



FORS 330 | Forest Ecology | Course Syllabus

3 credits. Tuesdays & Thursdays; 11 AM-12:20 PM
[North Underground Lecture Hall](#)

Instructor Team

Instructor: Mark Kreider (he/him)

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Office hours: Tuesday & Thursday 1-2 pm in Clapp 405A; or by appointment (email me)

Teaching Assistant: Michelle Fillion (she/her)

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Office hours: Tuesday 9-11 am in Stone 109; or by appointment

Land Acknowledgement

"The University of Montana acknowledges that we are in the aboriginal territories of the Salish and Kalispell people. We honor the path they have always shown us in caring for this place for generations to come."

—Séliš-Qlispé Culture Committee

Course Description

Ecology is the scientific study of relationships between organisms and their environment, interactions among organisms, and the cycling of material and energy through ecosystems. Forest ecology focuses on the structure, composition, function, and dynamics of forests as complex adaptive ecosystems. It forms the primary scientific basis of forest management. This course introduces foundational ecological concepts and considers their application in understanding and managing local, regional, and global forest ecosystems. Additionally, this is a writing-intensive course that emphasizes the development of scientific literacy and the skills needed to critically synthesize information.

Learning Goals

Students who complete this course will be able to:

- Understand & appreciate:
 - How a tree "works" (how trees establish, grow, and die)
 - How organisms interact within forests (competition, mutualism, parasitism)
 - How resources cycle through forests
 - How forests change across space (aspect, climate) and time (disturbance, succession, climate change)
 - The many ways people interact with and manage forests

- Critically evaluate & integrate multiple knowledge sources about forest ecosystems, including peer-reviewed literature, natural history, and Indigenous Ecological Knowledge
- Synthesize and communicate information on complex topics within forest ecology, including relevant ecological theory and implications for forest management

Required materials

There is no required textbook for this course; PDFs of readings will be posted on Moodle. You do need to bring writing materials (e.g., a notebook) and something to write with (pen or pencil); we will do in-class activities using these. We will use Moodle as our course homepage, this is where you can find overviews of each period's topic, readings, and assignments.

Assignments

Category	Assignment	Due Date*	Points	% of grade
Participation	Class attendance & participation	In class	100	10%
Writing	Introduction email	August 31	20	2%
	Personal forest response	September 5	60	6%
	Editing AI essay	September 14	60	6%
	Opinion piece			[33% total]
	• Topic	September 28	30	3%
	• Proposal	October 12	60	6%
	• First draft	October 26	60	6%
	• Revisions on first draft	November 9	60	6%
	• Peer revision	November 21	60	6%
	• Final draft	December 7	60	6%
Quizzes	Weekly quizzes (15 pts x 14 weeks); lowest two scores dropped	In class	180	18%
Exams	Midterm exam	In class	100	10%
	Final exam (cumulative)	In class	150	15%
			1000	100%

*assignments are due before the start of class (11:00 AM) on the date listed

Grading Scale

A+	97-100%	C+	77-79%
A	93-96%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D	60-69%
B	83-86%	F	<60%
B-	80-82%		

Extra credit

A great way to learn about forest ecology is to engage with scientists, naturalists, and other individuals knowledgeable about forests. You can earn 10 extra credit points for each science speaker event you attend, up to a maximum of 5 events; a [list of acceptable events can be found here](#). After attending an event, [fill out this Google form](#) to receive credit. You can earn an additional 5 extra credit points if you ask a question to the presenter. Be respectful while attending by not arriving late, giving your full attention to the speaker, and not using phones during the presentation.

Attendance & Participation

Class attendance and participation is required. I will work to make each class period as engaging as possible; it is your responsibility to bring as much of yourself as possible. Being absent from class, either physically or mentally, prevents you from doing this. Excused absences must be arranged before class; send me an [email](#) (e.g., if you are sick, on a field trip, etc.). If you are absent for an unexcused reason, you cannot make up in-class quizzes.

Note-taking

I highly recommend that you take notes by hand in class and while reading (instead of typing on a computer). This allows more flexibility and encourages understanding instead of verbatim transcription. Only hand-written notes will be allowed on open-book quizzes. If you feel that the use of a computer is required for your note-taking, please discuss it with me.

Late Assignment Policy

Requests for extensions on assignment deadlines are more likely to be granted when they are made well in advance of the assignment deadline. If you are struggling to complete an assignment, please ask for help before the deadline. If no arrangements are made in advance, the overall grade of the assignment will be diminished by 10% for each day late.

Readings

Reading is essential for learning and applying ecology, thus, reading assignments are an important component of this class. Readings are drawn from recent and foundational papers and textbooks. Assigned textbook chapters will be scanned and available on Moodle, no textbook purchase is required. Assigned readings are subject to adjustment; please check Moodle regularly for changes.

Self-Reflection and Instructor Evaluation

An important goal of undergraduate education is to learn not only discipline-specific content, but how to educate yourself and engage with information to build knowledge. The process of 'meta-cognition', or reflecting on your own thinking, is an effective way to build this skill. You will have two graded opportunities (during weekly in-class quizzes) to look back at your previous work and honestly assess ways that you were successful or could improve. I will also invite you to provide feedback on my performance as an instructor at two points in the semester, in addition to the required evaluations at the end of the semester. Both will be anonymous. I appreciate your constructive feedback. Feedback that is honest, specific, respectful, and mindful of your own effort in the course is the most useful.

Course schedule

[See an updated course schedule on Google Sheets](#)

Date	Topic	Guest Speaker
8/29	Course introduction, syllabus	
8/31	Overview of forest ecology; ecosystem concept	
9/5	Regeneration Ecology	
9/7	Tree structure & Growth	
9/12	Ecophysiology I: Photosynthesis, water	
9/14	Ecophysiology II: Light, shade tolerance, temperature	
9/19	Ecophysiology III: Soil	Robbie Heumann, PhD student
9/21	Climatic controls on forests	
9/26	Climate, topography, physiography, orography	
9/28	Long-term ecosystem & vegetation change	Phil Higuera, Professor of Fire Ecology
10/3	Disturbance	
10/5	Fire ecology	
10/10	Succession	
10/12	Structural development	Andrew Larson, Professor of Forest Ecology
10/17	Midterm exam	
10/19	Carbon balance	
10/24	Nutrient cycling	Emma Hauser, Postdoctoral researcher
10/26	Forest Communities & interactions	
10/31	Animals in forest ecosystems; Mycorrhizal networks	
11/2	Forest terrestrial-aquatic interactions	Michelle Fillion, MS student
11/7	Election Day—no class	
11/9	Biodiversity & conservation	
11/14	Climate change impacts on forests	Kimberley Davis, Research Ecologist, U.S. Forest Service
11/16	Invasive species	
11/21	Forest landscape ecology	
11/23	Thanksgiving—no class	
11/28	Forests & recreation; ecosystem services	Will Rice, Assistant Professor of Outdoor Recreation & Wildland Management
11/30	Indigenous ecological knowledge	TBD
12/5	Ecological forest management	
12/7	Study session	
Finals	Final exam: 10:10 AM to 12:10 PM	

Course culture and resources

Diversity, Equity, and Inclusion

The highest priority of this course is to create a learning environment where all students feel safe, heard, respected, and empowered by the opportunity to succeed. Behavior (including [microaggression](#)) that supports hate, discrimination or marginalization based on any aspect of identity will not be tolerated. Everyone is responsible for the effects of their behavior and language on others, even when harm was not intended. Please report any incidents to me and/or the [UM Title IX office](#). Know that as an instructor, [I am a Mandatory Reporter](#).

All students are expected to be familiar with and follow the [Student Code of Conduct](#) and the UM policy on [discrimination, harassment, sexual misconduct, stalking, and retaliation](#).

Disability Accommodations

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 anticipate or experience barriers based on disability, please contact the ODE at: (406) 243-2243, ode@umontana.edu, or visit www.umt.edu/disability for more information. Retroactive accommodation requests will not be honored, so please, do not delay. As your instructor, I will work with you and the ODE to implement an effective accommodation, and you are welcome to contact me privately if you wish.

Academic Integrity

Plagiarism, cheating, and other misconduct not only cheat yourself out of a rewarding learning experience, but they are also serious violations of your contract as a student. 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.

Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement (definition from: <https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism>). Please review the information at this link; you are ultimately responsible for understanding what constitutes plagiarism—however, please know that I am here to help; you can always email or talk to me if you have any questions about what constitutes plagiarism. Material that you generate with Artificial Intelligence (AI) such as ChatGPT needs to be acknowledged. We will discuss appropriate AI usage in class. Not all examples of plagiarism are the same and will therefore be dealt with on a case-by-case basis. Because this is a writing-intensive course, plagiarism *will* be taken seriously and could involve partial or total loss of credit for an assignment, additional work, or formal disciplinary action.

Other resources

At the University of Montana, we are committed to a holistic approach to education that includes physical and emotional wellbeing. Below are a variety of additional resources.

- **Writing Center**

The UM [Writing and Public Speaking Center](#) provides one-on-one tutoring to students at all levels and at any time in the writing process. This is an excellent resource, and it is highly recommended that you seek out their help, even if you just have a few questions. Visit the [online scheduler](#) to schedule an appointment.

- **Student Affairs**

Visit the [Student Affairs Student Support Resources](#) website for a list of resources and contacts, including: counseling and advocacy support services; academic support, career and financial support; and specialized support.

- **Student Advocacy Resource Center**

The [Student Advocacy Resource Center](#) (SARC) provides free and confidential support and brief counseling services for students who have experienced gender-based discrimination. SARC can be reached at 243-4429. Students are also welcome to call their 24-hour support line (406) 243-6559. Speaking with a confidential resource does not disqualify students from making a formal report to the Title IX Coordinator if and when they are ready. In the confidential setting, students will be made aware of available resources and reporting options. An advocate is available for all students upon request through SARC.

- **Food and Housing Security**

Any student needing access to food or housing, which may have an impact on their academic performance is encouraged to contact the [University of Montana Food Pantry](#) or Associated Students of the University of Montana [Bear Necessities](#). Bear Necessities provides support for students living through or on the edge of basic needs insecurity. Through connecting students with badly needed resources, helping determine priorities and next steps, and providing emotional support, Bear Necessities staff can wade through difficult situations with students, so they do not need to go it alone.

- **Office of Equal Opportunity and Title IX**

The [Office of Equal Opportunity and Title IX](#) supports UM's commitment to diverse and inclusive working and learning environments free from all forms of discrimination, harassment and sexual misconduct. We work to eliminate barriers inhibiting individuals from achieving their full potential in education, employment, and other programs at the University.

- **Office for Student Success**

The [Office for Student Success](#) supports students by collaborating with and supporting academic departments and university offices to provide programs and services that support students' academic growth and personal development.