

Biology 4230A Ecosystem Health Course Outline

1. Course Information

Course Title: Biology 4230A – Ecosystem Health

Session: Fall 2022

Lectures: Tuesday 11:30 am – 1:30 pm; Thursday 11:30 am – 12:30 pm

Location: Physics and Astronomy Building, Room 34.

List of Prerequisites

Biology 2483A/B or permission of the instructor or registration in year 4 of an Honours Specialization offered by the Department of Biology, Environmental Science or the Basic Medical Sciences Department or a Major in Ecosystem Health.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor Information

Instructor: Dr. Brian Branfireun, Professor, Department of Biology.

Course-related email must be sent to bio4230@uwo.ca. Emails from students sent to other email addresses concerning course-related matters will not be responded to. Students must use their Western (@uwo.ca) email addresses when contacting the instructor. Emails from other domains (e.g. gmail) will not be responded to. Although the course email address (bio4230@uwo.ca) will be reviewed and responded to within one business day and during normal business hours, we cannot guarantee response to questions within the 24-hour period prior to the deadline for graded work.

Office hours will be held weekly on Wednesdays from 9:30 – 10:30 am in an open Zoom session that will be linked in your OWL calendar. Any student may attend this session at any time to engage in question and answer.

Individual meetings (virtual or in-person) may be requested at any time to address matters that are not suitable for office hours. Use the course email address above to request a meeting with the instructor.

3. Course Syllabus, Schedule, Delivery Mode

[Official Calendar Description]. A characterization of ecosystems, contaminants, and the human health concerns. Course material will cover the production, transport, transformation and fate of environmental contaminants, with an emphasis on their anthropogenic impacts. Emphasis will include the assessment of human health exposure and biomarkers of environmentally associated disease.

Course Objectives

The goals of this course are to:

- a) Explore how anthropogenic activity impacts ecosystems, and how those impacts feed back to affect human health.
- b) Without any expectation of in-depth prior knowledge, provide a solid background into the science of pollutant release and cycling, biological toxicity, human exposure, and direct and indirect impacts on health and well-being using well known examples of organic and inorganic pollutants in the environment (DDT, PCBs, Hg, Cr).
- c) Identify the broader dimensions of negative ecosystem-human health interactions beyond pathology (e.g. enviro-social determinants of health; chemophobia; food security).
- d) Teach you to critically read and evaluate scientific papers from the primary literature. Lectures will be supplemented with in-depth readings to demonstrate methodological, applied or theoretical principles in ecosystem health and environmental toxicology.

Learning Outcomes

Through the lecture material delivered and assigned readings, in exam assessments students should be able to:

- a) Describe/define ecosystems, ecosystem health, and environment-human health interactions.
- b) Understand and describe the release, movement, transformation and biological involvement of important environmental pollutants such as mercury.
- c) Understand and describe the health implications and pathways of exposure to different organic and inorganic pollutants and toxins.

Key Sessional Dates (Fall 2022)

Classes begin: September 8, 2022

Fall Reading Week: October 31 – November 6, 2022

Classes end: December 8, 2022

Exam period: December 10 – 22, 2022

Delivery Mode and Contingency Plan for Online Learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

4. Course Materials

Website: <http://owl.uwo.ca>. PDF files of lecture presentations will be posted on OWL. These files will be available in PDF format only. The course website will be the primary method of communication with students outside of lecture. All important documents (syllabus, lectures, assigned readings, updates etc.) will be posted to the website. It is your responsibility to check your uwo.ca email and the course OWL website frequently.

Textbook: There is no assigned textbook for this course.

Required Readings: PDFs/links will be posted on the course OWL website regularly. Students are expected to complete readings before corresponding discussions associated with that reading (identified as part of the lecture schedule to be provided and announced weekly). These readings are also to be incorporated into the Learning Portfolio assignment for this course and are examinable (see below).

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

All course material will be posted to OWL: <http://owl.uwo.ca>.

If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements

Although the course is planned for conventional in-person, in-class delivery, you should be prepared for the contingency for online learning in the event of a COVID-19 resurgence. In this case, you must have access to a computer or tablet with the following:

- Stable internet connection
- A word processing application to complete written assignments
- Zoom® application installed
- Working microphone and webcam

A stable internet connection is needed for the attendance of office hours, and in the event of a pivot to online learning, attendance of synchronous lectures and taking of tests and exams. A dedicated wired network connection is preferred. (most home WiFi routers support wired ethernet connectivity) Off-campus shared WiFi networks are the least reliable and should not be trusted for critical online activities such as tests and exams where a stable connection is essential.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Evaluation

Weekly Quizzes	10 @ 2% each (completed in OWL)	20%
Learning Portfolio Submission 1	Due October 7	10%
Learning Portfolio Submission 2	Due November 4	15%
Learning Portfolio Submission 3	Due December 5	15%
Final exam (cumulative)	Scheduled by University	40%

Weekly Quizzes

Short, timed quizzes will be administered weekly through OWL and will comprise 4-6 questions pertaining to materials covered in the previous lecture or assigned readings. Your final grade for the quiz scores will be for the top 10 of 12 quizzes.

Learning Portfolio

Students will assemble a learning portfolio on a continuous basis over the course of the semester. A learning portfolio is a purposeful collection of student work that exhibits a student's effort, progress, achievements and competencies gained during the course. The portfolio will be assessed at three times over the term as it is developed. Explicit guidance on this component of the course evaluation will be provided in dedicated documents and discussion in class.

Examination

There is a cumulative final exam in this course (3 hrs). Students are responsible for material presented in lecture and in the assigned readings. You can expect the exam to include any or all of the following question types: multiple choice, matching, fill-in-the-blank, short answer and/or essay.

The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

No make up is available for weekly quizzes. Missed quizzes are accommodated by tallying the top 10 of 12 quizzes, so up to two quizzes may be missed without grade consequence.

Assessments worth 10% or more of the overall course grade:

For work totalling 10% or more of the final course grade (Learning Portfolio submissions), you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Accommodation for missed Learning Portfolio submissions will be handled on a case by case basis, but will generally take the form of an extension to the due date.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at <https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at: [https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf).

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

There are no aids of any kind permitted during any formal assessment (quizzes, exams) for this course.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.