

ENVS*3370 - Terrestrial Ecosystem Ecology

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

In this course, the ecosystem is the biological level of organization of interest. Living organisms and their physical environment are considered as components of an integrated system. Key ecosystem processes such as energy flow, carbon and nutrient cycling, and succession, and the controls on these processes, are examined. The impacts of human activity and global change on ecosystem structure and function are investigated.

Prerequisite(s): BIOL*2060 or ENVS*2330

Department(s): School of Environmental Sciences

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Lecture Schedule

MonWedFri 1:30pm-2:20pm in CRSC*116 (1/8 to 4/23)

Instructor Information

Catherine Dieleman

Email: cdielema@uoguelph.ca

GTA Information

Busayo Kodaolu

Email: bkodaolu@uoguelph.ca

Textbooks

Group	Title	Author	ISBN
Required	Principles of Terrestrial Ecosystem Ecology, 2nd Edition	Chapin, Matson and Vitousek	

Learning Resources

Required Resources

Course materials, including lecture notes and recordings, will be available online through the class Courselink page.

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.

Library Course Reserve (Ares)

For this course, our textbook is available free of charge online via the University of Guelph McLaughlin Library. To access these items, select **Ares** on the navbar in CourseLink. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit How to Get Course Reserve Materials (<https://lib.uoguelph.ca/find/course-reserves-ares/how-get-course-reserve-material/>).

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning Operations and Reserve Services staff at:

Tel: 519-824-4120 ext. 53621 | Email: libres2@uoguelph.ca | Location: McLaughlin Library, First Floor, University of Guelph

Course Learning Outcomes

1. Explain the major processes and mechanisms that control the flow and storage of energy and the cycling of material in an ecosystem.
2. Discuss major pathways by which carbon, nitrogen, phosphorus and water cycle, and energy passes through terrestrial ecosystems.
3. Describe how human activity impacts ecosystems.
4. Understand how ecosystem ecology differs from other areas of ecology.
5. Critically analyze ecosystem ecology-related ideas, issues, arguments and literature.

University and School Level Learning Outcomes

In addition, the course aims to meet some of the learning objectives developed by the School of Environmental Sciences (SESLO) and the learning outcomes put forward by the University of Guelph (UGLO):

- Discover relationships within and between biotic and abiotic components of environments and their significance (SESLO1)
- Demonstrate the ability to find and critically evaluate scientific information (SESLO2)
- Effectively communicate ideas and information in graphic and written formats, while demonstrating fluency in the terminology of environmental sciences (SESLO3)
- Choose and utilize appropriate quantitative and qualitative methods to analyze and interpret environmental data (SESLO4)
- Demonstrate personal and professional integrity by respecting diverse points of view (SESLO5)
- Critical and creative thinking (UGLO1), literacy (UGLO2), communicating (UGLO3)

Schedule of Topics and Assignments

Week of	Topic	Activities	Due:
1/8	Course Overview Ecosystem Concept	Lectures 1 - 3	
1/15	Ecosystem Structures Essay Writing Skills	Lectures 4 - 5 Essay Writing Skills Workshop	Initial Online Discussion Post Due - Jan 19, 2024
1/22	Soil Structures	Lectures 7 - 9	
1/29	Introduction to Carbon Dynamics Primary Productivity - GPP	Lectures 10 - 12	Final Discussion Post Due - Feb 2, 2024
2/5	Primary Productivity - GPP Ecosystem Respiration	Lectures 13 - 15	

2/12	Primary Productivity - NPP	Lectures 16 - 17 Wellness Lecture	Annotated Bibliography and Topic Due - Feb 16, 2024
2/19		Winter Break	
2/21		Winter Break	
2/23		Winter Break	
2/26	Decomposition Feedback and Review	Lectures 19 + 21 Midterm	Midterm - Feb 28, 2024
3/4	Decomposition	Lectures 22 - 24	
3/11	Decomposition NEP Nitrogen Cycling	Lectures 25 - 27	Data Analysis Assignment Due - Mar 15, 2024
3/18	Nitrogen Cycling	Lectures 28 - 30	
3/25	Stable States Disturbance Climate Change	Lectures 31 - 33	
3/29		Holiday - Classes Rescheduled to Monday April 8	
4/1	Wrap up and Review	Lecture 34	Final Essay Due - April 1, 2024
4/15	Final Exam	Final Exam	Final Exam - April 15, 2024

Assessment Breakdown

Description	Weighting (%)	Due Date
Lecture Participation - Half sheets	5%	Variable
Lecture Participation - Active learning problems	5%	Variable
Online Discussion	10%	Initial Post - Jan 19, 2024 Final Post - Feb 2, 2024
Essay Topic and Annotated Bibliography	10%	Feb 16, 2024
Midterm	15%	Feb 28, 2024
Data Analysis Assignment	15%	Mar 15, 2024
Essay	20%	Apr 1, 2024
Final Exam	20%	Apr 15, 2024

Final Exam

Date: Apr 15

Time: Mon 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

Submission of Assignments

Assignments are to be submitted online via Courselink before 8pm on the due date. If you require an extension on an assignment, please make a request to Dr. Dieleman in advance of the due date.

Late Assignment

Assignments submitted after the due date without an approved extension will receive a 10% mark reduction per day the assignment is late. Assignments submitted 10 days after the posted due date without an approved extension will not be accepted for grading. Secondary extensions (an extension to an already extended due date) are not provided except in the case of exceptional circumstances.

Group Work

All members of the group are expected to contribute equally, and will be given the same grade on any group-work assignments.

Course Standard Statements

Course Policies on Technology

All lecture slides will be posted to Courselink for later viewing and review. Independent electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

In-Class Participation Component

During the synchronous lectures there will be multiple opportunities to actively engage with the course material over a variety of tools. You will be introduced to these tools during the first lecture of the term. Five percent of your grade will be based on your engagement with these activities. The other five percent of your participation mark will be based off 'half sheet exercises' that occur in every synchronous lecture. During the half-sheet exercise, you will provide your initial answer to a given question at the start of lecture, and a revised version at the end lecture using the quizzes function on Courselink. To receive credit for this exercise both the initial and revised answers must be provided with evidence of original thought (i.e. answers must be relevant, answers must not be copied and pasted from provided lecture materials, classmates, or internet sources). Your lowest 10% of in-class assessments and your half sheet exercises will be dropped to adjust for missed synchronous lectures. If you cannot consistently attend synchronous lectures, please contact the course instructor via email as soon as possible to discuss.

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/>)