
ENVS*3020 - Pesticides and the Environment

Winter 2024 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 examines the role and use of pesticides by various facets of society and the effect of these pesticides on biological activities in the environment. Preparation of a research proposal is required for the course.

Prerequisite(s): [BIOL*1040 or (2 of BIOL*1050, BIOL*1070, BIOL*1080, BIOL*1090)], CHEM*1040

Department(s): School of Environmental Sciences

Lecture Schedule

MonWedFri 8:30am-9:20am in MCKN*121 (1/8 to 4/23)

Lectures will occur on Mondays, Wednesdays, and Fridays from 8:30 to 9:20 am in the McKinnon Building Room 121.

Lectures will start on Monday, January 8th and continue to Monday, April 8th.

There will be no lectures on 1) Monday, February 19th, 2) Wednesday, February 21st, 3) Friday, February 23rd, and 4) Friday, March 29th.

Instructor Information

Ryan Prosser, Ph.D.

Associate Professor

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Office: The Edmund C. Bovey Administration Building (ECBA), Room 2226

Dr. Prosser completed his PhD at the University of Guelph in the School of Environmental Sciences. Before returning to Canada to do his PhD, Ryan was a high school chemistry teacher in Kuwait for six years. Following his PhD, he was a post-doctoral fellow for the Aquatic Contaminants Research Division of Environment and Climate Change Canada. To learn more about Dr. Prosser's research, visit his website (www.wisdomofthemoose.com) or his Google Scholar site (<https://scholar.google.ca/citations?user=EI5v7zAAAAAJ&hl=en>)

Liam O'Hara

PhD Candidate

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Additional Support

Required Textbook and Readings

***Pesticides and the Environment* by Prosser & Solomon 2 Ed.**

E-book and soft cover available from [Amazon.ca](https://www.amazon.ca)

https://www.amazon.ca/Pesticides-Environment-Ryan-Prosser-ebook/dp/B09NH3ZR5N/ref=tmm_kin_swatch_0?_encoding=UTF8&qid=1704484336&sr=8-2 (https://www.amazon.ca/Pesticides-Environment-Ryan-Prosser-ebook/dp/B09NH3ZR5N/ref=tmm_kin_swatch_0/?_encoding=UTF8&qid=1704484336&sr=8-2)

- Week 1 - Chapter 1
- Week 2 - Chapter 2, Sections 2.1.1 to 2.2
- Week 3 - Chapter 3, Sections 3.1 to 3.2
- Week 4 - Chapter 3, Sections 3.3
- Week 5 - Chapter 9
- Week 6 - Chapter 10
- Week 7 - Chapter 11
- Week 8 - Chapter 12
- Week 9 - Chapter 13
- Week 10 - Chapter 14
- Week 11 - Chapter 16
- Week 12 - Chapter 17

Course Website

CourseLink (<https://courselink.uoguelph.ca/shared/login/login.html>) (powered by D2L's Brightspace) is the course website and will act as your classroom. It is recommended that you log in to your course website every day to check for announcements, access course materials, and review the weekly schedule and assignment requirements.

<https://courselink.uoguelph.ca/shared/login/login.html>

Learning Resources

Campus Resources

If you are concerned about any aspect of your academic program: Make an appointment with a Program Counsellor (<https://www.uoguelph.ca/uaic/programcounsellors/>) in your degree program. If you are struggling to succeed academically: There are numerous academic resources offered by the Learning Commons (<https://www.lib.uoguelph.ca/using-library/spaces/learning-commons/>) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills.

Course Learning Outcomes

1. Gain a perspective of the historical and current applications of pesticides and the benefits and drawbacks of their use.
2. Be able to describe methods of classifying pesticides based characteristics including use and mode of action.
3. Be able to understand chemical, physical and biological properties of pesticides that are important for predicting their fate and impact in the environment.
4. Gain experience in formulating objective research questions to address current pesticide-related questions.
5. Gain an understanding of the role of risk assessment in monitoring and managing existing and emerging concerns with pesticides.
6. Be aware of regulations governing the use of pesticides locally and internationally.
7. Be able to extrapolate from the principles learned in this course to a broader range of environmental issues.

Teaching and Learning Activities

Research Proposal

The objectives of the research proposal is for you to experience, as much as possible, the role of the environmental scientist who will attempt to obtain funding to carry out research on an environmental problem involving pesticides. This will provide you with an opportunity to independently expand your understanding of selected issues in Pesticides in the Environment.

For this written assignments please use the following parameters, 12-point font, Times New Roman, 2.5-cm margins, your name in the header of assignments, page numbers included, and topic and research question at the top of the first page of all assignments. All assignments needs to include continuous line numbering. For continuous line numbering, in Word, go to the **Layout** tab and choose the **Line Numbers** drop-down menu, and choose **Continuous**.

PLEASE SUBMIT YOUR RESEARCH PROPOSAL AS A WORD DOCUMENT

Research Proposal Topic Selection

Select your topic for the Research Proposal assignment by self-enrolling in a Topic Group. Select **Groups** from the **Tools** dropdown menu to self-enroll in a group. After you self-enroll in a topic via the **Groups** tool.

Each topic is limited to four (4) students, and will be allocated on a first-come first-served basis. If you do not self-enroll by the deadline, then you will not receive the 5% grade awarded for completing your enrollment and will be assigned a topic by your instructor based on topic availability.

Research Proposal

These sections of a proposal introduce a scientifically literate reviewer (who is not necessarily an expert in the field of your research) to your topic, guiding them to the current knowledge gap your research will address and explain the purpose of your proposed work. Your Introduction will serve as a concise literature review while the Justification will outline reasons that your proposed research is important.

Your research proposal will contain four (4) sections: Introduction, Objectives, Justification, and Bibliography. Your research proposal should be no longer than two pages in length (not including your list of references). Please see formatting parameters above. In the Introduction, you should provide a short background on the topic of your research proposal and a summary of what research has already been done. Remember that individuals evaluating research proposals may not be accomplished scientists in the specialized areas of your proposal topic. Evaluators could be government bureaucrats or scientists, non-governmental organization employees, or members of a community group. Consequently, you want to provide the reader with background information on your specific topic and a summary of the research that has already been completed in the literature.

The Introduction section should lead the reader to the objective(s) of your project. An objective is a clear action that will contribute to answering your research question. See example below:

Topic: freshwater snails and herbicide surfactants

Research question:

Can herbicide surfactants have an adverse effect on freshwater snail reproduction?

Objectives:

- 1) Perform acute and chronic toxicity tests with the surfactant POEA on the freshwater snail *Lymnaea stagnalis* (juvenile and adult snails).
- 2) Perform a hazard assessment of POEA to *Lymnaea stagnalis* by comparing the effect concentrations (e.g., LC50s, EC50s) determined from the tests in Objective 1) to concentrations reported in the environment.

Midterm Examination

The midterm examination will take place in class on **Wednesday, February 28th**. The examination will cover all of the material presented in class and in the assigned readings up to Friday, February 16th.

Final Examination

The final examination will occur on **Friday, April 19th from 8:30 to 10:30 pm**. The finale examination will cover all of the information covered in class (including guest lectures) and the information covered in the assigned readings.

Assessment Breakdown

Description	Weighting (%)	Due Date
Research Proposal Topic Selection	5%	Self-enrolment using Groups tab in Courselink; Friday, January 19th, 11:59 pm (before midnight)
Research Proposal	25%	Submit to dropbox folder in Courselink by Friday, February 16th, 11:59 pm (before midnight)
Midterm Examination	30%	Wednesday, February 28th, 8:30 to 9:20 am
Final Examination	40%	Friday, April 19th, 8:30 to 10:30 am

Final Exam

Date: Apr 19

Time: Fri 8:30am-10:30am

Location: TBA *Please see Web Advisor closer to the date of scheduled final for location.*

To understand rules and regulations regarding Examinations students are encouraged to read Student's Responsibilities (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/examinations/>)

If the student is unable to meet the final exam requirements due to medical, psychological or compassionate circumstances they are encouraged to review Student's Responsibilities in the Academic Consideration, Appeals and Petitions (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/>) section of the Academic Calendar.

Last Day to Drop Course

The final day to drop Winter 2024 courses without academic penalty is the last day of classes: April 08

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

Late Assignment

If you choose to submit your individual assignments to the **dropbox** tool late, the full allocated mark will be reduced by 5% per day after the deadline for the submission of the assignment to a limit of 10 days at which time access to the **dropbox** folder will be closed. Saturday and Sunday are included in the number of days after the deadline for the submission of the assignment.

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.

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/navigators/>) 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/>)