# Course Outline: ENVS*3270 Winter 2026

## General Information

**Course Title:** Forest Biodiversity

**Course Description:** This course examines biodiversity in forest ecosystems at a variety of scales, from genes to landscapes. Relationships between biodiversity and forest ecosystem structure, function, and stability are explored. Approaches to conserving biodiversity in managed forests are discussed and evaluated. Analyses of the relevant scientific literature and practical experience with methods of quantifying biodiversity are emphasized in seminars.

**Credit Weight:** 0.5

**Academic Department (or campus):** School of Environmental Sciences

**Campus:** Guelph

**Semester Offering:** W

**Class Schedule and Location:** Mondays, Wednesdays, Fridays 4:30 - 5:20 pm MCKN 029

**Labs/seminars:** Tuesdays 8:30 am - 11:20 am (ALEX 309), Tuesdays 2:30 am - 5:20 pm (ANNU 306 or ALEX 309)

## Instructor Information

Instructor Name: Dr. Catherine Dieleman
Instructor Email: cdielema@uoguelph.ca

## GTA Information

TA Name: Martha Osei-Yeboah
TA Email: moseiyeb@uoguelph.ca

TA Name: Kara Looyenga
TA Email: looyengk@uoguelph.ca

## Course Content

**Specific Learning Outcomes:**

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

1. define biodiversity and to describe its many components and scales (LO1);
2. discuss the drivers of biodiversity in forests and its importance for the maintenance of forest structure, function, and stability (LO2);
3. identify and to apply a variety of methods for the quantification of biodiversity in forests (LO3);
4. critically judge the suitability of approaches to conserving biodiversity in forests at the stand and landscape scale (LO4);
5. integrate, synthesize, and discuss current scientific literature regarding issues and debates in forest biodiversity and conservation (LO5);
6. be able to provide a qualitative and quantitative assessment of forest health and diversity (LO6).

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 exams, as well as by attending lectures and participating in seminar/lab discussions.

## Course Resources

**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:** N/A

**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:**

| **Deliverable** | **Due Date** | **Contribution to Final Mark (%)** | **Learning Outcomes Assessed** |
|---|---|---|---|
| Lab/seminar assignments (tree collection, data analyses) | Variable<br>Tree ID Assignment – **Week of Jan 26th**<br>Data 1 Assignment – **Week of Feb 9th**<br>Data 2 Assignment – **Week of Mar 9th** | 3 x 8%<br>=24% | LO3, LO5, LO6, SESLO2, SESLO3, SESLO4, SESLO5, UGLO1, UGLO2, UGLO3 |
| Lab/seminar discussions | Variable | • 8% (student-led discussion) +<br>• 4% (contribution to other discussions + participation in 'trade-offs lab')<br>=12% | LO5, SESLO5, UGLO1, UGLO3 |
| Lecture Participation | Variable | • Half sheet exercise – 2.5%<br>• Active learning problem – 2.5% | SESLO2, SESLO5 |
| Midterm quiz | • **Feb 27th via Courselink** | 15% | LO1, LO2, SESLO2, SESLO3, SESLO5 |

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| Presentation and annotated bibliography | • Presentations will take place in seminar periods during Mar 16 – Mar 27th<br>• **Annotated biblio due April 3rd** | 15% + 9% =24% | LO5, SESLO2, SESLO3, UGLO1, UGLO2, UGLO3 |
| Final exam | • **April 20th** | 20% | LO1, LO2, SESLO2, SESLO3, SESLO5 |

**Schedule of Lectures (approximate) and Labs/Seminars:**

| **Week** | **Lecture topics** | **Lab/Seminar activity** |
|---|---|---|
| 1. Jan 5 | Course welcome | No scheduled activities |
| 2. Jan 12 | Basics of biodiversity: definitions, basic concepts, history | Winter tree ID, etc. Tree collection assignment intro |
| 3. Jan 19 | Current state of global biodiversity | Winter tree ID, etc.<br>Tree collection assignment cont'd (optional) |
| 4. Jan 26 | Importance of forests to global biodiversity<br>Why are some forests more diverse than others? | Data analysis assignment 1<br>*Winter tree ID assignment Due* |
| 5. Feb 2 | How is biodiversity created and maintained in forests? | Student-led discussion 1 |
| 6. Feb 9 | How is biodiversity created and maintained in forests? (Continued) | Student-led discussion 2<br>*Data analysis assignment 1 due* |
| Feb 16 | READING WEEK | No scheduled activities |
| 7. Feb 23 | Review and midterm | Data analysis assignment 2 |
| 8. Mar 2 | How does biodiversity influence ecosystem functioning? | Student-led discussion 3 |
| 9. Mar 9 | How does biodiversity influence ecosystem stability? | Student-led discussion 4<br>*Data analysis assignment 2 due* |
| 10. Mar 16 | Forest biodiversity at the stand level (species diversity; structural diversity; genetic diversity; approaches to conserving stand-level biodiversity in forests) | Student presentations |

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| 11. Mar 23 | Forest biodiversity at the ecosystem and landscape levels (forest mosaics; forest edges; islands and fragments; conserving landscape-level biodiversity in forests) | Student presentations |
| 12. Mar 30 | Forest biodiversity management and review | Management trade-offs |

**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. 2.5 percent of your grade will be based on your engagement with these activities. The other 2.5 percent of your participation mark will be based off 'half sheet exercises' that occur weekly in 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 quiz 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 or online materials). Your lowest 10% of in-class assessments and your half sheet exercises will be dropped to adjust for missed synchronous lectures. If you cannot attend synchronous lectures, please contact the course instructor via email as soon as possible to discuss.

## Course Policies

**Grading Policies:**

Assignments are to be submitted online via Courselink dropbox before 11:59 pm on the due date unless otherwise stated. If you require an extension on an assignment, please make a request to Dr. Dieleman in advance of the due date prior to 5 pm. 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 an 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.

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

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.

## 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:**

Please check the latest academic calendar for details.

## Additional Course Information

N/A