



# **ENVS\*1040 Natural History of the Great Lakes Region**

Fall 2022

Section(s): 01

School of Environmental Sciences

Credit Weight: 0.50

Version 1.00 - September 06, 2022

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## **1 Course Details**

### **1.1 Calendar Description**

This course is an introduction to the ecological regions, habitats and biodiversity of the Great Lakes watershed with a focus on Southern and Central Ontario. Beginning with a survey of the physical environment of the region, including topography, geomorphology and glaciation, soils, hydrology and climate, the course explores each of the major ecological regions and habitats of the watershed in terms of their defining characteristics and biological communities, including representative flora and fauna.

**Restrictions:** Restricted to students in BIESP, BIESP:C.

### **1.2 Course Description**

This course examines the natural history of the Great Lakes region focusing on Ontario south of the Clay Belt. In the weekly labs students will be in the field looking at four habitats (woodland, wetland, meadow and urban) using a variety of observational approaches. Lectures will discuss the diversity of the region's landscapes, geology, habitats and biological communities. There are two major assignments for the course. In the One Square Metre Project students will make weekly or more frequent observations of a site and document the biological community and seasonal changes that they observe. In the Virtual Road Trip Project students will plan a trip across the region and explore the different landscapes and biological communities they would encounter using a variety of online resources. Both assignments extend over the entire semester. The course concludes with students making a short oral presentation on a selected aspect of their One Square Metre Project.

### **1.3 Timetable**

Timetable is subject to change. Please see WebAdvisor for the latest information.

### **1.4 Final Exam**

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

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## 2 Instructional Support

### 2.1 Instructional Support Team

<b>Instructor:</b>	Jonathan Schmidt Associate Professor
<b>Email:</b>	jonschm@uoguelph.ca
<b>Office Hours:</b>	I will be available by email this semester. Students can also book an online appointment by email.
<b>Instructor:</b>	Andrew Young Assistant Professor
<b>Email:</b>	andrew.young@uoguelph.ca

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## 3 Learning Resources

All materials for the course will be available on the CourseLink site, including extended versions of the lecture presentations with additional material and suggested readings. In addition links to a variety of online resources will be provided.

All detailed assignment instructions and marking rubrics will be posted on the CourseLink site

**There is no textbook for the course.**

A wide variety of other field guides will be available for reference in hard copy or online.

Each student will be provided with a hand-held magnifier for the duration of the semester.

Students are expected to wear seasonally appropriate clothing for field work. Sandals and other open footwear should not be worn.

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## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Recognize and characterize the major ecological regions and habitats of the Great Lakes Region with respect to their physical and biological features, including topography, geology, key species complexes, and their interrelationships.

2. Discuss the historical and current environmental impacts of human settlement and economic activities on the Great Lakes Region.
  3. Use a variety of observational and analytical methods to characterize the physical environment and biodiversity.
  4. Report on the interactions of the abiotic and biotic components of local ecological assemblages.
  5. Reflect upon and discuss their relationship to a locality in terms of their understanding of and interactions with its biotic and abiotic constituents.
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## 5 Teaching and Learning Activities

Lectures will be delivered online.

The expanded lecture notes will be provided on CourseLink.

All lab activities will occur in the Arboretum or elsewhere on campus. Meeting sites will be announced. Students should check the weather in advance and dress accordingly. Please have appropriate footwear - considerable walking will occur during most of the lab period. Masks will be strongly encouraged during group discussions.

The class discussions for the labs will be online.

The final lab will be used for student presentations. The location will be posted on CourseLink.

### 5.1 Lecture

**Fri, Sep 9, 9:30 AM**

**Topics:** Introduction to the Course @ Bovey Building Garden

**Mon, Sep 12, 9:30 AM**

**Topics:** Introduction to the area

**Wed, Sep 14, 9:30 AM**

**Topics:** Minerals

**Fri, Sep 16, 9:30 AM**

**Topics:** Hadean and Archaean Earth

**Mon, Sep 19, 9:30 AM**

**Topics:** The Proterozoic

**Wed, Sep 21, 9:30 AM**

**Topics:** Paleozoic Ontario

**Fri, Sep 23, 9:30 AM**

**Topics:** Ice Age Ontario

**Mon, Sep 26, 9:30 AM**

**Topics:** Post-glacial Ontario: Soil

**Wed, Sep 28, 9:30 AM**

**Topics:** Post-glacial Re-colonization

**Fri, Sep 30, 9:30 AM**

**Topics:** Post-European Contact Ontario

**Mon, Oct 3, 9:30 AM**

**Topics:** Great Lakes Limnology

**Wed, Oct 5, 9:30 AM**

**Topics:** Great Lakes Fish and Fisheries

**Thu, Oct 7, 9:30 AM**

**Topics:** Great Lakes Eutrophication and Benthification

**Wed, Oct 12, 9:30 AM**

**Topics:** Lake Hydrology

**Fri, Oct 14, 9:30 AM**

<b>Topics:</b>	Lake Plankton and Benthos
<b>Mon, Oct 17, 9:30 AM</b>	
<b>Topics:</b>	Lake Shorelines and Hydrophytes
<b>Wed, Oct 19, 9:30 AM</b>	
<b>Topics:</b>	Beaver Ponds
<b>Fri, Oct 21, 9:30 AM</b>	
<b>Topics:</b>	Rivers and Streams
<b>Mon, Oct 24, 9:30 AM</b>	
<b>Topics:</b>	Riverbanks
<b>Wed, Oct 26, 9:30 AM</b>	
<b>Topics:</b>	Shores of the Great Lakes
<b>Fri, Oct 28, 9:30 AM</b>	
<b>Topics:</b>	Marshes
<b>Mon, Oct 31, 9:30 AM</b>	
<b>Topics:</b>	Bogs and Peatlands
<b>Wed, Nov 2, 9:30 AM</b>	
<b>Topics:</b>	Introduction to Forests
<b>Fri, Nov 4, 9:30 AM</b>	
<b>Topics:</b>	Forest Canopy
<b>Mon, Nov 7, 9:30 AM</b>	
<b>Topics:</b>	Trunks and Bark

**Wed, Nov 9, 9:30 AM**

**Topics:** Fungi and Forests

**Fri, Nov 11, 9:30 AM**

**Topics:** Forest Floor: Seedlings and Ephemerals

**Mon, Nov 14, 9:30 AM**

**Topics:** Forest Floor: Cryptophytes

**Wed, Nov 16, 9:30 AM**

**Topics:** Forest Floor Fauna

**Fri, Nov 18, 9:30 AM**

**Topics:** Tallgrass Prairie

**Mon, Nov 21, 9:30 AM**

**Topics:** Agroecosystems

**Wed, Nov 23, 9:30 AM**

**Topics:** Roadsides and Alvars

**Fri, Nov 25, 9:30 AM**

**Topics:** Cliffs and Caves

**Mon, Nov 28, 9:30 AM**

**Topics:** Urban Ecology

**Wed, Nov 30, 9:30 AM**

**Topics:** Urban Ecology 2

**Fri, Dec 2, 9:30 AM**

**Topics:** Final day of class: 1m2 final reports due

## **5.2 Lab**

**Thu, Sep 15, 2:30 PM**

**Topics:** Geology Lab: Rocks

Location: Alexander Hall

**Thu, Sep 22, 2:30 PM**

**Topics:** Meadow Lab 1  
Meadows

Location: The Arboretum

**Sat, Sep 24, 8:45 AM**

**Topics:** Geology Field Trip: Glacial Landforms

Meet at Bovey, we will be bussing to different geologic features throughout Wellington County

**Thu, Sep 29, 2:30 PM**

**Topics:** Meadow Lab 2  
Plant Identification Workshop  
Plant Families

Location: The Arboretum

**Thu, Oct 6, 2:30 PM**

**Topics:** Meadow Lab 3  
Meadow Arthropods

Location: The Arboretum

**Thu, Oct 13, 2:30 PM**

**Topics:** Aquatics Lab 1  
Introduction to Ponds

Location: The Arboretum

**Thu, Oct 20, 2:30 PM**

**Topics:** NO LAB THIS WEEK -- STREAM FIELD TRIP WITH DR.  
SUE CHIBLOW WILL BE PART OF AQUATIC LAB 2

**Thu, Oct 27, 2:30 PM**

**Topics:** Aquatics Lab 3  
Aquatic Organisms

Location: Graham Hall Lab 1316

**Thu, Nov 3, 2:30 PM**

**Topics:** Forest Lab 1  
Tree Identification

Location: The Arboretum

**Thu, Nov 10, 2:30 PM**

**Topics:** Forest Lab 2  
Tree Mensuration

Location: The Arboretum

**Thu, Nov 17, 2:30 PM**

**Topics:** Forest Lab 3  
Litter Organisms

Location: Graham Hall lab 1316

**Thu, Nov 24, 2:30 PM**



**Topics:** Urban Ecological Survey

Location: Graham Hall Lab 1316

**Thu, Dec 1, 2:30 PM**

**Topics:** Class Presentations: One-metre square project

Location: Graham Hall Lab 1316

## 6 Assessments

### 6.1 Assessment Details

**Geology Lab Assignment (10%)**

**Due:** Mon, Oct 3, Submitted Online

**Learning Outcome:** 1, 2, 3, 4

**Meadow Habitat Report (10%)**

**Due:** Mon, Oct 17, Submitted Online

**Learning Outcome:** 1, 2, 3, 4

**Aquatic Habitat Report (10%)**

**Due:** Mon, Nov 14, Submitted Online

**Learning Outcome:** 1, 2, 3, 4

**Forest Habitat Report (10%)**

**Due:** Mon, Nov 28, Submitted Online

**Learning Outcome:** 1, 2, 3, 4

**Urban Survey Assignment (5%)**

**Due:** Mon, Dec 5, Submitted Online

**Learning Outcome:** 1, 2, 3, 4

**One Metre Square Location (0%)**

**Due:** Thu, Sep 15, Submitted Online

Provide instructors with location of site

**One Metre Square Progress Report 1 (5%)**

**Due:** Tue, Oct 4, Submitted Online

The report should contain the following:

- A map showing the location of the site
- A sketch map of the site
- A brief discussion (200 -250 words) of why you selected the site
- A brief (200-250 words) description of the site
- Examples of the plants and animals that you have observed at the site.

#### **One Metre Square Progress Report 2 (5%)**

**Due:** Tue, Nov 8, Submitted Online

The report should contain the following:

- Three sample journal entries.
- A revised map of the site.

#### **One Metre Square Final Report (15%)**

**Due:** Fri, Dec 2, Submitted Online

**Learning Outcome:** 1, 3, 4, 5

The final report includes a written paper and an oral presentation to the class.

#### **One Metre Square Presentation (5%)**

**Due:** Thu, Dec 1, Submitted Online

**Learning Outcome:** 1, 3, 4, 5

The final report includes a written paper and an oral presentation to the class.

#### **Virtual Road Trip Proposal (0%)**

**Due:** Wed, Sep 21, Submitted Online

Please provide the instructors with the proposed start and end points of your trip.

#### **Virtual Road Trip List of Pit Stops (0%)**

**Due:** Wed, Sep 28, Submitted Online

Please provide the instructors with the proposed start and end points of your trip.

#### **Virtual Road Trip Progress Report 1 (5%)**

**Due:** Mon, Oct 24, Submitted Online

**Learning Outcome:** 1, 2, 5

#### **Virtual Road Trip Progress Report 2 (5%)**

**Due:** Mon, Nov 21, Submitted Online

**Learning Outcome:** 1, 2, 5

#### **Virtual Road Trip Final Report (15%)**

**Due:** Fri, Dec 16, Submitted Online

**Learning Outcome:** 1, 2, 5

## 7 Course Statements

### 7.1 Late Assignments

Assignments that are submitted late without an approved reason (medical, personal) or prior approval of the instructors will have 10% deducted per day from their grades. Students encountering challenges in completing assignments on time are strongly encouraged to contact the instructors as soon as possible for support.

### 7.2 Safety

Students should be aware that we will be walking outdoors in the Arboretum for extended periods. Appropriate clothing and sun protection should be worn. Open shoes such as sandals are not suitable. Students with allergies (pollen, bees, etc.) should discuss any concerns and precautions with the instructors.

## 8 University Statements

### 8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

### 8.2 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. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

### 8.3 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 students (undergraduate, graduate and diploma) 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 their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

## 8.4 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.

## 8.5 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 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website

<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website

<https://www.ridgetownc.com/services/accessibilityservices.cfm>

## 8.6 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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 8.7 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.

## 8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

## 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## 8.10 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).

## 8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.

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