

Biology 4410F: Restoration Ecology

1. Course Information

Biology 4410F: Restoration Ecology, Fall 2022

Class hours: Thursday, 2:30-4:30pm, in FNB 2220

Lab hours: Thursday, 4:30-5:30pm, in FNB 2220

Although the timetable treats the lecture and lab hours as separate, this ought to be treated as a 3-hour continuous class. We will take breaks, and class will not always run the full three hours.

Office hours: Tuesday, 2:30-3:30pm, SSC 008 6216

List of Prerequisites

Biology 3442F/G and Biology 3445F

Unless you have either the requisites for this course or written special permission 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

Instructors	Email	Office	Office Hours
Dr. Eric Dusenge	mdusenge@uwo.ca	SSC 008 6216	Tuesday, 2:30-3:30pm Additional time available by request
Andrew Cook	acook85@uwo.ca		

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. Include the course name or number in the subject line of your email so that it is clear what course you are asking about.

3. Course Syllabus and Schedule

The theory and practice of restoration of habitats for native biodiversity. Topics include ecosystem functioning and relationships at various spatial scales as applied to restoration, invasive species management and reclamation of contaminated sites. The value of ecosystem services, financial and practical considerations will be considered.

Learning outcomes

Upon completion of the course, students will be able to:

1. Recognize local ecosystems and identify at least 10 species of plants by conducting field work and producing a plant collection assignment.
2. Describe the theoretical aspects of restoring different types of ecosystems by presenting and discussing case studies.
3. Apply content knowledge of restoring different types of ecosystems to real-world settings and contexts by creating a restoration plan for a local (or otherwise easily accessible) site.
4. Recognize current issues in restoration ecology, synthesize research and integrate information by creating a research report.

For each lecture, a list of learning objectives will be posted to the course OWL website.

Lecture schedule

The schedule of topics presented below is tentative and may change over the course of the semester. Note the field trip is tentatively scheduled for Saturday, September 24. This trip is required to complete the course.

Date	Lecture topics
Sept 8	Course outline with an introduction to Restoration Ecology (Chapter 1); The Community Model: Ecological Theory (Chapter 2)
Sept 15	Building a Restoration Plan, Part 1: Adaptive Restoration (Chapter 3); Guest lecture by Samuel Rycroft on tips on IDing plants followed by a field demonstration near campus; <i>Attendance today contributes to your participation mark</i>
Sept 22	Guest lecture by Rebecca Launchbury, Conservation Lands Manager, Thames Talbot Land Trust Building a Restoration Plan, Part 2: Site Description: - Inventory and Analysis, Onsite resources (Chapters 4 and 5)
Sept 24 (Saturday)	Field trip to Hawk Cliff Woods, managed by Thames Talbot Land Trust Transport arrangements to the site will be provided soon <i>Attendance today will be required</i>
Sept 29	Stakeholder Analysis Building a Restoration Plan, Part 3: The Master Plan; purpose, solutions, and goals (Chapter 6) <i>Reflection #1 due at 2:30pm (5%)</i>
Oct 6	Building a Restoration Plan, Part 4: The Implementation Plan and methods (Chapter 8)
Oct 13	Building a Restoration Plan, Part 5: The Monitoring Plan (Chapter 9) <i>Restoration project proposal due at 2:30pm (10%)</i>
Oct 20	FLEX time: either a field trip to a local restoration site (weather permitting) or time to discuss the presentations with a partner <i>Attendance today contributes to your participation mark</i>

Oct 27	Student presentations <i>Presentations (10%)</i> <i>Attendance today contributes to your participation mark</i>
Nov 3	Reading week – no class
Nov 10	<i>Midterm (20%)</i>
Nov 17	Building a Restoration Plan, Part 6: The Management Plan (Chapter 10) <i>Native plant collection due at 2:30pm (15%)</i>
Nov 24	Dealing with externalities: people, pests, and cross-boundary influences (Chapters 11, 12, and 13) <i>Reflection #2 due at 2:30pm (5%)</i>
Dec 1	A discussion (moderated by Eric Dusenge) of the restoration plans that you had put together. I suggest bringing your laptop today. <i>Attendance today contributes to your participation mark</i> <i>Final report due (30%) by 5pm on Friday, December 2</i>

4. Course Materials

There is no assigned textbook for this course. Much of the lecture material will be taken from *Introduction to Restoration Ecology* by Howell, Harrington, and Glass. I have included chapter numbers for those who have a textbook. I bought mine from Amazon.ca for \$75.

A .pdf version of Principles and Guidelines for Ecological Restoration in Canada's Protected Natural Areas is available for download from the OWL website. This is a useful resource for your final project, and some readings may be assigned from this 'text' throughout the term.

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>. I recommend referring to the Learning Objectives associated with each lecture while you study: only material that is related to the learning objectives will be tested.

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.

5. Methods of Evaluation

Most assignments are due at the beginning of class on Thursday. The exception is the final report, which is due at 5pm the day after class (due on December 2).

Reflection #1	September 29	5%
Restoration project proposal	October 13	10%
Presentation	October 27	10%
Midterm	November 10	20%
Native plant collection	November 17	15%
Reflection #2	November 24	5%
Final report	December 2	30%
Participation and attendance	Throughout the term	5%

Written assignments

For all written work, I encourage you to discuss your ideas with either with me or Andrew (TA). Talking about your ideas often helps with identifying the strengths and weaknesses. I have provided examples of a restoration plans that you can use as models. You do not need to write in as much detail as the examples provided.

Reflections

Reflections are 2-3 pages long (double-spaced), and should have the feel of a blog post. You should take something that you saw outside of the classroom and relate it to something that was discussed in lecture. For example, think about sites in your community that have been abandoned and are in need of restoration. Or think about how easy or difficult it was to collect samples for your native plant collection. I would like you to feel unconstrained by my ideas for these posts, but I recommend writing Reflection #1 either about 1) observations you made at the field trip site on September 24; or 2) things you encountered during your native plant collection. A good topic for Reflection #2 is how your perspective on the restoration site has changed since you first encountered it, and how you hope that space will be used in the future. You will be graded on your writing quality and clarity (there are marks for proper sentence structure, spelling, grammar, flow, and other elements of style), the novelty of your ideas, your ability to offer a personal perspective, and how you relate your real-world observations to what was discussed in class. No additional research or references are required.

Restoration project proposal

The restoration project proposal is meant to get you on the right start for your final report. Please write 3-4 pages about the site. Identify its location (with a map), what disturbances impacted the site historically, and with the use of a nearby reference site, describe what a successful restoration would look like. Please include at least 2 references from peer-reviewed journals that discuss the impact of this disturbance or a previously-used approach for restoring a similar site.