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ENSC 360.01: Applied Ecology

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ENSC 360/594 – Applied Ecology

Tue./Thurs. 3:30-4:50 p.m.

Jeanette Rankin Hall 204

Course Syllabus

Instructor: Ethan Smith

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Office Hours: Tues 1:30-3:00 or by appt.

Office: Rankin Hall 204

Teaching Assistant: Allison Monroe

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Office Hours: Thursday 2:30-3:30 or by appt.

Office: Rankin Hall M2

Course Texts: The official text for the majority of this course will be *Elements of Ecology (8th or 9th edition is fine)* by Smith and Smith. The bookstore will carry the text this fall, and thus the following options are available:

- 1) Purchase (or rent) a hardcopy text via the UM Bookstore.
- 2) Purchase (or rent) a digital copy from the UM Bookstore.
- 3) Purchase a used textbook or .PDF copy from a reputable online source.
- 4) There is a copy of EOE available at the Course Reserve desk in the Main Library. It can be checked out for a 2-hour period.

There will be additional readings assigned at various times during the semester. Any supplemental readings in addition to the textbook shall be posted online prior to their assigned reading dates, will be handed out in class, or will be e-mailed to you.

Attendance and Participation

*Regular course attendance and participation is **mandatory**, and will account for approximately 10% of the total course grade.* The principles of Ecology are interconnected and build upon one another. Thus, students are expected to make up any missed readings and obtain notes from fellow classmates prior to the next scheduled class period.

The quality of our in-class discussions depends upon your ability to be prepared and engaged each day. While some teachers love nothing more than to lecture without ceasing for 90 minutes at a stretch, I prefer to let discussion and student input drive a portion of this class. Please complete any assigned readings **PRIOR** to the corresponding class period so that we can push our discussions as far as possible.

Assignments

- Assignments will be due at the **beginning** of class on the day that they are due. Late assignments will lose 20% for each day that they are late.
- All assignments not completed in class must be in typed, double-spaced, 12 pt. font format.

Course Evaluation/Assignment Value

- Class Participation	50 pts
- Quizzes/Take Home Assignments (3)	175 pts
- Personal “field trip” assignments	175 pts
- Final Exam	150 pts

Total 550 pts

Grade	Point Total
A	495-550
B	440-494
C	385-439
D	330-384
Fail	Below 330

Classroom Covid-19 policies: Due to the ongoing community health concerns connected to the Covid-19 pandemic, there are several important and MANDATORY guidelines that we must follow in this course.

The following guidelines have been MANDATED by University Administration, and apply specifically to INDOOR-CLASSROOM instructional periods:

- 1) Students and Faculty MUST wear facemasks that cover both the nose and the mouth while inside classrooms.
- 2) Students must occupy the same assigned seat each day in the classroom, and a hard-copy of seating charts must be maintained.
- 3) Eating and drinking are prohibited in classroom spaces.

Failure to follow any University rules concerning Covid-19 policies will be grounds for removal from classes and possibly expulsion from this course or the University as a whole.

Any portion of our class that is completed outdoors will NOT require a face-mask to be worn. We will do our best to get outdoors as much as we possibly can this fall, but outdoor instruction will obviously depend upon weather and the given subject matter of a day.

Graduate Student 594 Requirement: In order to satisfy the standards of graduate level coursework, any students enrolled in ENSC 594 will have an additional project/paper/presentation requirement. This assignment will be assigned later in the semester, and is nothing to be afraid of.

Disability Accommodation: Students with disabilities may request reasonable accommodations/modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office of Disability Equity (formerly Disability Services for Students). The term “reasonable” in this case means that the University permits no fundamental alterations of academic standards or retroactive modifications.

Academic Conduct: Though it should be understood without being stated, the submission of any work that is not originally your own shall constitute plagiarism and be treated as academic misconduct. This includes the copying of any homework, sharing answers during quizzes or exams, or submitting written work without the clear citation of your sources. Scientific and academic fraud not only diminishes the reputation of an individual, but can tarnish the work of other, honest scientists working within the field. It’s not worth it. For the sake of scientific truth, and the sake of your grade, don’t do it.

Students wishing to clarify rules regarding plagiarism and/or academic misconduct should consult section IV of the University of Montana Code of Conduct.

Cultural/Ceremonial Leave Policy: In accordance with updates to the UM Class Attendance/Absence Policy, “Cultural or ceremonial leave allows excused absences for cultural, religious, and ceremonial purposes to meet the student’s customs and traditions or to participate in related activities. To receive an authorized absence for a cultural, religious or ceremonial event the student or their advisor (proxy) must submit a formal written request to the instructor. This must include a brief description (with inclusive dates) of the cultural event or ceremony and the importance of the student’s attendance or participation. Authorization for the absence is subject to approval by the instructor. Appeals may be made to the Chair, Dean or Provost. The excused absence or leave may not exceed five academic calendar days (not including weekends or holidays). Students remain responsible for completion or make-up of assignments as defined in the syllabus, at the discretion of the instructor.”

Learning Outcomes: At a minimum, individuals successfully completing this course should expect the following:

1. Students will understand how ecological field studies are designed including considerations of sampling, hypothesis testing, and methodology.
2. Students will understand major ecosystem principles including ecosystem organization, the influence of abiotic factors on ecosystems, and energy flow.
3. Students will understand how ecological communities are formed; change over time; and the interactions, both biotic and abiotic, shaping those communities.
4. Students will understand the basic principles of population dynamics including genetic diversity, population growth, population viability and conservation approaches.
5. Students will understand how ecological principles can be applied to real world questions of human impact on natural systems through study design, interpretation and management action.
6. Students will experience how ecological principles are being applied in Montana to solve environmental problems.
7. Students will gain experience and skills to present scientific information to an eco-literate audience.

Tentative Course Schedule*

*dates subject to change with reasonable notice

*EOE is Elements of Ecology, followed by the chapter assigned. All other readings will be provided to you.
Field Trip (FT) assignments will be assigned one week prior to their due date.

Day/Date	Class Topic	Reading	Due
Tue. Aug 31	Introductions, Syllabus, Course Goals, etc.		
Thurs. Sept 2	The Nature of Ecology	EOE 1	
Tue. Sept. 7	Climate	EOE 2	
Thurs. Sept. 9	The Aquatic Environment	EOE 3	FT #1
Tue. Sept. 14	The Terrestrial Environment	EOE 4	
Thurs. Sept. 16	Ecological Studies and Experimental Design	Cox 1-3	FT #2
Tue. Sept 21	TBD Project Day		
Thurs. Sept 23	Nutrient Cycling and Decomposition	EOE 21	FT #3
Tue. Sept 28	Nutrient Cycling and Decomposition Cont.		Experiment Des. Proj.
Thurs. Sept. 30	Environmental Toxins	AEEM 9	FT #4
Tue. Oct. 5	Adaption and Natural Selection	EOE 5	
Thurs. Oct. 7	Plant Adaptions to the Environment	EOE 6	FT #5
Tue. Oct. 12	Animal Adaptations to the Environment	EOE 7	
Thurs. Oct. 14	Populations	EOE 8	FT #6
Tue. Oct. 19	Population Growth	EOE 9	
Thurs. Oct. 21	TBD		FT #7
Tue. Oct. 26	Life History	EOE 10	
Thurs. Oct 28	Intraspecific Competition	EOE 11+12	FT #8
Tue. Nov. 2	Interspecific Competition	EOE 13	
Thurs. Nov. 4	Predation	EOE 14	FT #9
Tue. Nov. 9	Community Structure	EOE 16	
Thurs. Nov. 11	Factors Influencing Community Structure	EOE 17	
Tue. Nov. 16	Community Dynamics	EOE 18	
Thurs. Nov. 18	TBD		
Tue. Nov. 23	TBD		
Thurs. Nov. 25	***Thanksgiving – No Class***		
Tue. Nov. 30	TBD		
Thurs. Dec. 2	TBD		
Tue. Dec. 7	TBD		
Thurs. Dec 9	TBD		
Monday Dec. 13	*****Final Exam 3:20-5:20*****		