ENVS*4350 Forest Ecology Fall

2023 Course Outline

School of Environmental Sciences, University of Guelph

General Information

Course Title: Forest Ecology ENVS*4350 **Course**

Description:

This course will explore aspects of forest ecology with an emphasis on the ecological principles needed for sound forest management. Biotic and abiotic components of forest ecosystems will be discussed in the context of energy flow, nutrient cycling, forest succession and appropriate silvicultural systems.

Credit Weight: 0.5

Academic Department (or campus): School of Environmental Sciences

Campus: Guelph

Semester Offering: F

Class Schedule and Location: Tuesday, Thursday; 5:30pm – 6:50pm ALEX 218 – lectures will also be live streamed during lecture hours

Labs/seminars: Wednesday 8:30am-11:20am (ALEX 309); Wednesday 2:30pm -5:20pm (CRSC 403)

Instructor Information

Instructor Name: Dr. Catherine Dieleman

Instructor Email: cdielema@uoguelph.ca

Office location and office hours: Dr. Dieleman will be available meet with students before and after lectures or one-on-one by appointment.

GTA Information

GTA name: Sevendeep Kaur

GTA email: sevendee@uoguelph.ca

GTA name: Kassie Belanger

GTA email: kbelan01@uoguelph.ca

Course Content

Specific Learning Outcomes:

Upon successful completion of the course, students should be able to:

1. To understand the complexity of forest ecosystems at scales from individual organisms to landscapes;
2. To appreciate the importance of time to processes at work in forested systems;
3. To understand the processes of nutrient cycling and energy flow in the forest;
4. To appreciate how forest structure and function is affected by disturbance, both natural or anthropogenic;
5. To evaluate the potential for different forest management regimes to maintain forest functioning in various forest types;
6. To collect, analyze and interpret forest ecosystem-related field data;

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)

Students will have opportunities to achieve these objectives by completing the readings, assignments, and exam, as well as by attending lectures.

<u>Course Resources</u>

Required Texts: Readings as assigned by course instructor (journal articles and book chapters available online from the U of G library). Reading list will be posted to Courselink.

Recommended Texts (not required but useful resources for this course):
Linda Kershaw, Trees of Ontario, Lone Pine
Forest Ecology 5th Edition, Wiley
Forest Ecosystems 2nd Edition, Wiley

Lab Manual: N/A
Other Resources: Other course material will be available online through Courselink.

Field Trips: N/A
Additional Costs: N/A

Course Assignments and Tests:

Assignment or Test	**Due Date**	**Contribution to Final Mark (%)**	**Learning Outcomes Assessed**
Lecture Participation	Variable	Total 7.5% • Half sheet 2.5% • Active learning problem 5%	LO1, LO2, LO3, LO4, LO5, SESLO1, SESLO2
Lab Participation	Variable	2.5%	LO3, LO6, SESLO1, SESLO4, UGLO1, UGLO3
Midterm	Oct. 19th by 8 pm EST	17.5%	LO1, LO2, LO3, SESLO1, SESLO3, UGLO1, UGLO2, UGLO3
Lab Assignments • Tree ID • Forest inventory • Forest C Stocks • Forest Harvesting	Week of Oct 2nd Week of Oct 30th Week of Nov 13th Week of Nov 27th	Total: 32.5% • 10% • 7.5% • 7.5% • 7.5	LO3, LO6, SESLO1, SESLO4, UGLO1, UGLO3
Paper and Mini-Presentation	Presentations - Weeks of Nov 20 – 27th Final Paper – Dec 1st by 8 pm	Total: 20% (15% for the paper; 5% for the mini presentation)	LO1, LO2, SESLO2, SESLO3, SESLO5, UGLO1, UGLO2, UGLO3
Final Exam	Dec 15th by 8 pm EST	20%	LO1-5, SESLO1, UGLO1, UGLO3

Schedule of Lectures (approximate) and Labs:

Week	Lecture topics	Lab/Seminar activity
Sep 4	Welcome to Forest Ecology Forests in the news; Forests as part of the global ecosystem	NO LAB
Sep 11	Forests in space – variation across scales	NO LAB
Sep 18	Forest structure – from the canopy to the forest floor	Common Ontario Tree ID Intro + Practice (outdoors – please dress for the weather)
Sep 25	Forest soils – hidden worlds	Common Ontario Tree ID Intro + Practice (outdoors – please dress for the weather)
Oct 2	Forest carbon cycle and productivity	**Common Ontario Tree ID Lab Due** Forest Inventory Lab (outdoors – please dress for the weather)
Oct 9	Fall Study Break	NO LAB
Oct 16	Forest carbon cycle and productivity **Online Midterm Oct 19th**	NO LAB
Oct 23	Forest carbon cycle and productivity	Forest Inventory Data Analysis Lab
Oct 30	Forest nutrient cycling	**Forest Inventory Lab Report Due** Forest Carbon Stocks Lab (Outdoors – please dress for the weather)
Nov 6	Forest nutrient cycling	Forest Carbon Stocks Lab Analysis Lab
Nov 13	Forests in time – temporal change	**Forest Carbon Stocks Lab Due** Forest Harvesting Lab
Nov 20	Forest harvesting and management – past, present and future	Student mini-presentations
Nov 27	Wrap-up and Review Student mini-presentations	Student mini-presentations **Forest Harvesting Lab Due**

Final examination date and time: Dec 15th (Online)

Labs

Labs will be conducted in person, either outdoors in the Arboretum, or indoors in your assigned lab space. Outdoor labs will take place during the weeks of Sept 18th, Sept 25th, Oct 2nd, and Oct 30th. Due to scheduling constraints all labs will proceed rain or shine. There will be several lab assignments to be completed throughout the semester.

Course Policies

Grading Policies:

Assignments are to be submitted online via Courselink dropbox before 8 pm on the due date. Late assignments will be penalized with deductions of 10% of the full value per day late (so, if an assignment is worth 30%, 3/30 marks will be deducted per day late. An assignment that is 5 days late is guaranteed to receive a failing grade). If you require an extension on an assignment, you must make a request to Dr. Dieleman in advance of the due date.

Course Policy on Group Work: Work can be done in groups if specified by the instructor.

Course Policy regarding use of electronic devices and recording of lectures:

Zoom lectures will be recorded and posted to the Courselink site for the course. Electronic recording of in-person labs 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.

University Policies

Academic Consideration:

The University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.

Academic Misconduct:

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.

Detailed information regarding the Academic Misconduct policy is available in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.

Accessibility:

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or visit the Student Accessibility Services website (http://www.uoguelph.ca/csd/).

Course Evaluation Information:

End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the Course and Instructor Evaluation Website for more information.

Drop period:

Information about Dropping Courses can be found in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.

Additional Course Information

N/A