes of the energy and water budgets; the current state of the cryosphere; the relationship between the cryosphere and past variability; the role of the Arctic in the global climate system; and the prediction of future changes using global climate models. Various observational perspectives on the climate system, including conventional measurements, atmospheric reanalysis, and remote sensing are presented.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- GEOG309 - Physical Climatology (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

GEOG 436 - Feminist Economic Geography: Gender, Identities and Social Change

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Fall 2022

Retired Impact
Yes,

Retired Impact Details
The course is listed as one of several options that students can take to meet degree requirements. Retiring the course will not impact student ability to complete the program/ plan.

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that either a) have not been offered in several years or b) have low enrollments, and which we have no plans to offer in the near future. Further, we have reviewed opportunities to collaborate with other units in order to improve efficiencies in course offerings.

This course is being retired to make room for new cross-listed courses with Planning: GEOG441 and GEOG445.

Related agenda proposals:

- CEC-Economy & Society Specialization
- G-Economy & Society Specialization
- GA-Economy & Society Specialization
- GEM-Economy & Society Specialization
- GEOG441
- GEOG445

Consultations

Programs with courses using GEOG 336 as a degree requirement option have been notified.

Course Information

Faculty
Faculty of Environment

Academic Unit
Department of Geography and Environmental Management

Subject Code
GEOG

Number
436

Course Level
400

Title
Feminist Economic Geography: Gender, Identities and Social Change

Abbreviated Title
Feminist Economic Geography

Undergraduate Communication Requirement Identifier
No,

Description
Using a combination of lecture and seminar, this course examines feminist economic geography's framing of: (1) the gendered division of labour (2) (un)paid care work (3) how different embodied actors engage with the economy and (4) feminist critiques of capitalism and responses to economic crisis.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureSeminar

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed at least 1 of the following:

- GEOG202 - Geography of the Global Economy (0.50)
- GSJ222 - Gender Issues (0.50)
- INTEG221 - The Social Nature of Knowledge (0.50)
- PLAN233 - Social Planning and Community Development (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Lists

- Peace & Conflict Studies Minor - Peace and Conflict Studies Minor View Program

Course Requirements (units)

- GEM-Economy & Society Specialization - Economy and Society Specialization View Program
- G-Economy & Society Specialization - Economy and Society Specialization View Program
- GA-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization View Program

Course Lists

- 4G-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Four-Year General)
- H-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Honours) View Program View Program
- 3G-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Three-Year General) View Program

GEOG 452 - Climate Change and Environment Project

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2026

Retired Impact
Yes,

Retired Impact Details
Students will have the option to shift into the new human-geography focused specializations that do not require this course, or to complete a thesis or the i-capstone course (focused on the HG topic) to complete this requirement.

Rationale for Change

As part of an extensive curriculum review, our department has reviewed several courses that either a) have not been offered in several years or b) have low enrollments, and which we have no plans to offer in the near future.

We have also decided to remove capstone courses as a requirement for our specializations, so we no longer require a capstone course specifically for this specialization. Instead, students interested in completing a capstone will have the option of completing a faculty-level or i-capstone course.

This course is being retired to make room for a new course focused on Climate Change Solutions (GEOG427)

Related proposals:

- H-Climate and Environmental Change
- G-Climate Change and Environment Specialization
- GA-Climate Change and Environment Specialization
- GEM-Climate Change and Environment Specialization
- GEOG427

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
452

Course Level
400

Title
Climate Change and Environment Project

Abbreviated Title
Climate Change & Env Project

Undergraduate Communication Requirement Identifier
No,

Description
Concepts and techniques of resources management and institutional analysis are applied to the study of a current climate change or environmental management issue.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
Project

Primary Component
Project

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed at least 1 of the following:

- GEOG293 - Approaches to Research in Human Geography (0.50)
- GEOG294 - Approaches to Research in Physical Geography (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Lists

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

GEOG 459 - Energy and Sustainability

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Spring 2024

Retired Impact
Yes,

Retired Impact Details
The course is listed as one of several options that students can take to meet degree requirements. Retiring the course will not impact student ability to complete the program/ plan.

Rationale for Change

As part of an extensive curriculum review, our department is reviewing our capacity to offer courses and opportunities to streamline offerings in more efficient ways. Due to retirements and a lack of capacity to offer this course, it is being retired to make way for a new course (ENVS459) on a similar topic. The new version of the course will be open to all students in the Faculty.

Related agenda proposal:

- H-Climate and Environmental Change
- G-Climate Change & Environment Specialization
- GA-Climate Change & Environment Specialization
- GEM-Climate Change & Environment Specialization
- Environmental Assessment Diploma
- H-Environment and Business
- Sustainability Diploma
- ENVS469

Consultations

Consultations have taken place throughout the faculty and with the instructor who will be teaching the new ENVS 459 version of the course. ENG has been informed.

Course Information

Faculty

Academic Unit

Faculty of Environment

Department of Geography and Environmental Management

Subject Code
GEOG

Number
459

Course Level
400

Title
Energy and Sustainability

Abbreviated Title
Energy & Sustainability

Undergraduate Communication Requirement Identifier
No,

Description
Renewable and non-renewable energy supply systems are compared using economic and environmental measures. Consumption trends and conservation options are considered at the local and global level. Projects are used to demonstrate the economic and environmental challenges in the design of a sustainable energy system.

Units
1.00

Exceptions to Fees or Academic Progress Units
No,

Components
SeminarTutorial

Primary Component
Seminar

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Lists

- H-Environment & Business - Environment and Business (Bachelor of Environmental Studies - Honours) View Program
- Environmental Assessment Diploma - Diploma in Environmental Assessment View Program

Course Requirements (units)

- Sustainability Diploma - Diploma in Sustainability View Program

Course Lists

- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program

Course Requirements (no units)

- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

GEOG 483 - Civic Technology and Digital Infrastructures

Top

Effective Date & Career

Career
Undergraduate,

Proposed
Effective Term and Year Fall 2026
Existing
Effective Term and Year

Offering Number
1

Fall 2023

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2023

Retired Impact
Yes,

Retired Impact Details
Course is an option in the specializations, although specializations are being changed to remove this course.

Rationale for Change

As part of an extensive curriculum review, and due to the retirements of four geomatics-focused faculty members, our department is revamping and streamlining our Geomatics (Geospatial Data Science courses). We are reducing the number of options available and streamlining around core required courses. GEOG483 is being retired, with some relevant content moved to other core courses.

Related agenda proposals:

- CEC-Geomatics Specialization
- GA-Geomatics Specialization
- GEM-Geomatics Specialization

Consultations

No consultations necessary.

Course Information

Faculty
Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
483

Course Level
400

Title
Civic Technology and Digital Infrastructures

Abbreviated Title
Civic Tech-Digital Infra

Undergraduate Communication Requirement Identifier
No,

Description
A critical approach to the development, implementation, and evaluation of civic technology and smart cities, with a focus on practical implementation considerations. Topics covered include open data, urban data collection and analysis platforms, digital inequalities, locational privacy, and digital infrastructures.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program

GEOG 484 - Machine Learning in Geospatial Science

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Spring 2022

Retired Impact
Yes,

Retired Impact Details
Course is in a list of one of choice, so another course can be chosen, or the student can elect to change the requirement term to complete the new specialization which has fewer courses (if graduating after

October 2026).

Rationale for Change

As part of an extensive curriculum review, and due to the retirements of four geomatics-focused faculty members, our department is revamping and streamlining our Geomatics (Geospatial Data Science courses). We are reducing the number of options available and streamlining around core required courses. GEOG484 is being retired, with core content on machine learning integrated into the revised GEOG387.

Related agenda proposals:

- CEC-Geomatics Specialization
- GA-Geomatics Specialization
- GEM-Geomatics Specialization
- GEOG387

Consultations

No consultations necessary.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code

GEOG

Number

484

Course Level

400

Title

Machine Learning in Geospatial Science

Abbreviated Title

Geospatial Machine Learning

Undergraduate Communication Requirement Identifier

No,

Description
An in-depth study of current machine learning algorithms and their applications in geospatial science, with a focus on earth observation data processing and analysis. Topics include k-nearest neighbour, decision trees, support vector machines, ensemble learning, and some deep neural networks (e.g., CNN, U-Net). Machine learning algorithms implemented using Python will be applied for semantic segmentation, land use and land cover classification, and building and road detection using aerial and satellite images.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- GEOG316 - Multivariate Statistics (0.50)
- GEOG371 - Advanced Remote Sensing Techniques (0.50)

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- CS480 - Introduction to Machine Learning (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization — View Program
- GEM-Geomatics Specialization - Geomatics Specialization — View Program
- GA-Geomatics Specialization - Geomatics Specialization — View Program

GEOG 487 - Management Issues in Geographic Information Systems

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Retire,

Academic Unit Approval
2025-09-24

Last Offering of Course
Winter 2026

Retired Impact
Yes,

Retired Impact Details
Programs are being changed to reflect that this course will no longer be offered. Students in the diploma of excellence in GIS may be impacted, but can shift over to the new Fall 2026 calendar to obtain the credential.

Rationale for Change

As part of an extensive curriculum review, and due to the retirements of four geomatics-focused faculty members, our department is revamping and streamlining our Geomatics (Geospatial Data Science courses). We are reducing the number of options available and streamlining around core required courses. GEOG487/PLAN487 are being retired, with core content integrated into other geomatics courses, where possible.

Related agenda proposals:

- Diploma of Excellence in Geographic Information Systems
- PLAN487

Consultations

Consultations with Planning have taken place. Planning is in support of the retirement of the course.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
487

Course Level
400

Title
Management Issues in Geographic Information Systems

Abbreviated Title
Management Issues in GIS

Undergraduate Communication Requirement Identifier
No,

Description
Built around a set of key issues in the management of Geographic Information Systems (GIS). Focuses on middle management concerns and covers topics including GIS needs assessment, benchmarking, the law and spatial data, spatial data warehousing, multi-user GIS modelling, and GIS application development. Uses of GIS in both public and private sector organizations are covered.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Seminar

Primary Component
Seminar

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PLAN 487 - Management Issues in Geographic Information Systems

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete 1 of the following

- Must have completed at least 1 of the following:
  - GEOG381 - Advanced Geographic Information Systems (0.50)
  - PLAN381 - Advanced Geographic Information Systems (0.50)
- Must have completed at least 1 of the following:
  - GEOG387 - Spatial Databases (0.50)
  - PLAN387 - Spatial Databases (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (units)

- Excellence in Geographic Information Systems Diploma - Diploma of Excellence in Geographic Information Systems View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program
- Decision Support & Geographic Information Systems Specialization - Decision Support and Geographic Information Systems Specialization View Program

INDEV 275 - Special Topics in International Development

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Last Offering of Course
Not offered in last 5 years

Retired Impact
No,

Rationale for Change

Course has not been offered in over 5 years.

Related agenda proposals: N/A

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Enterprise and Development

Subject Code
INDEV

Number
275

Course Level
200

Title
Special Topics in International Development

Abbreviated Title
Topics: Intl Development

Undergraduate Communication Requirement Identifier
No,

Description
This course allows for additions to the program on a short-term basis, and for the development of future permanent courses.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureSeminarTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
03

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Consent to Add
Department consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

INDEV 474 - Special Topics in International Development

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Last Offering of Course
Not offered in last 5 years

Retired Impact
No,

Rationale for Change

Course has not been offered within the last five years, and there are no plans of offering this course again.

Related agenda proposals: N/A

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Enterprise and Development

Subject Code
INDEV

Number
474

Course Level
400

Title
Special Topics in International Development

Abbreviated Title
Topics: Intl Development

Undergraduate Communication Requirement Identifier
No,

Description
From time to time, courses of special topics may be offered at the fourth-year level, for program enrichment.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Seminar

Primary Component
Seminar

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
03

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 4A or higher
- Enrolled in H-International Development

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

There are no dependencies

PLAN 340 - Canadian Environmental Policy and Politics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Last Offering of Course

Retired Impact

Fall 2025

No,

Rationale for Change

The content of this course has changed in light of new core courses (PLAN103; PLAN348). The new Planning curriculum was effective 2024. This course needed to stay on the books for the students who began the plan prior to 2024.

Related agenda proposals:

- Diploma in Environmental Assessment
- Diploma in Ecological Restoration and Rehabilitation
- Parks Minor

Consultations

SDS - Social Development Studies has been notified. (pending)

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Planning

Subject Code

PLAN

Number

340

Course Level

300

Title

Canadian Environmental Policy and Politics

Abbreviated Title

Canadian Env Policy & Politics

Undergraduate Communication Requirement Identifier

No,

Description

Consideration of the intersection between key ecological themes and recent policy developments. Investigation of current issues in environmental science and politics. Development of critical skills for assessing, framing and conveying information essential to planning, managing and developing policy for environmental stewardship.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed at least 1 of the following:

- BIOL150 - Organismal and Evolutionary Ecology (0.50)
- BIOL251 - Fundamentals of Ecology (0.50)
- ENVS200 - Field Ecology (0.50)

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- PLAN240 - Environmental Planning and Policy (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Antirequisites

- PLAN 240 - Environmental Planning and Policy View Program

Course Requirements (units)

- Ecological Restoration & Rehabilitation Diploma - Diploma in Ecological Restoration and Rehabilitation View Program
- Parks Minor - Parks Minor View Program

Course Lists

- Environmental Assessment Diploma - Diploma in Environmental Assessment View Program
- Social Policy & Social Action Specialization - Social Policy and Social Action Specialization View Program

PLAN 346 - Advanced Tools for Planning: Public Participation and Mediation

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Retire,

Last Offering of Course
Fall 2025

Retired Impact
No,

Rationale for Change

Under the new curriculum, content from PLAN346 has shifted to other core courses (PLAN103, PLAN107) and moved to the second year course, PLAN246.

The new Planning curriculum was effective 2024. This course needed to stay on the books for the students who began the plan prior to 2024.

Related agenda proposals: N/A

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Planning

Subject Code

PLAN

Number

346

Course Level

300

Title

Advanced Tools for Planning: Public Participation and Mediation

Abbreviated Title

Advanced Tools for Planning

Undergraduate Communication Requirement Identifier

No,

Description

A number of approaches and techniques such as Public Participation, Alternative Dispute Resolution and Mediation are used extensively in modern planning. This course addresses these techniques and critically explores their background, rationale, application, and use in contemporary community planning within a modern democratic society.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 3B or higher
- Enrolled in H-Planning

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- PLAN246 - Tools for Public Participation (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Antirequisites

- PLAN 246 - Tools for Public Participation

View Program

PLAN 351 - Multivariate Statistics

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Offering Number
2

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Retire,

Last Offering of Course
Fall 2024

Retired Impact
No,

Rationale for Change

The long-time instructor of this course has retired, and the cross-listed course (GEOG316) is no longer being offered by GEM in their updated curriculum. Students will be directed to the updated course *PLAN353: Spatial Statistical Analysis*.

Related agenda proposal:

- H-Geomatics
- CEC-Aviation Specialization
- G-Aviation Specialization
- GEM-Aviation Specialization
- G-Climate Change and Environment Specialization
- GA-Climate Change and Environment Specialization
- GEM-Climate Change and Environment Specialization
- G-Earth Systems Science Specialization
- GA-Earth Systems Science Specialization
- GEM-Earth Systems Science Specialization
- CEC-Economy and Society Specialization
- G-Economy and Society Specialization
- GA-Economy and Society Specialization
- GEM-Economy and Society Specialization
- CEC-Geomatics Specialization
- GA-Geomatics Specialization
- GEM-Geomatics Specialization
- GEOG316

Course Information

Faculty
Faculty of Environment

Academic Unit
School of Planning

Subject Code
PLAN

Number
351

Course Level
300

Title
Multivariate Statistics

Abbreviated Title
Multivariate Statistics

Undergraduate Communication Requirement Identifier
No,

Description
The theory and application of multivariate statistics, with particular emphasis upon the use of the computer.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

GEOG 316 - Multivariate Statistics

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- ENVS278 - Applied Statistics for Environmental Research (0.50)

Corequisites

No Rules

Antirequisites

Not open to students enrolled in a program offered by Faculty of Mathematics

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- G-Aviation Specialization - Aviation Specialization View Program
- GEM-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- G-Economy & Society Specialization - Economy and Society Specialization View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- GEM-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- GA-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization View Program

Course Requirements (no units)

- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

PLAN 387 - Spatial Databases

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
2

Proposal Details

Proposal Type
Retire,

Last Offering of Course
Fall 2025

Retired Impact
No,

Rationale for Change

This course is being retired by GEM in their new curriculum. In its place, planning students will be able to take a new course offered by GEM (*GDS387: AI in Geospatial Data Science*) with *ENVS278* as a prerequisite.

This course is currently a cross-listed with GEOG387, which a revised version of, will continue to be offered. Only the PLAN side is being retired.

Note: The new GDS label is still under review. If not approved the course change noted in the rationale will move forward as GEOG387: AI Geospatial Data Science

Related agenda items:

- JH-Geomatics
- H-Geomatics
- CEC-Geomatics Specialization
- GA-Geomatics Specialization
- GEM-Geomatics Specialization
- Diploma in Ecological Restoration and Rehabilitation
- Diploma of Excellence in Geographic Information Systems
- GEOG387
- GEOG481
- PLAN481
- GEOG487
- PLAN487

Consultations

GEM has been consulted.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Planning

Subject Code	Number	Course Level
PLAN	387	300

Title

Spatial Databases

Abbreviated Title
Spatial Databases

Undergraduate Communication Requirement Identifier
No,

Description
This course focuses on design and development of a GIS database. It addresses theoretical issues regarding data models used in GIS and data modeling techniques used in designing spatial databases. It considers the processing required to input data from a variety of sources and clean and edit a multi-theme database and introduces students to creation and use of internet map services.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

GEOG 387 - Spatial Databases

Repeatable Courses

Can this course be repeated for credit?

No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed at least 1 of the following:

- GEOG281 - Introduction to Geographic Information Systems (GIS) (0.50)
- PLAN281 - Introduction to Geographic Information Systems (GIS) (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- GEOG 481 - Geographic Information Systems Project View Program
- PLAN 481 - Geographic Information Systems Project View Program
- GEOG 487 - Management Issues in Geographic Information Systems View Program
- PLAN 487 - Management Issues in Geographic Information Systems View Program

Course Requirements (no units)

- JH-Geomatics - Geomatics (Joint Honours) View Program

Course Requirements (units)

- Excellence in Geographic Information Systems Diploma - Diploma of Excellence in Geographic Information Systems View Program
- Ecological Restoration & Rehabilitation Diploma - Diploma in Ecological Restoration and Rehabilitation View Program

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program
- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program
- Decision Support & Geographic Information Systems Specialization - Decision Support and Geographic Information Systems Specialization View Program

PLAN 487 - Management Issues in Geographic Information Systems

Top

Effective Date & Career

Career
Undergraduate,

Proposed
Effective Term and Year Fall 2026
Existing
Effective Term and Year Fall 2025

Offering Number
2

Proposal Details

Proposal Type
Retire,

Last Offering of Course
Winter 2026

Retired Impact
Yes,

Retired Impact Details
Programs are being changed to reflect that this course will no longer be offered. Students in the diploma of excellence in GIS may be impacted, but can shift over to the new Fall 2026 calendar to obtain the credential.

Rationale for Change

The long-time instructors of this course are set to retire, and the cross-listed course (GEM 487) is no longer being offered by GEM in their updated curriculum. The content will be shifted to updated courses *GDS287: Geospatial Data Collection and Management* and *GDS387: AI/ML in Geospatial Data Science*, which are both open to PLAN students.

Note: The new GDS label is still under review. If not approved the course changes noted in the rationale will move forward as GEOG287 and GEOG387.

Related agenda proposals:

- GEOG487
- Diploma of Excellence in Geographic Information Systems

Consultations

Consultations took place between PLAN and GEM

Course Information

Faculty

Academic Unit

Faculty of Environment

School of Planning

Subject Code
PLAN

Number
487

Course Level
400

Title
Management Issues in Geographic Information Systems

Abbreviated Title
Management Issues in GIS

Undergraduate Communication Requirement Identifier
No,

Description
Built around a set of key issues in the management of Geographic Information Systems (GIS). Focuses on middle management concerns and covers topics including GIS needs assessment, benchmarking, the law and spatial data, spatial data warehousing, multi-user GIS modelling, and GIS application development. Uses of GIS in both public and private sector organizations are covered.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Seminar

Primary Component
Seminar

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

GEOG 487 - Management Issues in Geographic Information Systems

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete 1 of the following

- Must have completed at least 1 of the following:
  - GEOG381 - Advanced Geographic Information Systems (0.50)
  - PLAN381 - Advanced Geographic Information Systems (0.50)
- Must have completed at least 1 of the following:
  - GEOG387 - Spatial Databases (0.50)
  - PLAN387 - Spatial Databases (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (units)

- Excellence in Geographic Information Systems Diploma - Diploma of Excellence in Geographic Information Systems View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program
- Decision Support & Geographic Information Systems Specialization - Decision Support and Geographic Information Systems Specialization View Program

ENVS 434 - Electric Energy Systems

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-09-19

Rationale for New Course

ENBUS475/SYDE534 has been delivered as a 'held with' course under ENBUS475/SYDE534: Electric Energy Systems. ENBUS 475 is the ENBUS special topics course. The course has been delivered for multiple years, and it is our intention to provide a permanent course code (i.e., move it out of the special topics course code).

The intention is to cross-list this course with SYDE534 (as opposed to continuing the Held With arrangement), as the courses are identical in nature.

Related agenda proposals:

- SYDE534

Consultations

The course instructor, SEED faculty, Systems Design, and ENV Associate Dean have been involved in the discussion and decision to move forward with this course as a permanent course code.

Course Information

Faculty

Faculty of Environment

Academic Unit

Dean of Environment Office

Subject Code
ENVS

Number
434

Course Level
400

Title
Electric Energy Systems

Abbreviated Title
Electric Energy Systems

Undergraduate Communication Requirement Identifier
No,

Description

Traditional electric energy systems comprising generation, transmission, and distribution are examined. Emerging technologies and trends are considered, such as competition, smart grids, energy storage, demand side management, renewable energy, and P2P. Future challenges and possibilities are then explored. Issues will be explored from technical, economic, environmental, sustainability, and social perspectives.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

SYDE 534 - Electric Energy Systems

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

Not completed nor currently enrolled in: ENBUS475 (Topic 15: Electric Energy Systems)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Faculty of Engineering

Dependencies

There are no dependencies

ENVS 459 - Energy, Governance, and Sustainability

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Rationale for New Course

GEOG459, which is being retired, covered roughly the same content. However, Energy systems and sustainability transitions are broadly applicable to all of Environment's plans. This new course builds on the foundation of GEOG459, but updates the course description to include a more explicit focus on governance and sustainability transitions. ENVS coding signals this broader focus and allows the course to count toward the major average of multiple plans.

Related agenda proposals:

- G-Climate Change Specialization
- GA-Climate Change Specialization
- GEM-Climate Change Specialization
- GEOG459

Consultations

N/A

Course Information

Faculty

Faculty of Environment

Academic Unit

Dean of Environment Office

Subject Code
ENVS

Number
459

Course Level
400

Title
Energy, Governance, and Sustainability

Abbreviated Title
Energy, Governance, & Sust

Undergraduate Communication Requirement Identifier
No,

Description
This course examines the ways in which communities and societies at various scales – from the local, through the provincial, to the national, and then the global – are driving energy transitions and advancing energy sustainability outcomes through various governance arrangements. Focusing upon energy as socio-technical systems, investigating multiple actors (governments, utilities, businesses, civil society, etc.), this course both analyzes current governance arrangements and identifies and evaluates alternatives going forward.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureField StudiesTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed at least 1 of the following:
  - ENBUS202 - Environmental Management Systems (0.50)
  - ERS201 - Environmental Policy, Politics and Governance (0.50)
  - GEOG207 - Climate Change Fundamentals (0.50)
  - PLAN246 - Tools for Public Participation (0.50)
- Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

Not completed nor currently enrolled in: ENVS474 (Topic 10: Energy and Society in Ontario)

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

There are no dependencies

ERS 260 - Ecology, Society, and Justice: Social Development and the Environment

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-05-01

Rationale for New Course

SDS260R course material is suitable as an ERS course so a cross-list is being proposed.

Dependencies: Diploma in Sustainability and Social Policy and Social Action Specialization

Associated agenda proposals:

- SDS260R

Consultations

Approved by SDS Chair, Denise Marigold.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
260

Course Level
200

Title
Ecology, Society, and Justice: Social Development and the Environment

Abbreviated Title
Ecology, Society & Justice

Undergraduate Communication Requirement Identifier
No,

Description
This course introduces theory and concepts of social ecology, an interdisciplinary approach to understanding the interrelationship of social and environmental well-being. Students critically examine the implications of environment and environmentalism for human society and social justice, and explore ideas for community action and social institutions that reflect a social-ecological ethic.

Units

Exceptions to Fees or Academic Progress

0.50

Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

SDS 260R - Ecology, Society, and Justice: Social Development and the Environment

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment | Faculty of Arts

Dependencies

There are no dependencies

GDS 287 - Geospatial Data Collection and Management

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-09-24

Rationale for New Course

After an extensive curriculum review, our department is revamping and streamlining our Geomatics (to be renamed GDS Geospatial Data Science) courses. This stems partly from the retirement of four Geomatics focused faculty members, but also as part of efforts to ensure courses are relevant and focused on key areas that help support student expertise and knowledge in the discipline.

This course is being created to streamline the '87' course code series (current courses include: GEOG 187, GEOG 387, and GEOG 487 [retired]). Students will learn key skills related to geospatial data acquisition and management in their second year, which will help set them up for successful co-op work placements for the remainder of their program. We are proposing to shift the current GEOG387 course content down to the 200-level with the new GDS287 course code. The calendar description has been updated to reflect curriculum developments, and the more advanced nature of the course.

Related agenda proposals:

- H-Geomatics
- JH-Geomatics
- Diploma of Excellence in GIS
- GEOG/PLAN487
- PLAN387
- GEOG387

Consultations

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GDS

Number
287

Course Level
200

Title
Geospatial Data Collection and Management

Abbreviated Title
Geospatial Data Collect & Mgmt

Undergraduate Communication Requirement Identifier
No,

Description
The course focuses on geospatial data acquisition and management. It provides foundational concepts related to primary data acquisition (e.g., survey data, Earth observation, geoweb), geodata cleaning, and preparation for analysis ready data. The course develops concepts of spatial database design and interrogation for geospatial analysis, demonstrating the technical requirements and processes from data collection to publication.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

There are no dependencies

GEOG 390 - Research Methods and Design

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-09-24

Rationale for New Course

After an extensive curriculum review, we are revamping the research methods training students receive in our four departmental programs.

Our 200-level and 300-level research-focused courses (GEOG293, GEOG294, and GEOG391) will be retired, effective Sept 2027 to allow for students currently in the plan to meet curriculum requirement.

Related proposals: N/A

Consultations

No consultation necessary

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
390

Course Level
300

Title
Research Methods and Design

Abbreviated Title
Research Methods & Design

Undergraduate Communication Requirement Identifier
No,

Description
This course develops student skills in quantitative and qualitative research in geography, emphasizing all aspects of design, data collection and measurement, and evaluation. Students will learn to think critically about the research process, from asking good research questions to understanding good data collection methods. The course has a particular emphasis on critical transferable skills to plan and implement projects and/or engage in research.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

Not completed nor concurrently enrolled in:

- ERS302 - Research Methods and Design (0.50)

- ENBUS306 - Research Design (0.50)
- GEOG293 - Approaches to Research in Human Geography (0.50)
- GEOG294 - Approaches to Research in Physical Geography (0.50)
- GEOG391 - Field Research (0.50)
- INTEG340 - Research Design and Methods (0.50)
- PLAN350 - Research Methods for Planners (0.50)

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

There are no dependencies

GEOG 427 - Climate Change Solutions: Techniques and Applications

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type

Academic Unit Approval

New, 2025-09-24

Rationale for New Course

After an extensive curriculum review, we are revamping our specializations, including our specialization focused on climate change. It was determined that a new course advancing climate change solutions was needed, at the 400-level, to support integrated student learning under the climate change theme.

Related proposals:

- H-Climate and Environmental Change
- G-Climate Change and the Environment Specialization
- GA-Climate Change and the Environment Specialization
- GEM-Climate Change and the Environment Specialization
- GEOG207
- SCI205

Consultations

SCI205 is a new cross-listing with GEOG207. Science has been consulted.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
427

Course Level
400

Title
Climate Change Solutions: Techniques and Applications

Abbreviated Title
Climate Change Techniques

Undergraduate Communication Requirement Identifier

No,

Description
Global climate change requires whole-of-society solutions. Drawing on examples from multiple sectors, this course focuses on techniques used in research and practice. Students develop applied skills related to climate data interpretation and scenarios, climate risk assessment and adaptation strategies, emission accounting and mitigation plans, disclosure reporting, policy analysis, and communications.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add

Consent to Drop

No consent required,

No consent required,

Prerequisites

Complete all of the following

- Must have completed at least 1 of the following:
  - GEOG207 - Climate Change Fundamentals (0.50)
  - Course Not Found
- Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

GEOG 441 - Disability and Accessibility in the City

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-09-24

Rationale for New Course

As part of ongoing collaborations with the School of Planning, we are creating a new course that will be cross-listed with a pre-existing course in Planning (PLAN441). Since the area of focus of the course is relevant to students in both programs and will be added to the new specialization in our department (Environment, Society and Wellbeing), a cross-list was the most effective use of resources.

Related proposals: Planning is submitting a proposal to add the cross-list, as well as a minor adjustment to the title (to make it more inclusive for GEOG students) and pre-requisites (so it will be open to GEOG students).

Related agenda proposals:

- PLAN441

Consultations

Consultations with the School of Planning have taken place on multiple occasions. Agreement of details of the cross-list decided at a meeting held on Sept 17.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code
GEOG

Number
441

Course Level
400

Title
Disability and Accessibility in the City

Abbreviated Title
Disability & Accessibility

Undergraduate Communication Requirement Identifier
No,

Description
This advanced course enhances students' knowledge on the role of planners and planning in creating supportive and accessible environments for all individuals. Through engagement with critical disability scholarship and theories of person-environment interaction, students will explore planned spaces as disabling/enabling environments for people living with physical, cognitive, and sensory/neuro diversity.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLectureSeminarTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PLAN 441 - Disabling Environments and Accessibility in Planning

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed at least 1 of the following:
  - GEOG225 - Global Environment and Health (0.50)
  - PLAN133 - Planning for Equity, Justice, and the Public Interest (0.50)
  - PLAN233 - Social Planning and Community Development (0.50)
- Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

There are no dependencies

GEOG 445 - Gender and Queer Inclusive Environments

Top

Effective Date & Career

Career
Undergraduate,

Effective Term and Year
Fall 2026

Proposal Details

Proposal Type
New,

Academic Unit Approval
2025-09-24

Rationale for New Course

As part of ongoing collaborations with the School of Planning, we are creating a new course that will be cross-listed with a pre-existing course in Planning (PLAN445). Since the area of focus of the course is relevant to students in both programs and will be added to the new specialization in our department (Environment, Society and Wellbeing), a cross-list was the most effective use of resources.

Related proposals:

- PLAN445

Consultations

Consultations with the School of Planning have taken place on multiple occasions. Agreement of details of the cross-list decided at a meeting held on Sept 17.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Subject Code

GEOG

Number

445

Course Level

400

Title

Gender and Queer Inclusive Environments

Abbreviated Title

Gender & Queer Inclusive Env

Undergraduate Communication Requirement Identifier

No,

Description

This advanced course addresses the intersection between planning, gender, and sexual orientation. Students will learn about strategies for challenging the patriarchal, cis-gendered, and heteronormative assumptions in planning scholarship and practice. Students will explore how urban form shapes experiences of safety and mobility for women and queer communities as well as their sense of belonging. The course will also address how women and queer communities are engaged in planning processes and the profession itself.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureSeminarTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PLAN 445 - Gender and Queer Inclusive Planning

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Must have completed at least 1 of the following:
  - GEOG225 - Global Environment and Health (0.50)
  - PLAN133 - Planning for Equity, Justice, and the Public Interest (0.50)
  - PLAN233 - Social Planning and Community Development (0.50)
- Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

ENBUS 405 - Introduction to Life Cycle Assessment

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-03-28

Rationale for Change

Add LAB option for delivery type.

The software required for the Life Cycle Assessment is too large for many of the basic laptops students now purchase. As such, the instructor wishes to incorporate a computer lab (tutorial) to enable students to use computers with the processing power required to use the software. The tutorial will allow the instructor to guide students through how to use the software, which is required for course assessment.

Related agenda proposals: N/A

Consultations

SEED approval following discussion in April meeting.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Enterprise and Development

Subject Code

ENBUS

Number

405

Course Level

400

Title

Introduction to Life Cycle Assessment

Abbreviated Title

Intro Life Cycle Assessment

Undergraduate Communication Requirement Identifier

No,

Description

This course builds students' technical competencies in life cycle assessment (LCA) and in critical analysis of products' environmental impacts through an understanding of life cycle management. Course content covers the International Organization for Standardization (ISO) life-cycle assessment framework, how to conduct technical LCA (including applying quantitative approaches using LCA software and databases, as available and appropriate), challenges of application of LCA to a range of product systems, limitations of LCA, and product life cycle management concepts for business and policy decisions. Students will use the knowledge gained to conduct their own technical LCA.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Proposed

Components

Laboratory Lecture

Existing

Components

Lecture

Primary Component

Lecture

Grading Information

Standard Course Grading

Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 4A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Lists

- H-Environment & Business - Environment and Business (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- Urban Studies Minor - Urban Studies Minor View Program

ENVS 131 - Communications for Environmental Professions

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

The Faculty of Environment has adopted ENVS 131 as the common UCR course for all Environment students. This in turn triggered a close look at course content to be reflective of more plans. Additionally, a module on indigenous knowledge has been added.

Related agenda proposals: N/A

Consultations

All units in Environment discussed and adopted the common core. Instructors of previous UCR courses in Environment (ERS 101, PLAN 102) as well as the instructor of ENVS 131 and Environment's Manager of Indigenous initiatives collaboratively developed the new course description.

UCRG was consulted on September 25.

Course Information

Faculty
Faculty of Environment

Academic Unit
Dean of Environment Office

Subject Code
ENVS

Number
131

Course Level
100

Title
Communications for Environmental Professions

Abbreviated Title
Comm for Env Professions

Undergraduate Communication Requirement Identifier
Yes,

Proposed

Description
This course provides a practical introduction to effective communication in written, visual, and oral forms. You will learn to strategically consider the purpose, audience, channel, and style of your communication, and understand its connection to broader cultural, political, academic, and professional contexts. An iterative design process will encourage revision and refinement of your work through collaboration and peer feedback. Practical exercises, case studies, and interactive tutorials will help you develop the ability to communicate complex environmental issues clearly and persuasively to diverse audiences. This course integrates Indigenous knowledge and perspectives and is tailored for students in the Faculty of Environment.

Existing

Description
This course provides an introduction to strategies and tools that enhance the effectiveness and impact of communications for environmental professionals. The course focuses on topics such as effective presentation methods in small or large group settings, digital presentation techniques, media relations, and corporate communications strategies.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (units)

- H-Environment & Business - Environment and Business (Bachelor of Environmental Studies - Honours) View Program
- H-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- 3G-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Three-Year General) View Program

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- H-Planning - Planning (Bachelor of Environmental Studies - Honours) View Program
- H-Geography & Aviation - Geography and Aviation (Bachelor of Environmental Studies - Honours) View Program

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

Course Requirements (no units)

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

ENVS 200 - Field Ecology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

Biology has contacted us and told us that they are adding ENVS200 as an antireq to BIOL251 due to course content that has more than a 50% overlap, as well as both courses having a substantial lab component. Further, either course is acceptable as a pre-req for subsequent BIOL or ERS courses in the ecology space, so a bi-directional anti-req makes sense.

In light of this the following changes are being made:

1. H-CEC plan will be updated to remove BIOL251; and,
2. BIOL251 is being added to ENVS200 as an antireq to align the antireqs for these two courses.

Related agenda proposals:

- H-Climate and Environmental Change
- BIOL251 (Science agenda)

Consultations

This is a Biology initiated change.

Course Information

Faculty

Faculty of Environment

Academic Unit

Dean of Environment Office

Subject Code
ENVS

Number
200

Course Level
200

Title
Field Ecology

Abbreviated Title
Field Ecology

Undergraduate Communication Requirement Identifier
No,

Description
Introduces the main concepts and principles of ecology; the cycling of elements; energetics and structural organization of major ecological systems; population dynamics; impact of natural resource management practices and urban and industrial development on the environment; incorporating environmental quality considerations into development activities. The lab sessions include field trips to study natural and disturbed ecosystems, urban and applied ecology.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 1B or higher
- Obtained all of the following milestones: Workplace Hazardous Materials Information System Milestone

Corequisites

No Rules

Antirequisites

1. Not completed nor concurrently enrolled in:
    - **BIOL251 - Fundamentals of Ecology (0.50)**

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Prerequisites

- ERS 346 - Wildlife Ecology View Program
- BIOL 383 - Tropical Ecosystems View Program
- ERS 383 - Tropical Ecosystems View Program
- ERS 484 - Soil Ecosystem Dynamics View Program
- GEOG 404 - Soil Ecosystem Dynamics View Program
- GEOG 368 - Ecology and Conservation for Planning View Program
- PLAN 341 - Ecology and Conservation for Planning View Program
- BIOL 489 - Arctic Ecology View Program
- ENVS 444 - Ecosystem and Resource Management in Parks/Natural Areas View Program
- ERS 382 - Ecological Monitoring View Program
- ERS 443 - Ecosystem Field Research View Program
- ERS 446 - Wildlife Management View Program
- GEOG 405 - Wetlands View Program
- PLAN 340 - Canadian Environmental Policy and Politics View Program
- BIOL 350 - Ecosystem Ecology View Program
- BIOL 351 - Aquatic Ecology View Program
- BIOL 457 - Analysis of Communities View Program
- BIOL 458 - Quantitative Ecology View Program
- PLAN 240 - Environmental Planning and Policy View Program
- ERS 315 - Environmental and Sustainability Assessment 2 View Program
- ERS 335 - Restoration Ecology View Program
- ERS 337 - ReWilding and Ecological Restoration View Program
- ERS 283 - Ontario Natural History: Species and Patterns View Program
- ERS 340 - Ecosystem Assessment View Program
- ERS 341 - Professional Conservation and Restoration Practice 1 View Program
- ERS 342 - Professional Conservation and Restoration Practice 2 View Program
- BIOL 490A - Biology Field Course 1 View Program
- BIOL 490B - Biology Field Course 2 View Program
- BIOL 490C - Biology Field Course 3 View Program
- BIOL 490D - Biology Field Course 4 View Program
- BIOL 498A - Short Biology Field Course 1 View Program
- BIOL 498B - Short Biology Field Course 2 View Program

Course Requirements (no units)

- Sustainability Specialization - Sustainability Specialization View Program

Course Requirements (units)

- H-Environment & Business - Environment and Business (Bachelor of Environmental Studies - Honours) View Program
- Urban Studies Minor - Urban Studies Minor View Program

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- H-Sustainability & Financial Management - Sustainability and Financial Management (Bachelor of Sustainability and Financial Management - Honours) View Program
- H-Planning - Planning (Bachelor of Environmental Studies - Honours) View Program
- Sustainability Diploma - Diploma in Sustainability View Program

Course Requirements (no units)

- Environmental Engineering Option - Environmental Engineering Option View Program

Course Lists

- H-Architectural Engineering - Architectural Engineering (Bachelor of Applied Science - Honours)
- H-Civil Engineering - Civil Engineering (Bachelor of Applied Science - Honours) View Program
- H-Electrical Engineering - Electrical Engineering (Bachelor of Applied Science - Honours) View Program
- H-Computer Engineering - Computer Engineering (Bachelor of Applied Science - Honours) View Program
- H-Management Engineering - Management Engineering (Bachelor of Applied Science - Honours) View Program
- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program

Course Requirements (no units)

- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program
- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

ENVS 274 - Special Topics in Environment

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

Addition of Department Consent to avoid the need to change prerequisites with each new topic offering.

Related agenda proposals: N/A

Consultations

Directive from the Office of the Registrar.

Course Information

Faculty

Faculty of Environment

Academic Unit

Dean of Environment Office

Subject Code
ENVS

Number
274

Course Level
200

Title
Special Topics in Environment

Abbreviated Title
Env Special Topics

Undergraduate Communication Requirement Identifier
No,

Description
This special topics course covers material relevant to all students in the Faculty of Environment. Course content is not specific to an individual program and is specified by the instructor at the level indicated by the course number.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLectureSeminar

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
03

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Proposed

Consent to Add
Department consent required,

Existing

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 2A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

There are no dependencies

ENVS 374 - Special Topics in Environment

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2024

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

Addition of Department Consent to avoid the need to change prerequisites with each new topic offering.

Related agenda proposals: N/A

Consultations

Directive from the Office of the Registrar

Course Information

Faculty

Faculty of Environment

Academic Unit

Dean of Environment Office

Subject Code

ENVS

Number

374

Course Level

300

Title

Special Topics in Environment

Abbreviated Title

Env Special Topics

Undergraduate Communication Requirement Identifier

No,

Description

This special topics course covers material relevant to all students in the Faculty of Environment. Course content is not specific to an individual program and is specified by the instructor at the level indicated by the course number.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components
Field StudiesLectureSeminarWorkshop

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
Yes,

Total Completions Allowed
03

Allow Multiple Enrol in a Term
Yes,

Enrolment Rules

Proposed

Consent to Add
Department consent required,

Existing

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Students must be in level 3A or higher

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

There are no dependencies

ERS 102 - At Home in the Universe

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year

Offering Number
1

Fall 2026

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-05-01

Rationale for Change

Remove prerequisites to allow enrollment by all students.

Related agenda proposals: N/A

Consultations

School decision.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
102

Course Level
100

Title
At Home in the Universe

Abbreviated Title
At Home in the Universe

Undergraduate Communication Requirement Identifier
No,

Proposed

Description
All human societies harbour stories about the origin of the universe and their place in it. These accounts include those of Indigenous Peoples, the world's religions, and natural science. To help students navigate these worldviews and clarify their own, this course surveys "Big History," the scientific story of the astounding 15-billion-year evolution of physical, living, and social systems. By deepening students' understanding of the "environment" and humanity's place in it, this survey course provides a grounding for further study pertaining to sustainability.

Existing

Description
All human societies harbour stories about the origin of the universe and their place in it. These accounts include those of Indigenous Peoples, the world's religions, and natural science. To help students navigate these worldviews and clarify their own, this course surveys "Big History," the scientific story of the astounding 15-billion-year evolution of physical, living, and social systems. By deepening students' understanding of the "environment" and humanity's place in it, this survey provides a grounding for later courses focused on sustainability.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program
- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program

ERS 201 - Environmental Policy, Politics and Governance

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

Remove prerequisites which will allow all students in level 2A or higher to enrol in the course regardless of plan.

Related agenda proposals: N/A

Consultations

School decision.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
201

Course Level
200

Title
Environmental Policy, Politics and Governance

Abbreviated Title
Env Policy, Politics & Gov

Undergraduate Communication Requirement Identifier
No,

Description
This course provides students with an introduction to processes of environmental policy, politics and governance. The roles of various actors, discourses and institutions involved in environmental policy-making and governance will be examined. These processes will be illustrated through an examination of a range of environmental issues from the local to the global level.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Students must be in level 2A or higher
    - ~~Enrolled in H-Environment, Resources & Sustainability, JH-Environment, Resources & Sustainability, or Environment, Resources & Sustainability Minor~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- ERS 365 - Water Governance View Program

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program
- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program

ERS 202 - Natural Resources Ecology

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Rationale for Change

Remove prerequisites which will allow all students in level 2A or higher to enrol in the course regardless of

plan.

Related agenda proposals: N/A

Consultations

School decision.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
202

Course Level
200

Title
Natural Resources Ecology

Abbreviated Title
Natural Resources Ecology

Undergraduate Communication Requirement Identifier
No,

Description
This course explores the ecology and context of Canada's main natural resources including mining, forestry, energy and agriculture. In addition, this course presents alternatives to status-quo approaches including organic agriculture, sustainable forestry and a movement away from traditional energy.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLectureTutorial

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Students must be in level 2A or higher
    - ~~Enrolled in H-Environment, Resources & Sustainability, JH-Environment, Resources & Sustainability, or Environment, Resources & Sustainability Minor~~

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program
- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program
- Energy & Climate Change Specialization - Energy and Climate Change Specialization View Program

ERS 215 - Environmental and Sustainability Assessment 1

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Offering Number
1

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Rationale for Change

Remove prerequisite which will allow all students to enroll.

Related agenda proposals: N/A

Consultations

School decision.

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code	Number	Course Level
ERS	215	200

Title
Environmental and Sustainability Assessment 1

Abbreviated Title
Env & Sust Assessment 1

Undergraduate Communication Requirement Identifier
No,

Description
An introduction to processes and techniques for incorporating environmental considerations in planning and evaluating proposals for future undertakings that may have significant social and biophysical effects. The course provides an overview of methodologies for, and controversies surrounding, the design and conduct of biophysical and socioeconomic impact studies, and the testing of reported findings. The main focus is on the purposes and design of environmental assessment processes, with particular reference to the Canadian federal and Ontario provincial legal mandates, and the evolution of assessment into a sustainability framework.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Lecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. No Rules

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- ERS 315 - Environmental and Sustainability Assessment 2 View Program

Course Requirements (units)

- H-Environment & Business - Environment and Business (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program
- Environmental Assessment Diploma - Diploma in Environmental Assessment View Program

Course Requirements (units)

- Sustainability Diploma - Diploma in Sustainability View Program

Course Requirements (no units)

- Environmental Engineering Option - Environmental Engineering Option View Program

Course Lists

- Peace & Conflict Studies Minor - Peace and Conflict Studies Minor View Program

Course Requirements (no units)

- H-Environmental Sciences - Geoscience Specialization - Environmental Sciences - Geoscience Specialization (Bachelor of Science - Honours) View Program

Course Lists

- H-Software Engineering - Software Engineering (Bachelor of Software Engineering - Honours) View Program

Course Requirements (no units)

- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program
- Sustainable Cities Specialization - Sustainable Cities Specialization View Program

Course Requirements (units)

- International Development Minor - International Development Minor View Program

Course Lists

- 4G-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Four-Year General)
- H-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Honours) View Program View Program

Course Requirements (units)

- H-International Development - International Development (Bachelor of Environmental Studies - Honours) View Program

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program

Course Requirements (units)

- Society, Technology & Values Diploma - Diploma in Society, Technology and Values

View Program

Course Lists

- 3G-Peace & Conflict Studies - Peace and Conflict Studies (Bachelor of Arts - Three-Year General)

View Program

ERS 300 - Social Ecological Systems Analysis

Top

Effective Date & Career

Career	Effective Term and Year	Offering Number
Undergraduate,	Fall 2026	1

Proposal Details

Proposal Type
Change,

Rationale for Change

Course is taught in a LEC and TUT format, not project.

Related agenda proposals: N/A

Consultations

N/A

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code
ERS

Number
300

Course Level
300

Title
Social Ecological Systems Analysis

Abbreviated Title
Social Ecol Systems Analysis

Undergraduate Communication Requirement Identifier
No,

Description
This course provides an opportunity to learn and begin to apply systems-based tools in the context of an interdisciplinary research problem defined by the student in co--operation with the teaching team. Students are provided with an introduction to the conceptual tools of systems thinking and resilience that help understand the dynamics of social change and social innovation. These conceptual tools will then be applied by students to provide a framework for interdisciplinary research and to develop a richer understanding of a case study of fostering social change and building adaptive capacity.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Proposed
Components Lecture
Existing
Components Project

Proposed
Primary Component Lecture
Existing
Primary Component Project

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Complete all of the following

- Students must be in level 2A or higher
- Enrolled in H-Environment, Resources & Sustainability, JH-Environment, Resources & Sustainability, or Environment, Resources & Sustainability Minor

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Requirements (no units)

- H-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Bachelor of Environmental Studies - Honours) View Program
- JH-Environment, Resources & Sustainability - Environment, Resources and Sustainability (Joint Honours) View Program

ERS 340 - Ecosystem Assessment

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year

Offering Number
1

Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-05-01

Rationale for Change

The course prerequisites removed, as they are not required to be successful in the course.

Related agenda proposals: N/A

Course Information

Faculty
Faculty of Environment

Academic Unit
School of Environment, Resources and Sustainability

Subject Code
ERS

Number
340

Course Level
300

Title
Ecosystem Assessment

Abbreviated Title
Ecosystem Assessment

Undergraduate Communication Requirement Identifier
No,

Description
An applied ecology course for those interested in becoming professional ecologists. In keeping with the Ecological Society of America's Professional Ecologist Certification and the Society for Ecological Restoration's Certification Programme, intensive, multiple-weeks of field skill exercises are undertaken including advanced ecological sampling and experimental design, ecological sample analysis, use of provincially recommended protocols such as VSP (Vegetative Sampling Protocol), and intermediate to advanced taxonomic identification skills. May include certification and accreditation opportunities such as the Ontario Benthos Biomonitoring Network (OBBN) and the Ontario Stream Assessment Protocol and training in Electrofishing and Boating (for research). Location of the course will be within southern Ontario.

Units
1.50

Exceptions to Fees or Academic Progress Units
No,

Components
Field StudiesLectureOnline

Primary Component
Field Studies

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add

Consent to Drop

Department consent required,

Department consent required,

Prerequisites

1. Complete all of the following
   - Students must be in level 2B or higher
   - Obtained all of the following milestones: Workplace Hazardous Materials Information System Milestone
   - ~~Must have completed at least 1 of the following:~~
   - ~~BIOL150 - Organismal and Evolutionary Ecology (0.50)~~
   - ~~BIOL251 - Fundamentals of Ecology (0.50)~~
   - ~~ENVS200 - Field Ecology (0.50)~~
   -

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Fee Statement
This course may have additional fees. See academic unit for details.

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (units)

- Ecological Restoration & Rehabilitation Diploma - Diploma in Ecological Restoration and Rehabilitation View Program
- Parks Minor - Parks Minor View Program

ERS 365 - Water Governance

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-05-01

Rationale for Change

The course prerequisite is being removed, as it is not required to be successful in the course.

Related agenda proposals: N/A

Consultations

Will notify BASc plan

Course Information

Faculty

Faculty of Environment

Academic Unit

School of Environment, Resources and Sustainability

Subject Code

ERS

Number

365

Course Level

300

Title

Water Governance

Abbreviated Title

Water Governance

Undergraduate Communication Requirement Identifier

No,

Description

Water governance refers to the processes and institutions through which societies make decisions and take actions that affect water. A profound, world-wide shift in the nature of water governance is occurring because governments can no longer be the primary source of decision-making authority regarding water. Instead, through mechanisms that range from markets to co-management arrangements, citizens, non-government organizations, and corporations are now playing key roles in water governance. The course explores major water governance challenges in Canada, and assesses different ways of addressing or resolving them.

Units

0.50

Exceptions to Fees or Academic Progress Units

No,

Components

LectureTutorial

Primary Component

Lecture

Grading Information

Standard Course Grading

Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

1. Students must be in level 3A or higher
    - ~~Must have completed the following:~~
    - ~~ERS201 - Environmental Policy, Politics and Governance (0.50)~~
    -

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements View Program

ERS 460 - Sustainable Food: Localizing Food Systems

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
2

Proposal Details

Proposal Type
Change,

Rationale for Change

After an extensive curriculum review, GEM is proposing a minor change to the title of ERS/GEOG460, to better reflect the course content to prospective students.

Related proposals:

- GEOG460

Consultations

Consultations between GEM and ERS

Course Information

Faculty
Faculty of Environment

Academic Unit
School of Environment, Resources and Sustainability

Subject Code
ERS

Number
460

Course Level
400

Proposed

Title
Sustainable Food: Localizing Food Systems

Existing

Title
Sustainable Food: Regional Case Study

Proposed

Abbreviated Title
Sust Food: Local Food Systems

Existing

Abbreviated Title
Sustainable Food: Region Study

Undergraduate Communication Requirement Identifier
No,

Description
Agriculture has destabilized the Earth's ecosystems at the planetary scale. Socio-cultural, economic, and political dimensions also shape the sustainability and resilience of our global and local food systems. This seminar course takes a regional focus to ground our discussions of pertinent concepts, challenges, and opportunities. We will explore regional issues and initiatives linked to food security, food sovereignty, resilient agriculture and agro-ecology, the energy-water-food nexus, food policy, food supply chains, urban food systems, alternative food initiatives, sustainable diets, and food waste reduction all within the context of the case study region.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
Seminar

Primary Component
Seminar

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

GEOG 460 - Sustainable Food: Regional Case Study

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed at least 1 of the following:

- ERS361 - Food Systems and Sustainability (0.50)
- GEOG361 - Food Systems and Sustainability (0.50)

Corequisites

No Rules

Antirequisites

No Rules

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Course Lists

- Degree Reqs: BASc - Bachelor of Applied Science Degree Requirements [View Program]

GDS 181 - Designing Effective Maps

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-24

Rationale for Change

GEOG 181 is a core course in our 'Geomatics' stream of courses. We are proposing to change the name of the Geomatics program to 'Geospatial Data Science', with the creation of corresponding course codes (GDS) to support this name and reflect the nature of the GDS courses.

The term Geomatics has a professional identity that is very strongly tied to surveying and traditionally, therefore, to civil engineering. When the Geomatics program was launched at the University of Waterloo, much of the surveying tradition was to be found in civil and environmental engineering department. However, while limited expertise in Geography connected with surveying, historically, since 2005, the dominant identity of the Geomatics plan has reflected the strong and deep expertise of geographical information systems, remote sensing and spatial analysis, with less emphasis on surveying. Over time, the applied GIS and remote sensing technologies have strengthened, and while surveying remains a part of the plan, the dominant interest amongst students and faculty within the Geomatics plan is in the geospatial data science aspects (GIS, remote sensing and geospatial analysis). These are the dominant elements for which our program and graduates are known for, and creates the core of our disciplinary identity.

High school students are aware of data science as a recognizable and viable career path especially with a dominance in AI applications. At Waterloo, the re-branding of geomatics to geospatial data science, which corresponding course codes, better reflects what is actually taught in our program, and is a description that will better connect with potential students from a recruitment perspective. Geospatial data science explicitly deals with the acquisition and analysis of geospatial data and its adoption for environmental, policy and planning applications. For several years now, our introductory course for Geomatics students has been named ‘Geospatial Data Science’, as an attempt to better communicate to our entering class, the specifics of the plan they are embarking on. Changing the degree name, therefore, to Geospatial Data Science will:

- Better reflect the nature of our teaching and learning expertise in GEM (GIS, remote sensing, geospatial analysis, environmental and policy applications)
- Better resonate with high school students who are interested in the environment applications of geospatial data science
- Better serve students by incorporating professor's research applications into lesson planning. (modified)
- Better prepare students for the co-op positions, so potential employers have a clear sense of the training the student has received.
- Enable us to better leverage our research applications into teaching
- Maintain a strong link which students can leverage through co-op and at post-graduation

Related agenda proposals:

- Certificate in Geographical Information Systems

Consultations

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Proposed

Subject Code
GDS

Existing

Subject Code
GEOG

Number
181

Course Level
100

Title
Designing Effective Maps

Abbreviated Title
Designing Effective Maps

Undergraduate Communication Requirement Identifier
No,

Description
Focus is on the issues and foundations of modern digital cartography. Topics covered include geographic coordinate systems, map projections, mapping quantitative data, developing online maps, and the impact of maps on society. Students will learn computer techniques to produce effective maps based on established principles of cartographic design.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading

Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

No Rules

Corequisites

No Rules

Antirequisites

1. Not completed nor concurrently enrolled in: GEOG165, GEOG181

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow
Faculty of Environment

Dependencies

Prerequisites

- GEOG 271 - Earth from Space Using Remote Sensing View Program
- GEOG 281 - Introduction to Geographic Information Systems (GIS) View Program
- PLAN 281 - Introduction to Geographic Information Systems (GIS) View Program
- GEOG 310 - Geodesy and Surveying View Program

Course Requirements (no units)

- JH-Geomatics - Geomatics (Joint Honours) View Program

Course Requirements (units)

- H-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- 3G-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Three-Year General) View Program

Course Requirements (no units)

- H-Science & Aviation - Science and Aviation (Bachelor of Science - Honours) View Program
- JH-Geography & Environmental Management - Geography and Environmental Management (Joint Honours) View Program

Course Requirements (units)

- H-Geography & Aviation - Geography and Aviation (Bachelor of Environmental Studies - Honours)
- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

GDS 187 - Geospatial Data Science

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and

Offering Number
1

Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-24

Rationale for Change

GEOG 187 is a core course in our 'Geomatics' stream of courses. We are proposing to change the name of the Geomatics program to 'Geospatial Data Science', with the creation of corresponding course codes (GDS) to support this name and reflect the nature of the GDS courses.

The term Geomatics has a professional identity that is very strongly tied to surveying and traditionally, therefore, to civil engineering. When the Geomatics program was launched at the University of Waterloo, much of the surveying tradition was to be found in civil and environmental engineering department. However, while limited expertise in Geography connected with surveying, historically, since 2005, the dominant identity of the Geomatics plan has reflected the strong and deep expertise of geographical information systems, remote sensing and spatial analysis, with less emphasis on surveying. Over time, the applied GIS and remote sensing technologies have strengthened, and while surveying remains a part of the plan, the dominant interest amongst students and faculty within the Geomatics plan is in the geospatial data science aspects (GIS, remote sensing and geospatial analysis). These are the dominant elements for which our program and graduates are known for, and creates the core of our disciplinary identity.

High school students are aware of data science as a recognizable and viable career path especially with a dominance in AI applications. At Waterloo, the re-branding of geomatics to geospatial data science, which corresponding course codes, better reflects what is actually taught in our program, and is a description that will better connect with potential students from a recruitment perspective. Geospatial data science explicitly deals with the acquisition and analysis of geospatial data and its adoption for environmental, policy and planning applications. For several years now, our introductory course for Geomatics students has been named ‘Geospatial Data Science’, as an attempt to better communicate to our entering class, the specifics of the plan they are embarking on. Changing the degree name, therefore, to Geospatial Data Science will:

- Better reflect the nature of our teaching and learning expertise in GEM (GIS, remote sensing, geospatial analysis, environmental and policy applications)
- Better resonate with high school students who are interested in the environment applications of geospatial data science
- Better serve students by incorporating professor's research applications into lesson planning. (modified)
- Better prepare students for the co-op positions, so potential employers have a clear sense of the

training the student has received.
- Enable us to better leverage our research applications into teaching
- Maintain a strong link which students can leverage through co-op and at post-graduation

Consultations

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Proposed

Subject Code
GDS

Existing

Subject Code
GEOG

Number
187

Course Level
100

Title
Geospatial Data Science

Abbreviated Title
Geospatial Data Science

Undergraduate Communication Requirement Identifier
No,

Description
A specialized introduction to fundamental concepts and emerging trends in geomatics and geospatial data science. Overview of the geospatial industry, including application in government, research, and private sector. Students are introduced to cross-discipline tools and techniques for accessing, visualizing, and analyzing geospatial data.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Enrolled in H-Geomatics, or JH-Geomatics

Corequisites

No Rules

Antirequisites

1. Not completed nor currently enrolled in: GEOG187

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- GEOG 271 - Earth from Space Using Remote Sensing — View Program
- GEOG 281 - Introduction to Geographic Information Systems (GIS) — View Program
- PLAN 281 - Introduction to Geographic Information Systems (GIS) — View Program
- GEOG 310 - Geodesy and Surveying — View Program

Course Requirements (no units)

- JH-Geomatics - Geomatics (Joint Honours) — View Program
- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) — View Program

GDS 271 - Earth from Space Using Remote Sensing

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2025

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-24

Rationale for Change

GEOG 271 is a core course in our 'Geomatics' stream of courses. We are proposing to change the name of the Geomatics program to 'Geospatial Data Science', with the creation of corresponding course codes (GDS) to support this name and reflect the nature of the GDS courses.

The term Geomatics has a professional identity that is very strongly tied to surveying and traditionally, therefore, to civil engineering. When the Geomatics program was launched at the University of Waterloo, much of the surveying tradition was to be found in civil and environmental engineering department. However, while limited expertise in Geography connected with surveying, historically, since 2005, the dominant identity of the Geomatics plan has reflected the strong and deep expertise of geographical information systems, remote sensing and spatial analysis, with less emphasis on surveying. Over time, the applied GIS and remote sensing technologies have strengthened, and while surveying remains a part of the plan, the dominant interest amongst students and faculty within the Geomatics plan is in the geospatial data science aspects (GIS, remote sensing and geospatial analysis). These are the dominant elements for which our program and graduates are known for, and creates the core of our disciplinary identity.

High school students are aware of data science as a recognizable and viable career path especially with a dominance in AI applications. At Waterloo, the re-branding of geomatics to geospatial data science, which corresponding course codes, better reflects what is actually taught in our program, and is a description that will better connect with potential students from a recruitment perspective. Geospatial data science explicitly deals with the acquisition and analysis of geospatial data and its adoption for environmental, policy and planning applications. For several years now, our introductory course for Geomatics students has been

named ‘Geospatial Data Science’, as an attempt to better communicate to our entering class, the specifics of the plan they are embarking on. Changing the degree name, therefore, to Geospatial Data Science will:

- Better reflect the nature of our teaching and learning expertise in GEM (GIS, remote sensing, geospatial analysis, environmental and policy applications)
- Better resonate with high school students who are interested in the environment applications of geospatial data science
- Better serve students by incorporating professor's research applications into lesson planning. (modified)
- Better prepare students for the co-op positions, so potential employers have a clear sense of the training the student has received.
- Enable us to better leverage our research applications into teaching
- Maintain a strong link which students can leverage through co-op and at post-graduation

Related agenda proposals: N/A

Consultations

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Proposed

Subject Code
GDS

Existing

Subject Code
GEOG

Number
271

Course Level
200

Title
Earth from Space Using Remote Sensing

Abbreviated Title

Undergraduate Communication

Remote Sensing: Earth/Space

Requirement Identifier
No,

Description
Remote sensing of the Earth's systems (atmosphere, land, and oceans) is introduced. The course covers the principles, physics, sensor technology, processing, and applications of remote sensing in the electromagnetic spectrum.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add

Consent to Drop

No consent required,

No consent required,

Prerequisites

Must have completed at least 1 of the following:

- GEOG181 - Designing Effective Maps (0.50)
- GEOG187 - Geospatial Data Science (0.50)

Corequisites

No Rules

Antirequisites

1. Not completed nor currently enrolled in: GEOG271

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- GEOG 371 - Advanced Remote Sensing Techniques View Program

Course Requirements (no units)

- JH-Geomatics - Geomatics (Joint Honours) View Program

Course Requirements (units)

- H-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- 3G-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Three-Year General) View Program

Course Requirements (no units)

- H-Science & Aviation - Science and Aviation (Bachelor of Science - Honours) View Program
- JH-Geography & Environmental Management - Geography and Environmental Management (Joint Honours) View Program

Course Requirements (units)

- H-Geography & Aviation - Geography and Aviation (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program
- Climate & Sustainability Specialization - Climate and Sustainability Specialization View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

GDS 281 - Introduction to Geographic Information Systems (GIS)

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Offering Number
2

Existing

Effective Term and Year
Fall 2025

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-24

Rationale for Change
GEOG 281 is a core course in our 'Geomatics' stream of courses. We are proposing to change the name of the Geomatics program to 'Geospatial Data Science', with the creation of corresponding course codes (GDS) to support this name and reflect the nature of the GDS courses.

The term Geomatics has a professional identity that is very strongly tied to surveying and traditionally, therefore, to civil engineering. When the Geomatics program was launched at the University of Waterloo, much of the surveying tradition was to be found in civil and environmental engineering department. However, while limited expertise in Geography connected with surveying, historically, since 2005, the dominant identity of the Geomatics plan has reflected the strong and deep expertise of geographical information systems, remote sensing and spatial analysis, with less emphasis on surveying. Over time, the applied GIS and remote sensing technologies have strengthened, and while surveying remains a part of the plan, the dominant interest amongst students and faculty within the Geomatics plan is in the geospatial data science aspects (GIS, remote sensing and geospatial analysis). These are the dominant elements for which our program and graduates are known for, and creates the core of our disciplinary identity.

High school students are aware of data science as a recognizable and viable career path especially with a dominance in AI applications. At Waterloo, the re-branding of geomatics to geospatial data science, which corresponding course codes, better reflects what is actually taught in our program, and is a description that will better connect with potential students from a recruitment perspective. Geospatial data science explicitly deals with the acquisition and analysis of geospatial data and its adoption for environmental, policy and planning applications. For several years now, our introductory course for Geomatics students has been named ‘Geospatial Data Science’, as an attempt to better communicate to our entering class, the specifics of the plan they are embarking on. Changing the degree name, therefore, to Geospatial Data Science will:

- Better reflect the nature of our teaching and learning expertise in GEM (GIS, remote sensing, geospatial analysis, environmental and policy applications)
- Better resonate with high school students who are interested in the environment applications of geospatial data science
- Better serve students by incorporating professor's research applications into lesson planning. (modified)
- Better prepare students for the co-op positions, so potential employers have a clear sense of the training the student has received.
- Enable us to better leverage our research applications into teaching
- Maintain a strong link which students can leverage through co-op and at post-graduation

PLAN281 cross list will automatically be updated upon approval of the new subject code by SUC.

Related agenda proposal:

- Certificate in Geographic Information Systems

Consultations

Consultations with Planning (since GEOG 281 is cross-listed with PLAN 281). Planning is supportive of the course code change.

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Proposed

Subject Code
GDS

Existing

Subject Code
GEOG

Number
281

Course Level
200

Title
Introduction to Geographic Information Systems (GIS)

Abbreviated Title
Intro GIS

Undergraduate Communication Requirement Identifier
No,

Description
Introduction to the fundamental concepts and use of Geographic Information Systems (GIS). Students learn about the nature of geographic information and how to store, manipulate and analyze spatial data in a range of application areas. Students will learn underlying theory in lectures and gain a working knowledge of GIS software in lab sessions.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PLAN 281 - Introduction to Geographic Information Systems (GIS)

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add

Consent to Drop

No consent required,

No consent required,

Prerequisites

Complete 1 of the following

- Must have completed at least 1 of the following:
  - GEOG181 - Designing Effective Maps (0.50)
  - GEOG187 - Geospatial Data Science (0.50)
- Enrolled in H-Planning

Corequisites

No Rules

Antirequisites

1. Not completed nor currently enrolled in: GEOG281

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Prerequisites

- GEOG 428 - Spatial Demography View Program
- PLAN 418 - Spatial Demography View Program
- PLAN 416 - Modelling the City View Program
- GEOG 381 - Advanced Geographic Information Systems View Program
- PLAN 381 - Advanced Geographic Information Systems View Program

- PLAN 387 - Spatial Databases View Program
- GEOG 387 - Spatial Databases View Program
- PLAN 350 - Research Methods for Planners View Program

Course Requirements (no units)

- JH-Geomatics - Geomatics (Joint Honours) View Program

Course Requirements (units)

- Excellence in Geographic Information Systems Diploma - Diploma of Excellence in Geographic Information Systems View Program
- H-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- 3G-Geography & Environmental Management - Geography and Environmental Management (Bachelor of Environmental Studies - Three-Year General) View Program
- H-Planning - Planning (Bachelor of Environmental Studies - Honours) View Program

Course Lists

- Environmental Assessment Diploma - Diploma in Environmental Assessment View Program

Course Requirements (no units)

- H-Science & Aviation - Science and Aviation (Bachelor of Science - Honours) View Program
- JH-Geography & Environmental Management - Geography and Environmental Management (Joint Honours) View Program

Course Requirements (units)

- H-Geography & Aviation - Geography and Aviation (Bachelor of Environmental Studies - Honours)
- G-Aviation Specialization - Aviation Specialization View Program View Program
- CEC-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program

Course Requirements (units)

- GEM-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program

Course Requirements (units)

- H-Climate & Environmental Change - Climate and Environmental Change (Bachelor of Sciences - Honours) View Program

- Climate & Sustainability Specialization - Climate and Sustainability Specialization View Program

Course Lists

- H-Knowledge Integration - Knowledge Integration (Bachelor of Knowledge Integration - Honours) View Program

Course Requirements (no units)

- Decision Support & Geographic Information Systems Specialization - Decision Support and Geographic Information Systems Specialization View Program

GDS 318 - Spatial Statistical Analysis

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-24

Rationale for Change
GEOG318 is a core course in our 'Geomatics' stream of courses. We are proposing to change the name of the Geomatics program to 'Geospatial Data Science', with the creation of corresponding course codes (GDS) to support this name and reflect the nature of the GDS courses.

The term Geomatics has a professional identity that is very strongly tied to surveying and traditionally,

therefore, to civil engineering. When the Geomatics program was launched at the University of Waterloo, much of the surveying tradition was to be found in civil and environmental engineering department. However, while limited expertise in Geography connected with surveying, historically, since 2005, the dominant identity of the Geomatics plan has reflected the strong and deep expertise of geographical information systems, remote sensing and spatial analysis, with less emphasis on surveying. Over time, the applied GIS and remote sensing technologies have strengthened, and while surveying remains a part of the plan, the dominant interest amongst students and faculty within the Geomatics plan is in the geospatial data science aspects (GIS, remote sensing and geospatial analysis). These are the dominant elements for which our program and graduates are known for, and creates the core of our disciplinary identity.

High school students are aware of data science as a recognizable and viable career path especially with a dominance in AI applications. At Waterloo, the re-branding of geomatics to geospatial data science, which corresponding course codes, better reflects what is actually taught in our program, and is a description that will better connect with potential students from a recruitment perspective. Geospatial data science explicitly deals with the acquisition and analysis of geospatial data and its adoption for environmental, policy and planning applications. For several years now, our introductory course for Geomatics students has been named 'Geospatial Data Science', as an attempt to better communicate to our entering class, the specifics of the plan they are embarking on. Changing the degree name, therefore, to Geospatial Data Science will:

- Better reflect the nature of our teaching and learning expertise in GEM (GIS, remote sensing, geospatial analysis, environmental and policy applications)
- Better resonate with high school students who are interested in the environment applications of geospatial data science
- Better serve students by incorporating professor's research applications into lesson planning. (modified)
- Better prepare students for the co-op positions, so potential employers have a clear sense of the training the student has received.
- Enable us to better leverage our research applications into teaching
- Maintain a strong link which students can leverage through co-op and at post-graduation

As part of an extensive curriculum review, and due to the retirements of four geomatics-focused faculty members, our department is revamping and streamlining our Geomatics (Geospatial Data Science courses). We are reducing the number of options available and streamlining around core required courses. GEOG 316 is being retired, with some of the content moved into GEOG 318, which will be retained.

To achieve this, the course title and calendar description of the course are being modified slightly.

PLAN353 cross list will automatically be updated upon approval of the new subject code by SUC.

Related agenda proposals:

- PLAN353

Consultations

Consultations with Planning have occurred.

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Proposed
Subject Code GDS
Existing
Subject Code GEOG

Number

318

Course Level

300

Proposed
Title Spatial Statistical Analysis
Existing
Title Spatial Analysis

Proposed
Abbreviated Title Spatial Statistical Analysis
Existing
Abbreviated Title Spatial Analysis

Undergraduate Communication Requirement Identifier

No,

Proposed

Description
Students taking this course gain experience using spatial statistics to analyze spatial data and describe patterns or understand the relationship among spatial features and their attributes. Techniques related to sampling point pattern analysis, cluster detection, geostatistics, and landscape metrics, among others, will be discussed.

Existing

Description
Advanced quantitative analysis in a spatial context. A selection of techniques from sampling, geostatistics, point pattern analysis and cluster detection, spatial classification, and spatial data mining.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
Yes,

Cross-Listed Courses

PLAN 353 - Spatial Analysis

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- ENVS278 - Applied Statistics for Environmental Research (0.50)

Corequisites

No Rules

Antirequisites

1. Complete all of the following
   - **Not completed nor currently enrolled in: GEOG318**
   - Not open to students enrolled in programs offered by Faculty of Mathematics

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment

Dependencies

Course Requirements (no units)

- H-Geomatics - Geomatics (Bachelor of Environmental Studies - Honours) View Program

Course Requirements (units)

- G-Aviation Specialization - Aviation Specialization View Program
- GEM-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Earth Systems Science Specialization - Earth Systems Science Specialization View Program
- G-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- G-Economy & Society Specialization - Economy and Society Specialization View Program

Course Requirements (no units)

- CEC-Geomatics Specialization - Geomatics Specialization View Program
- GEM-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

Course Requirements (units)

- GEM-Aviation Specialization - Aviation Specialization View Program

Course Requirements (no units)

- GA-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program

Course Requirements (units)

- GA-Economy & Society Specialization - Economy and Society Specialization View Program
- CEC-Economy & Society Specialization - Economy and Society Specialization View Program

Course Requirements (no units)

- GEM-Climate Change & Environment Specialization - Climate Change and Environment Specialization View Program
- GEM-Geomatics Specialization - Geomatics Specialization View Program
- GA-Geomatics Specialization - Geomatics Specialization View Program
- G-Earth Systems Science Specialization - Earth Systems Science Specialization View Program

GDS 371 - Advanced Remote Sensing

Top

Effective Date & Career

Career
Undergraduate,

Proposed

Effective Term and Year
Fall 2026

Existing

Effective Term and Year
Fall 2023

Offering Number
1

Proposal Details

Proposal Type
Change,

Academic Unit Approval
2025-09-24

Rationale for Change

GEOG 371 is a core course in our 'Geomatics' stream of courses. We are proposing to change the name of the Geomatics program to 'Geospatial Data Science', with the creation of corresponding course codes (GDS) to support this name and reflect the nature of the GDS courses.

The term Geomatics has a professional identity that is very strongly tied to surveying and traditionally, therefore, to civil engineering. When the Geomatics program was launched at the University of Waterloo, much of the surveying tradition was to be found in civil and environmental engineering department. However, while limited expertise in Geography connected with surveying, historically, since 2005, the dominant identity of the Geomatics plan has reflected the strong and deep expertise of geographical information systems, remote sensing and spatial analysis, with less emphasis on surveying. Over time, the applied GIS and remote sensing technologies have strengthened, and while surveying remains a part of the plan, the dominant interest amongst students and faculty within the Geomatics plan is in the geospatial data science aspects (GIS, remote sensing and geospatial analysis). These are the dominant elements for which our program and graduates are known for, and creates the core of our disciplinary identity.

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- Better reflect the nature of our teaching and learning expertise in GEM (GIS, remote sensing, geospatial analysis, environmental and policy applications)

- Better resonate with high school students who are interested in the environment applications of geospatial data science
- Better serve students by incorporating professor's research applications into lesson planning. (modified)
- Better prepare students for the co-op positions, so potential employers have a clear sense of the training the student has received.
- Enable us to better leverage our research applications into teaching
- Maintain a strong link which students can leverage through co-op and at post-graduation

Title is also being slightly modified to remove 'Techniques'. The remote sensing (RS) stream of courses follow course codes aligned with 71, while our set of 'sister' GIS courses follow the 81 course codes. The title change ensures alignment with the sister GIS course (GEOG 381: Advanced GIS)

Related agenda proposals: N/A

Consultations

Consultation through the process for the introduction of a new subject code.

2025-10-08: Math ADUG Benoit Charbonneau expressed support for program name change on behalf of Faculty of Mathematics.

Course Information

Faculty

Faculty of Environment

Academic Unit

Department of Geography and Environmental Management

Proposed

Subject Code
GDS

Existing

Subject Code
GEOG

Number
371

Course Level
300

Proposed

Advanced Remote Sensing

Existing

Title
Advanced Remote Sensing Techniques

Proposed

Abbreviated Title
Advanced Remote Sensing

Existing

Abbreviated Title
Adv Remote Sensing Techniques

Undergraduate Communication Requirement Identifier
No,

Description
Advanced image processing techniques of digital remote sensing measurements (e.g. radar systems, optical and infrared systems) from ground, aircraft and satellite instrument systems. Techniques are applied to the study of physical and human environments.

Units
0.50

Exceptions to Fees or Academic Progress Units
No,

Components
LaboratoryLecture

Primary Component
Lecture

Grading Information

Standard Course Grading
Yes,

Cross-Listing Information

Is this course cross-listed?
No,

Repeatable Courses

Can this course be repeated for credit?
No,

Enrolment Rules

Consent to Add
No consent required,

Consent to Drop
No consent required,

Prerequisites

Must have completed the following:

- GEOG271 - Earth from Space Using Remote Sensing (0.50)

Corequisites

No Rules

Antirequisites

1. Not completed nor currently enrolled in: GEOG371

Course Notes

Workflow Information

Workflow Path
Committee approvals,

Faculty/AFIW Path(s) for Workflow

Faculty of Environment