

ENVS*2090 - Problem Solving in Environmental Biology

Winter 2025 Course Outline

Section: 01

Credits: 0.50

Land Acknowledgement: Guelph

The University of Guelph resides on the ancestral lands of the Attawandaron people and the treaty lands and territory of the Mississaugas of the Credit. We recognize the significance of the Dish with One Spoon Covenant to this land and offer respect to our Anishinaabe, Haudenosaunee and Métis neighbours. Today, this gathering place is home to many First Nations, Inuit, and Métis peoples and acknowledging them reminds us of our important connection to this land where we work and learn.

Calendar Description

This course provides an introduction to current issues and problems in environmental biology. Approaches to characterizing and addressing problems through the systematic application of the scientific method will be critically examined. Students will have the opportunity to practice both oral and written presentation skills.

Prerequisite(s): BIOL*1070, BIOL*1090, CHEM*1050, MATH*1080

Department(s): School of Environmental Sciences

Lecture Schedule

MonWed 8:30am-9:20am in ROZH*109 (1/6 to 4/21)

Lab / Seminar Schedule

Day	Time	Location
Mondays	12:30 pm - 2:20 pm	ALEX 265

Instructor Information

Marc Habash

Email: mhabash@uoguelph.ca

Additional Support

Communicating with Your Instructor

During the course, your instructor will interact with you on various course matters on the ENVS*2090 CourseLink website using the following ways of communication:

- **Announcements:** The instructor will use Announcements on the Course Home page to provide you with course reminders and updates. Please check this section frequently for course updates from your instructor.
- **Ask Your Instructor Discussion Thread:** Use this CourseLink discussion forum to ask questions of your instructor about content or course-related issues with which you are unfamiliar. If you encounter difficulties, the instructor is here to help you. Please post general course-related questions to the discussion forum so that all students have an opportunity to review the response. To access this discussion forum, select Discussions from the Tools dropdown menu. If the instructor does not respond to your question within 24 hours, do send an email to the instructor indicating a question is pending in Discussions.
- **Email:** If you have a conflict that prevents you from completing course requirements or have a question concerning a personal matter, you can send your instructor a private message by email. The instructor will attempt to respond to your email within 24 hours.

- **In-person meeting or Video Call:** If you have a complex question you would like to discuss with your instructor, you may book an in-person meeting or video meeting on Zoom (or alternate platform being used by your instructor). In-person or video meetings depend on availability and are booked on a first come first served basis.

Textbooks

Group	Title	Author	ISBN
Required	Experimental Design for the Life Sciences (4th edition)	G. D. Ruxton & N. Colegrave	978-0198717355
Required	How to Do Ecology: A concise Handbook (2nd edition)	R. Karban, M. Huntzinger and I.S. Pearse	978-0691161761
Required	Statistics: A very short introduction	David J. Hand	978-0199233564

Learning Resources

Required Textbooks

1. Experimental Design for the Life Sciences (4th edition)
2. Title: How to Do Ecology: A concise Handbook (2nd edition)
3. Statistics: A very short introduction

Cost of Textbooks and Learning Resources

Textbook / Learning Resource	Required / Recommended	Cost
Experimental Design for the Life Sciences (4th edition)	Required	\$61.99 (Paperback, www.amazon.ca (http://www.amazon.ca)) \$58.99 (Paperback, https://global.oup.com/academic/product/experimental-design-for-the-life-sciences-9780198717355?cc=ca&lang=en& (https://global.oup.com/academic/product/experimental-design-for-the-life-sciences-9780198717355?cc=ca&lang=en&)) \$33.99 (digital version, rent for 180 days, www.vitalsource.com (http://www.vitalsource.com)) \$39.22 (digital version, rent for 1 year, www.vitalsource.com (http://www.vitalsource.com)) \$52.29 ((digital version, rent for lifetime, www.vitalsource.com (http://www.vitalsource.com))
How to Do Ecology: A concise Handbook (2nd edition)	Required	None (available as an online eBook via the UofG library)
Statistics: A very short introduction	Required	None (available as an online eBook via the UofG library)

Students are advised that prices are often determined by the publisher or bookstore and may be subject to change.

Course Learning Outcomes

1. Apply the scientific method to characterize and evaluate problems in environmental biology.
2. Formulate research questions addressing a problem of biological origin.
3. Analyze the reliability, replicability and relevance of scientific evidence.

4. Undertake a research project to evaluate human impact on the environment.
5. Present written and oral works addressing problems in environmental biology.

Teaching and Learning Activities

Lecture Content

1. Research and Problem-solving
2. Problem characterization
3. Developing Research questions
4. Deduction and hypothesis testing
5. Experimental design
6. Use of statistics in science

Seminars/Labs

Attendance is mandatory. Labs/Seminars will be utilized for discussions related to class projects, for class presentations, and to conduct research projects.

Seminar and Lab Schedules

Week 1: Discussing Projects 1 and 3

Week 2: Discussion Project 2 and 3

Week 3: Meetings with groups to discuss Project 3 ideas

Week 4: Project 1 presentations

Week 5: Meetings with groups to discuss Project proposals

Week 6: Project 3 Proposal presentations

Week 7: Project 3 Workshop I

Week 8: Project 3 Workshop II

Week 9: Project 3 Workshop III

Week 10: Project 3 Workshop IV

Week 11: Project 3 Poster reviews

Week 12: Project 3 Poster presentations

Assessment Breakdown

Description	Weighting (%)	Due Date
Project 1: Characterizing an Environmental Problem of Biological Origin: Invasive Species	25%	Presentation (10%) - group (Jan. 27 and 29) Presentation reflection (5%) - individual (Jan. 29) Position paper (10%) - individual (Feb. 14)
Project 2: Solving a Research Problem: Measuring the Impact of Human Activity in Biological Systems	20%	Critical evaluation of a research paper (March 14)

Project 3: Solving a Research Problem: Conducting an Experiment to Evaluate Human Impact on the Environment	40%	Project Proposal Presentation (10%) - group (Feb. 10 and 12) Final Presentation/Poster (10%) - group (Mar. 31 and Apr. 2) Peer Review (5%) - individual (April 4) Final Project Report (15%) - individual (April 8)
Lecture Test	15%	March 26

Last Day to Drop Course

The final day to drop Winter 2025 courses without academic penalty is the last day of classes: April 04

After this date, a mark will be recorded, whether course work is completed or not (a zero is assigned for missed tests/assignments). This mark will show on the student's transcript and will be calculated into their average.

Course Grading Policies

Submission of Assignments

Assignments should be submitted electronically via the online Dropbox tool. When submitting your assignments using the Dropbox tool, do not leave the page until your assignment has successfully uploaded. To verify that your submission was complete, you can view the submission history immediately after the upload to see which files uploaded successfully.

The system will also email you a receipt. Save this email receipt as proof of submission.

Be sure to keep a back-up copy of all of your assignments in the event that they are lost in transition. In order to avoid any last-minute computer problems, your instructor strongly recommends you save your assignments to a cloud-based file storage (e.g., OneDrive), or send to your email account, so that should something happen to your computer, the assignment could still be submitted on time or re-submitted.

It is your responsibility to submit your assignments on time as specified on the Schedule. Be sure to check the technical requirements and make sure you have the proper computer, that you have a supported browser, and that you have reliable Internet access. Remember that technical difficulty is not an excuse not to turn in your assignment on time. Don't wait until the last minute as you may get behind in your work.

If, for some reason, you have a technical difficulty when submitting your assignment electronically, please contact your instructor or CourseLink Support (<http://spaces.uoguelph.ca/ed/contact-us/>).

Late Assignment

If an assignment is submitted late to the Dropbox tool, the full allocated mark will be reduced by 10% per day after the deadline for the submission of the assignment to a limit of three (3) days at which time access to the Dropbox folder will be closed.

Extensions will be considered for medical reasons or other extenuating circumstances. If you require an extension, discuss this with the instructor as soon as possible and well before the due date. Barring exceptional circumstances, extensions will not be granted once the due date has passed. These rules are not designed to be arbitrary, nor are they inflexible. They are designed to keep you organized, to ensure that all students have the same amount of time to work on assignments, and to help to return marked materials to you in the shortest possible time.

Course Policy on Group Work

The following assignments will be prepared and submitted as groups:

- Project 1: Presentation
- Project 3: Proposal Presentation
- Project 3: Final Poster Presentation

Students should notify the instructor as soon as possible if any issues with distribution of effort do occur, so they can be resolved prior to the submission of the assignment. For Project 3 there will be a peer review worth 5% that must be completed by all group members. If there are any discrepancies with the Peer reviews, the instructor may request each group member submit a distribution of effort (DOE) and provide examples to support of the work they completed.

Course Standard Statements

Course Policies

Assessment Information and Use of Turnitin

Information for Projects #1, 2 and 3 will be made available to students in class and on CourseLink.

The use of generative AI (e.g. ChatGPT and other similar technologies) can be used to help identify a topic, for example a research question for Project #3. However, such technologies are not to be used to generate any components of your written or oral assignments. The use of grammar/spell check software is acceptable to aid with grammar and spelling.

In this course, your instructor will be using Turnitin, integrated with the CourseLink Dropbox tool, to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph.

All submitted assignments will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing academic misconduct. In this course, you may screen your own assignments for Projects #1, 2, and 3 through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.

Grades and Feedback

Unofficial assessment marks will be available in the Grades tool of the course website.

Your instructor will attempt to have grades posted online within 2 weeks of the submission deadline, if the assignment was submitted on time. Once your assignments are marked you can view your grades on the course website by selecting Grades from the Tools dropdown menu on the navbar. Your course will remain open to you for seven days following the last day of the final exam period. At least 20% of your final grade will be graded by the 40th day of class.

University of Guelph students can access their final grade by logging into WebAdvisor (<https://webadvisor.uoguelph.ca>) using your U of G central ID).

Course Technology Requirements

System and Software Requirements (Software)

This course will use a variety of technologies including:

- CourseLink (main classroom)
- Zoom

To help ensure you have the best learning experience possible, please review the list of system and software requirements: <https://opened.uoguelph.ca/student-resources/system-and-software-requirements>

CourseLink System Requirements

You are responsible for ensuring that your computer system meets the necessary system requirements. Use the browser check tool to ensure your browser settings are compatible and up to date. (Results will be displayed in a new browser window).

URLs: <http://spaces.uoguelph.ca/ed/system-requirements/>; <https://courselink.uoguelph.ca/d2l/systemCheck>

CourseLink

This course is being offered using CourseLink (powered by D2L's Brightspace), the University of Guelph's online learning management system (LMS). By using this service, you agree to comply with the University of Guelph's Access and Privacy Guidelines. Please visit the D2L website to review the Brightspace privacy statement and Brightspace Learning Environment web accessibility standards.

URLs: <http://www.uoguelph.ca/web/privacy/> <https://www.d2l.com/legal/privacy/> (<http://www.d2l.com/legal/privacy/>) <https://www.d2l.com/accessibility/standards/> (<http://www.d2l.com/accessibility/standards/>)

Technical Support

If you need any assistance with the software tools or the CourseLink website, contact CourseLink Support:

Email: courselink@uoguelph.ca
Tel: 519-824-4120 ext. 56939
Toll-Free (CAN/USA): 1-866-275-1478
Support Hours (Eastern Time):
Monday thru Friday: 8:30 am–8:30 pm
Saturday: 10:00 am–4:00 pm

Sunday: 12:00 pm–6:00 pm

Zoom

Zoom is a collaboration service that provides shared conversation spaces to help teams coordinate and communicate information. If necessary, this course will use Zoom for one on one meetings with your Instructor and for class lecture and seminar sessions, when remote access is required. It is recommended that you use the desktop version of Zoom. As a student you are responsible for learning how to use Zoom and its features.

For Zoom Support visit the Open Ed Student Portal on the UofG website for more information.

URL: <https://opened.uoguelph.ca/instructor-resources/web-conferencing-options#Zoom>

Technical Skills

As part of your learning experience, you are expected to use a variety of technologies for assignments, lectures, teamwork, and meetings. In order to be successful in this course you will need to have the following technical skills:

- Manage files and folders on your computer (e.g., save, name, copy, backup, rename, delete, and check properties);
- Use office applications (e.g., Word, PowerPoint, Excel, or similar) to create documents;
- Be comfortable uploading and downloading saved files;
- Communicate using email (e.g., create, receive, reply, print, send, download, and open attachments);
- Navigate the CourseLink learning environment and use the essential tools, such as Dropbox, Discussions, and Grades (the instructions for this are given in your course);
- Access, navigate, and search the Internet using a web browser (e.g., Firefox, Internet Explorer); and
- Perform online research using various search engines (e.g., Google) and library databases.

Contact your course instructor if you need support with any of the above.

Library Access (Other)

As a student, you have access to the University of Guelph's library collection, including both physical and electronic materials. For information on checking out or couriering physical library items, accessing electronic journals and returning items to the library, visit the library's website.

If you are studying off campus and would like to access the library's electronic resources, use the Off Campus Login and login using your Single SignOn credentials or using your last name and library barcode. URLs: <https://www.lib.uoguelph.ca/> (<http://www.lib.uoguelph.ca/>); <https://www.lib.uoguelph.ca/campus-login> (<http://www.lib.uoguelph.ca/campus-login/>)

Standard Statements for Undergraduate Courses

Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-misconduct/>) is outlined in the Undergraduate Calendar.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability. Use of the SAS Exam Centre requires students to make a booking at least 10 days in advance, and no later than the first business day in November, March or July as appropriate for the semester. Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. For students at the Guelph campus, information can be found on the SAS website. (<https://www.uoguelph.ca/sas/>)

Accommodation of Religious Obligations

If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements.

See the Academic calendar for information on regulations and procedures for Academic Accommodations of Religious Obligations (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-accommodation-religious-obligations/>).

Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all undergraduate students except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in the Undergraduate Calendar - Dropping Courses (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/dropping-courses/>).

Email Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

Health and Wellbeing

The University of Guelph provides a wide range of health and wellbeing services at the Vaccarino Centre for Student Wellness (<https://wellness.uoguelph.ca/>). If you are concerned about your mental health and not sure where to start, connect with a Student Wellness Navigator (<https://wellness.uoguelph.ca/navigation/>) who can help develop a plan to manage and support your mental health or check out our mental wellbeing resources (<https://wellness.uoguelph.ca/shine-this-year/>). The Student Wellness team are here to help and welcome the opportunity to connect with you.

Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

Recording of Materials

Presentations that are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Academic Calendars (<http://www.uoguelph.ca/registrar/calendars/?index>) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the Undergraduate Calendar for information on regulations and procedures for Academic Consideration. (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/>)