
NRSM 265: Elements of Ecological Restoration

W.A. Franke College of Forestry and Conservation
University of Montana

LOGISTICS

Time: Tuesday, Thursday, 12:30 – 1:50 pm

Physical Meeting Location: University Center, Theater

Virtual Meeting Location: Zoom <https://umontana.zoom.us/j/98491410748>

Web Site: <https://moodle.umt.edu/course/view.php?id=32406>

INSTRUCTORS*

Philip Higuera (he/him/his), Associate Professor

Virtual Office: umontana.zoom.us/my/philip.higuera

Office Hours: Tue. and Wed., 2:00-3:30; book at <https://phiguera.youcanbook.me/> if possible

E-mail: philip.higuera@umontana.edu

(Include "NRSM 265" in subject)

Lisa Eby (she/her/hers), Professor

Virtual Office: umontana.zoom.us/j/lisa.eby

Office Hours: Mon. 11:30-12:30, Wed. 1:00-2:00, or by appointment.

E-mail: lisa.eby@umontana.edu

(Include "NRSM 265" in subject)

TEACHING ASSISTANT

Jesse Smyth (she/her/hers), MS Student

Virtual Office: umontana.zoom.us/my/jesse.smyth

Office Hours: Mon., Wed., 11:00-12:30

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(Include "NRSM 265" in subject)

*This course is team-taught by Higuera and Eby. Higuera is the overall lead this year and leading Sections 1, 2, and 4; Eby is leading Section 3.

HYBRID-FLEXIBLE COURSE FORMAT FOR FALL 2020

Hybrid: This course is using the “hybrid” format: it includes both face-to-face and online instruction, with a substantial amount of on-line activities. The classroom is a large ballroom in the University Center, set up with tables that keep students 6’+ apart (1 student/table), and masks are required by all students. Nonetheless, in-person meetings are not necessary to be successful in the class. Any group field trips will be optional and could be replaced with “self-guided” field activities that can be done individually, close to campus. We chose this format to increase the resilience of the course (students, and instructors) to the presence and spread of COVID-19 on campus and in our communities.

Flexibility: Students may choose whether or not to attend face-to-face class sessions, with no questions asked. The class, including teaching materials, assignments, and assessments, is designed to be accessible remotely, through the Moodle shell and Zoom, with no penalty in learning (e.g., grading or content delivery). We plan that students participating remotely may do so possibly synchronously (e.g., by joining live via Zoom, if it works well), or asynchronously (e.g., watching taped lectures afterwards and participating in on-line forums in place of in-person discussions). Finally, due dates for assignments will have greater flexibility than in non-pandemic times.

Safety: All students are expected to follow UM safety protocols, including using masks properly for all class activities, disinfecting your desk and equipment, and using hand sanitizer. Any students not able to follow all safety protocols will need to participate in the class remotely.

COVID-19-SPECIFIC DETAILS

- ***Stay home and contact the Curry Health Center at (406) 243-4330 if you feel the least bit sick and/or are exhibiting any COVID-19 symptoms.***
- **Mask use is required within the classroom. [View UM's face covering policy.](#)** Drinking liquids and eating food (which requires mask removal) is strongly discouraged within the classroom.
- Each student is provided with a Healthy Griz kit. We expect students to clean their personal work space when they arrive for class, and before they leave the classroom. Refill stations for cleaning supplies/hand sanitizer will be set up around campus - please learn where they are and use them.
- Please do not congregating outside the classroom before or after class.
- For in-person attendance, we will use an on-line software to ask questions, and record your seating location, to support contact tracing efforts.
- No additional seating can be added to the classroom.
- There is high demand for spaces on campus to accommodate students with inadequate WiFi in their homes or quick turnarounds between face-to-face and remote classes. A list of remote learning spaces with the days and times available for student use is posted on [the Keep on Learning website](#). There will be signs posted outside of these buildings and rooms to indicate their availability.
- If you are diagnosed with COVID-19, follow instructions for quarantine and contact your advisor so they can help you stay on track academically.
- Please remain vigilant outside the classroom and help mitigate the spread of COVID-19.
- If you want to keep up-to-date on how Missoula and Missoula County are responding to the pandemic, [Cindy Farr, the Incident Commander for Missoula City County Health Department, has a YouTube channel](#), where she posts nearly daily briefings and other relevant updates.

COURSE OVERVIEW

The complex challenges involved with restoring degraded ecosystems requires an understanding not only of the science of restoration ecology, but also the management practices and social factors that lead to successful project implementation. This interdisciplinary course is designed to give students an overview of the natural and social elements of ecological restoration. Topics covered include the ecological foundations of restoration, restoration goals and practices in terrestrial and aquatic habitats, social perspectives on restoration, restoration policies and planning, and restoration initiatives in Montana and the United States.

Learning Objectives

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

1. Communicate the definition of ecological restoration and its relationship with other disciplines.
2. Describe the scientific principles and management practices used to assist in the repair of forest, grassland, and aquatic systems.
3. Describe some of the human dimensions of restoration.
4. Express ideas in verbal and written formats and follow directions associated with assignments.

Course Organization

The course is taught in discreet sections, each with a different set of instructors. A variety of teaching approaches are used, including lectures, group activities, and fieldtrips. For fall 2020, the way the hybrid-flexible course format is implemented may vary through the semester, due to the current COVID-19 situation on campus and in Missoula, and among instructors.

| Section | Weeks of the Sem. | Dates |
|--|-------------------|--------------|
| Restoration Theory | Weeks 1-3 | 8/25 - 9/3 |
| Forest Ecosystem Restoration | Weeks 4-6 | 9/8 - 9/24 |
| River Restoration and Human Dimensions | Weeks 7-11 | 9/29 - 10/29 |
| Grassland Restoration, course wrap up | Weeks 12-14 | 11/3 - 12/19 |

Course Materials

This course uses readings from the scientific literature, chapters from books, and popular sources, in addition to other audio (e.g. podcasts) and video materials. All of the course materials will be available on-line through Moodle.

Optional: *Nature's Restoration* by Peter Friederici (Island Press, 2006); this book is available via on-line booksellers, including an electronic version. Students interested in delving more deeply into aspects of restoration can find reference information within [The Science and Practice of Ecological Restoration book series](#), published by Island Press.

Computer Access for Moodle and Synchronous Class Activities

For 2020, you absolutely need reliable internet access to keep up to date with course materials, successfully access and hand in assignments, and receive important update and/or participate in discussions via Moodle. For in-person meetings, we will also use laptop computers, tablets, or cell phones (any way to access the internet), as available, for in-class activities. If you do not have access to any of these devices, please contact your instructor asap.

Assignments and Assessments

Reading assignments

Each section and class period has associated reading material that should be read *before* class. You may want to download all reading materials at the beginning of each course section to ensure that you have access to the documents when you need them.

Pop quizzes and during-class questions

To assist students with staying current with reading materials, there may be pop quizzes on the reading assignments during class, and/or assignments due before class related to the day or weeks' reading. We will waive one of these scores for each student over the course of the semester.

Exams

Each section will conclude with an exam, which will be distributed on Moodle and done individually. The exams will consist of: definitions and fill-in-the-blank-style questions (approximately 20-25% of points); short answer questions (approximately 40-45% of points); and a question that requires critical thinking and/or application (approximately 35% of points). Students should review all of the lectures and readings for each section. In addition, a study guide reflecting potential questions will be provided to help students focus their studying.

Fieldtrips

The course includes at least two field trips, one associated with forest restoration (organized by Dr. Higuera) and one associated with river restoration (organized by Dr. Eby). You are required to participate in *at least* one of these trips and to submit a field trip report. For fall 2020 and the pandemic, we will likely be adding self-guided field trips and/or other field activities that do not require group gatherings. Field trip details and dates will be provided as soon possible in the semester.

Writing assignments

There are two writing assignments for this course (not including quizzes and exams). Detailed information on each assignment will be posted on Moodle, where they are to be submitted.

1. **Fieldtrip Report:** Each student is required to submit a report from one of the field trips. Please read through the assignment BEFORE the field trip, so that you maximize learning while on the trip and are fully prepared for to write the fieldtrip report.
2. **Seminar Report:** At the end of the semester, students will participate in an in-class discussion of *Nature's Restoration*. Each student is required to write a 4-6 page seminar paper, which is due on the class period of the seminar. Instructions on how to write a

seminar paper and participate effectively in a seminar is posted on Moodle. An example seminar paper is also posted on Moodle. This report is the final assessment for the course.

Format and grading for writing assignments:

- All assignments must be typed (except for in-class work) and handed in via Moodle.
- Assignments will be graded for both substance and writing; approximately 20% of the grade for each writing assignment will be based on grammar and clarity of writing.
- For assignments submitted via Moodle, save your document with the following file naming format: “NRSM265_AssignmentName_StudentID#”. For example, the seminar paper should be saved as, “NRSM265_SeminarPaper_790123456” (make sure the proper file extension is included too, if relevant).
- In your text, include an appropriately formatted header with the title of your paper, the course number, and your student ID number [790*], and the date on the first page.
- Please do NOT write your name on assignments, but be certain your correct student identification number is on it.
- Students who do not meet the file-naming and header requirements will be docked one grammar grade (e.g., 3% of total grammar points).
- Any in-text citations and bibliographies must follow the “Author-Date” format. For example, the in-text reference would be: (Jones 2016) if it is a single author, (Jones and Brown 2016) if there are two authors, or (Jones et al. 2016) if there are three or more authors. When in doubt, follow the format from a paper in the journal *Ecological Applications* (which you are assigned early on in the semester: Swetnam et al. 1999) and be consistent.

Course Grade

Student grades will be determined based on the exam for each section, weekly during-class assessments and participation in activities, and the field trip report(s). The course is scored on a total of 650 points.

| Section | Assignment | Points |
|---|------------------------------------|------------|
| Section 1: Restoration Theory | Exam | 100 (≈15%) |
| Section 2: Forest Restoration | Exam | 100 |
| Section 3: River Restoration and Human Dimensions | Exam | 100 |
| Section 4: Grassland Restoration | Final Exam | 100 |
| Throughout the course | Weekly assessments & participation | 100 |
| Throughout the course | Seminar Report | 100 |
| Throughout the course | Field Trip Report | 50 (≈8%) |
| TOTAL: | | 650 |

**NOTE: The last exam is during the finals period, but it is not cumulative and thus not a true “final exam”. It will be of similar length as the first three exams.*

Letter grades will be assigned based on students' numeric scores as follows:

| | | |
|-----------------|-------------|-------------|
| A = $\geq 94\%$ | A- = 90-93% | |
| B+ = 87-89% | B = 84-86% | B- = 80-83% |
| C+ = 77-79% | C = 74-76% | C- = 70-73% |
| D+ = 67-69% | D = 64-66% | D- = 60-63% |
| F = $<60\%$ | | |

COURSE POLICIES

Class expectations

Cell phones and mini-computers

Please turn off electronic devices during class, unless they are being used for an in-class exercise. We expect you NOT to be texting, browsing, or checking e-mail during class. If you feel you need to engage with your electronic device, please leave the classroom.

Class participation*

The "participation" portion of your course grade is usually based in part on class attendance; with the hybrid-flexible course model for fall 2020, evaluating participation will look different and may change over the semester. For students participating synchronously (whether in-person or remote), during-class exercises and attendance will contribute to participation; for students participating asynchronously, participation will be based on completing small assignments on Moodle, comparable to the during-class activities.

Assignment due dates*

Due dates are firm. Late assignments will not be accepted unless you have unusually extenuating circumstances *and* have made arrangements with your instructor at least 48 hours prior to the due date. This includes missing an exam: *there are no make-up exams* without prior arrangement.

*This semester is unlike other: if you are unable to keep up with class assignments or course materials, please contact your instructor and/or advisor: we are here to help you succeed. You are encouraged to do this sooner than you think necessary, as it provides more options. If you have extenuating circumstances (e.g., health, educational conflicts, family, etc.) and contact your instructor at least 48 hours in advance of a due date, we are generally happy to grant extensions.

Communication

We encourage you to communicate with the instructor and/or the TA if you have questions about course material or assignments. If you have questions about your grade or your standing in the course, please meet with an instructor during office hours. We are happy to help outside of class, particularly when students demonstrate an interest in learning, but to do so, we ask that you follow these guidelines:

Coming to office hours is the best way to get questions answered. E-mail can be a less effective way to communicate, unless requested to do so. If you e-mail an instructor or TA, please do the following so that the e-mail is read and understood: (a) include "NRSM 265" in the subject line, (b) write in complete sentences, with proper grammar, and (c) sign the e-mail with your full name. Reply times will vary and may be up to 60 hours.

Classroom environment (physical and remote)

Students at University of Montana are diverse in many ways, including race, gender, age, religion, preparedness, and mobility. Please help create a respectful learning environment by honoring all student contributions and expressing your views in ways that do not diminish other students' perspectives.

Academic Honesty, Plagiarism, and Student Conduct

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with and adhere to the [Student Conduct Code](#).

Academic dishonesty of any form is unacceptable and will be taken seriously by the instructor, the College, and the University of Montana. This includes plagiarism, when you copy materials from other sources without citing the source or copy someone's work, and cheating, copying material from other students during tests or quizzes. In both cases, you will fail the assignment/exam and the information will be passed on to the Dean of Students Office. It is your responsibility to be familiar with, and adhere to, the [University's definition of plagiarism](#).

Disability Modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and [Disability Services for Students \(DSS\)](#). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommason 154 or 406.243.2243. I will work with you and DSS to provide an appropriate modification.

Course Withdrawal Deadlines

Important dates restricting opportunities to drop a course are listed on the [Fall 2020 Official Dates and Deadlines calendar](#) and summarized below:

September 9 (5 pm): Last day to drop classes on Cyberbear with refund.

September 10 – October 21 (5 pm): Drop requires instructor and advisor approval, in CyberBear, \$10 fee from registrar's office, and student will receive a "W" on transcript.

October 22 - December 6: Students are only allowed to drop a class under very limited and unusual circumstances, requiring instructor, advisor, and Dean's approval; \$10 fee applies. A "WP" or "WF" will appear on the transcript for dropped classes. No refunds.