

Syllabus
BIOE 447: Ecosystem Ecology
Spring 2023: MWF 1:00 to 1:50 PM
Education Building, Room 123
Remote: [Zoom](#)

Instructor information:

- Name: Ben Colman
- Email: ben.colman@umontana.edu
- Phone: (406) 243-6315
- Office Hours: Choose a time that works for you here: <https://ben-colman.youcanbook.me>

Teaching assistant information:

- Name: Michelle Fillion
- Email: michelle.fillion@umontana.edu
- Office Hours: By appointment

Overview:

In this course on ecosystem ecology, we will explore:

- An introduction to systems thinking and the “ecosystem” concept
- Water, energy, carbon, and nutrient cycling
- The role of disturbance in ecosystems
- Trophic dynamics
- Species effects on ecosystem function

All concepts will be explored across both terrestrial and aquatic ecosystems by using a blend of readings, lectures, discussions, problem-solving, and field trips. Students will demonstrate mastery of course content through short quizzes and formal and informal writing exercises.

Learning Outcomes:

After completing this class, students will be able to:

- Identify an ecosystem’s structure, function, dynamics, and controls
- Compare top-down and bottom-up controls on ecosystem structure and function
- Construct mass balances for components of an ecosystem given basic information on ecosystem pools and processes
- Compare and contrast energy and nutrient cycling in a variety of ecosystems

Writing specific objectives:

- Identify and pursue more sophisticated questions for academic inquiry
- Find, evaluate, analyze, and synthesize information effectively from diverse sources
- Manage multiple perspectives as appropriate

- Recognize the purposes and needs of discipline-specific audiences and adopt the academic voice necessary for the chosen discipline
- Use multiple drafts, revision, and editing in conducting inquiry and preparing written work
- Follow the conventions of citation, documentation, and formal presentation appropriate to that discipline
- Develop competence in information technology and digital literacy

Class format:

The class will be conducted through regularly scheduled synchronous in-person class periods (EDU 123) and supplemented with field trips (video and in person). Cognizant of the fact that students may either need to quarantine or isolate due to the ongoing COVID-19 pandemic and other illnesses, we will also stream the class using zoom. I will also record lectures for folks who want to review materials or who have to miss classes due to illness or other excused absences. The class recordings will be posted in the "Lectures" portion of each week's moodle page within ~24 hours, as will the pdfs of the lecture notes. We will also be doing "activities" in this class (e.g., small group discussions, in-class problem sets, informal writing). Students missing those classes will be expected to complete alternative activities.

Assignments must be submitted through the Moodle learning management software interface. Moodle will also be used for distribution of feedback on assignments, distribution of supplemental reading assignments, videos, podcasts, and documenting modifications to the course, if any are required. If you have any questions about how to use Moodle, it is your responsibility to ask me, your colleagues, or call/email the [UM Online help staff](#).

We will be using Acadly, a platform that complements Moodle by allowing us to engage with all of you more frequently during class over the course of the semester. I will be putting the details on accessing the course on Acadly here and will include an email, so stay tuned. I decided to make the change to save you all the cost of using TopHat, the platform we used last year. You will need a device in class to access Acadly, but that device can be a laptop, tablet, or smartphone. If you currently don't have a suitable device, please let me know ASAP (I don't need details), and I will work with you to access the appropriate technology.

There will be fieldtrips during the semester focusing on factors driving the structure and function of aquatic and terrestrial ecosystems. The number and nature of these field trips will depend largely on the vagaries of springtime in Montana. We will also use some "video field trips" in order to get you into harder to access ecosystems (e.g., hydrothermal vents, tropical rainforests, desert)

Assessments:

There are several types of assessments and assignments in this class, including quizzes on assigned readings and lectures, field journals, and a review paper. Detailed descriptions of expectations and rubrics for grading these assignments will be posted on the Moodle site for this course. Assignments must be turned in by 11:59 pm on the day that they are due by using Moodle. Given the uncertainty associated with living in a pandemic, we can work with you if you miss a deadline, but it is your responsibility to communicate with us about that.

Course guidelines and policies:

Grading:

Rubrics for each assignment will be discussed in class and posted on Moodle along with the descriptions of those assignments. Please, follow the rubric. The overall distribution of points is summarized in the table below. Our goal will be to return all assignments and quizzes no later than a week after receiving them from you.

Assignment	Percent	Description
Field journals	30	6 points for each of 5 field journals
Quizzes	30	5 points for each of 6 quizzes
Synthesis project	30	Proposal & Outline (3 ea.); Rough draft & Final draft (9 ea.); Peer review (6)
Attendance & participation	10	Be present and you will participate (Acadly)

Academic Honesty:

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. I can honestly say that if you email me and tell me of a time that you were honest, and put “honest” as the subject, I will honestly give you a point of extra credit as a reward. All students should read and be familiar with the policies contained in the [Student Conduct Code](#).

Adjustments for Students with Disabilities:

Students with disabilities may request reasonable modifications by contacting me; know that I required modifications when I was in college, and I will be understanding and work with you. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you think you may have a disability adversely affecting your academic performance and you have not already registered with ODE, please contact them by:

Option 1: Submit [the inquiry form](#)

Option 2: Email them at ode@umontana.edu

Option 3: Call them at (406) 243-2243

Communication:

All course communications outside of class will be sent to students' University of Montana email accounts. It is your responsibility to regularly check your University account. In an average semester, I get around 100 emails a day with over half requiring replies; as such, if you do not hear from me within 24 hours (except on the weekend) feel free to email again or call me at my office number.

Illness policy:

Let's hope we all stay healthy and well this semester despite the ongoing COVID-19 pandemic and the reemergence of cold, flu, strep, RSV, and other illnesses. If you do encounter health issues this semester and are not sure what it is, please play it safe and join us remotely using the zoom link above until your symptoms abate and it is safe for you to rejoin us.

For class, do not attend if you have had a close contact with anyone with COVID-19, or if you come down with symptoms which may include but are not limited to:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

Please contact the Office for Disability Equity for an accommodation for any safety protocol modification you may need. If students decide not to follow all safety protocols consistently, they will be asked to leave the classroom or field trip and will be referred to the Dean's office for further review and action.

These precautions are for your safety, our safety, and the safety of the community and will help to minimize any risk of transmission. Secondary contacts of asymptomatic people will likely occur for all of us whether through family, work, socializing, or school. Working to reduce transmission increases the probability that we all stay healthy, that we'll be able to maintain all planned face-to-face activities, and the better the class will be for all. That said, we will be prepared to have the activities completed remotely if needed, so if you are feeling sick or have been exposed, please follow UM Policy.

If you feel uncomfortable with attending class in person for any reason or have had a close contact, need to quarantine, or need to isolate, please reach out and let us know, and join us through zoom at the link above and in the Moodle. Again, this is an ongoing but novel and ever-changing landscape so mutual respect, honest and early communication, and flexibility is needed for us to have a successful semester.

Schedule and attendance policy:

We will meet every MWF from 1:00 – 1:50 PM in person. Because of the nature of this class, attendance is important, and points will be deducted for absences. That being said, class will also be recorded and you will be expected to view the class asynchronously if you cannot make class synchronously due to reasons of illness, injury, family matters, religious observance, participation in a University or community sponsored activity, military service, mandatory public service, or if squirrel ate through your internet cable.