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BIOB 109N.00: Montana Ecosystems

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BIOB109N: *Montana Ecosystems* course syllabus

Spring 2022

Instructor Greg Peters
Contact greg.peters@mso.umt.edu; 207-6154
Office Hours M & W 9:30-11:30 in office 407 or by appointment

Class meetings

Montana Ecosystems meets twice weekly for lecture discussions and has one, two-hour lab meeting on Thursday each week. Check your class schedule for your specific class meetings. All students must be enrolled in the lecture course *and* in one lab section. Students may only attend the lab section for which they are registered.

Required Text

Laboratory activities and course readings are provided in the *Montana Ecosystems* coursepack available through the [UM bookstore](#). Readings are also available in color on Moodle, but you will need your own copy of the print book from the bookstore for labs.

Always bring your coursepack to lab for instructions and lab worksheets.

Course Description

Montana Ecosystems explores the living systems of Montana with a focus on dominant habitats. We will explore the geologic and climatological influences on Montana's remarkable diversity of ecosystems and species. We will examine the dominant vegetation patterns across Montana and how these patterns influence the distribution of common species of animals. We will connect these systems to discussions of energy dynamics in living systems. The course will conclude by examining the human influence on natural systems. Core learning objectives include:

- becoming familiar with Montana's dominant ecosystems
- identifying common plants and animals in each system, and their interactions
- recognizing human impacts on the landscapes and species of Montana
- developing skills in identification of unknown species

For general education science requirements: upon completion of this course, you will be able to:

- understand the general principles associated with the discipline(s) studied
- understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes
- detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments
- understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning
- understand the means by which analytic uncertainty is quantified and expressed in the natural sciences

Recommendations

Keep up with readings to get the most out of classroom meetings. You will submit assignments and take exams on [Moodle](#) (use your UM [netID](#) to log in). Visit the [UMOnline Moodle tutorial](#) if you are unfamiliar with Moodle. Contact the helpful staff at UMonline (umonline-help@umontana.edu or 406-243-4999) with technical questions.

Committing to **regular attendance and on-time completion of work** is essential for success in this class. It is equally important to avoid the classroom if you are ill, especially if you are experiencing any [symptoms of COVID](#). To balance these goals:

- Monday & Wednesday classes are supplemented on Moodle with lecture recordings from previous semesters and copies of slides used in class
- Missed labs may be completed for partial credit (or full credit for absence due to illness)
- Exams will be available on Moodle from Wednesday morning to Sunday night
- Your lowest exam score will be dropped for any reason

Assessment	<u>points</u>	<u>grade</u>
1) Exams (highest 4 of 5 @ 50 pts ea.)	200	90-100% = A- to A
2) Practice questions (15 @ 3 pts ea. + 5 participation)	50	80-90% = B- to B+
3) Lab activity worksheets (10 @ 20 pts ea.)	200	70-80 % = C- to C+
4) <u>Independent research project and report</u>	<u>50</u>	60-70% = D- to D+
TOTAL:	500	< 60% = F

Course Policies

Your lowest exam score will be dropped from your final grade; therefore, there will be **no late or make-up exams offered** unless accompanied by signed documentation of extreme circumstances. In other words, missed exam will count as your dropped exam. The final exam is cumulative. Students are expected to work alone and without outside resources.

Missed lab activities can only be made up for full credit with documentation of extreme circumstances or due to illness. **Make-up labs will be available through Moodle** to all students for partial credit for any other reason. A late research project will lose 10% per week, beginning immediately after the due date.

All features of the [UM student conduct code](#) will be followed in this course. Per university policy, please use only your university account for email communication.

Students with disabilities will receive appropriate **accommodations**. Please contact your professor and provide a letter from your [ODE](#) coordinator so that accommodations can be made.

After the 45th day of the semester, drops, adds, or changes of grade options are not automatically approved; they may be requested by petition, and the petition must be accompanied by documentation of extreme circumstances.

Missoula College **values diversity** of students, faculty, and staff as an essential strength that contributes to our shared educational mission. Students of all backgrounds and perspectives are recognized and respected in this class. Please notify your instructor if components of this course present barriers to your inclusion. Contact Dr. Salena Beaumont Hill in the [Office of Inclusive Excellence for Student Success](#) for support for BIPOC and LGBTQ+ students and groups. For counseling or advocacy related to discrimination and other concerns, please visit [SARC](#).

BIOB109N: Montana Ecosystems Class Schedule

Date	Chapter. Topic
Unit One: Montana's Landscape and Climate	
1/17	<i>No class: Martin Luther King Jr Day</i>
1/19	Course Introduction
1/20	<i>No lab</i>
1/24	1. Earth's ecosystems
1/26	2a. Montana physiography
1/27	Lab: Montana Birds
1/31	2b. Montana mountains & landscapes
2/2	2c. Montana climate
2/3	Lab: Montana Flowers
2/7	3. Montana ecosystems overview
2/9	EXAM 1
2/10	Lab: Montana Mammals
Unit Two: Montana's Mountain Ecosystems	
2/14	4. Classification of Life on Earth
2/16	5. Alpine habitats
2/17	Lab: Montana Ecosystems Maps
2/21	<i>No class: Presidents' Day</i>
2/23	6a. Montana forests: trees of Montana
2/24	Lab: Montana Landscapes
2/28	6b. Montana forests: forest types
3/2	6c. Montana forests: forest animals
3/3	Lab: Montana Amphibians & Reptiles
3/7	6d. Montana forests: forest dynamics
3/9	EXAM 2
3/10	Lab: Trivia, Field trip overview, Science & Research

BIOB109N: Montana Ecosystems Class Schedule

Date: **Chapter. Topic:**

Unit Three: Montana's Valley Ecosystems

3/14	7a. Grasslands
3/16	7b. Sagebrush steppe
3/17	<i>No lab</i>
3/21 - 3/25	<i>Spring Break</i>
3/28	8a. Wetlands
3/30	8b. Wetlands
3/31	Field Lab 1A: Floodplain Forests; meet in first floor lobby
4/4	9. Deserts
4/6	EXAM 3
4/7	Field Lab 1B: Floodplain Forests; meet in first floor lobby

Unit Four: Montana's Ecosystem Dynamics

4/11	10a. Biodiversity and ecosystem dynamics
4/13	10b. Biodiversity and species interactions
4/14	Field Lab 2A: Montane Forests; meet in first floor lobby
4/18	11a. Human impacts on ecosystems
4/20	11b. Human Habitats
4/21	Field Lab 2B: Montane Forests; meet in first floor lobby
4/25	12. Montana Wildlands
4/27	<i>Discuss research projects</i>
4/28	Field Lab 3A: Naturalist Skills; meet in first floor lobby
5/2	<i>Review for Exam 4 and final exam; course wrap-up</i>
5/4	EXAM 4
5/5	Field Lab 3B: Naturalist Skills; meet in first floor lobby
5/8	Independent Research Project due through Moodle, 11:55pm Sunday night
5/12	FINAL EXAM closes Thursday night at 11:55pm

Class Responsibilities

These instructions are also available in the “Assignment Instructions” topic on our Moodle page.

Weekly readings

Reading assignments revisit much of the content on unit exams, presented with color images and active links to optional, supplemental resources in the ebook on Moodle. The same content is printed in your black-and-white coursepack without the images and links.

Class meetings

We will explore Montana Ecosystems topics during Monday & Wednesday class meetings with instructor presentations and responses to questions. Copies of slides used will be available on Moodle for review. Recorded lectures from a remote section of this class will be on Moodle.

Practice Questions

You will be asked to share a response to at least one practice question per week on a Moodle discussion forum. These questions are similar to many used on exams; posting your responses will provide practice and a shared resource built by your classmates before each exam. Your instructor will check response regularly to ensure that they are reliable. Your weekly response is **due before 11:55pm each Sunday night**. Evaluation will be based on active participation, and a solid effort will help you and everyone in class. To participate, click on the week’s “Practice Questions” forum on Moodle. Review the questions, press “reply,” add your response to a question no one has answered yet, then press “submit.”

Laboratory

The lab portion of this class (your two-hour Thursday class) is required for completion of the course. Participation will be evaluated through in-class worksheets found in your coursepack, so bring your coursepack to all lab meetings. Lab meetings include:

- **In class lab activities:** Most lab classes will be in the classroom, with investigation of the dominant flora, fauna, and habitats of Montana.
- **Field labs:** Field trips are opportunities to explore ecosystems of Montana and practice scientific investigation. Labs meet first in the first-floor lobby on field trip days.

Independent Investigation and Report

Each student will complete an independent scientific investigation of Montana Ecosystems. Detailed instructions are available in your coursepack and will be discussed in lab.

To submit assignments

- 1) Save your work in .doc format.
 - 2) Open the appropriate assignment link on Moodle.
 - 3) Upload your assignment by clicking the "add submission" button, then select your file to upload or drag and drop it into the available box.
- Remember that a late assignment brings a late penalty.
 - Feel free to work with others on all assignments, but turn in work in your own words.

Exams:

Exams are offered through Moodle and close by 11:55pm on the Sunday night immediately following the listed date in the syllabus. You can take the exam at any time once it opens on a Wednesday, but it must be completed in a one-hour sitting; it cannot be "paused" and restarted. You must work alone but may use any other resource to assist you. With a time limit, it is essential to be prepared. You are strongly encouraged to start exams well before the end of the last day. Make sure to give yourself time for the unexpected.

When you are ready, open the exam on Moodle and follow the prompts. Make sure to press all the "submit" and "finish" buttons at the end. Please contact your instructor if you have concerns about taking a Moodle exam.

All exams except the final cover the content from the current unit only (lab content is not included on exams). Your lowest exam score will be dropped from your final grade for any reason, so there will be no makeup exams offered unless accompanied by documentation of extreme circumstances during the entire period the exam is open.

COVID precautions

Lab activities provide an opportunity for interactive, exploratory, and outdoor experiences. In a time of a global pandemic and diverse health concerns, all students are strongly encouraged to complete their full, free vaccination easily obtained by visiting the [Curry health Center](#). Please consider these [safe hiking guidelines](#) during the COVID-19 pandemic if you choose to travel anywhere to complete your independent project. Look over the [CDC guidelines](#) for appropriate precautions. Contact your instructor if any feature of a lab activity is inappropriate for your personal health. Maintaining your safety is always the most important lab objective.

