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SCN 105N.00: Montana Ecosystems

Gregory D. Peters

University of Montana, Missoula

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Peters, Gregory D., "SCN 105N.00: Montana Ecosystems" (2018). *University of Montana Course Syllabi*. 9072.

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SCN105N: *Montana Ecosystems* course syllabus

Fall 2018

Instructor: Greg Peters

Contact: greg.peters@mso.umt.edu; 207-6154

Office Hours: M & W 10:30-12:30 in office 412

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.

Required Text:

Laboratory activities and course reading are provided in the *Montana Ecosystems* coursepack, available only through the bookstore or Moodle.

Make sure your text is labeled for fall semester 2018

Course Description:

Montana Ecosystems explores the living systems of Montana with a focus on dominant habitat types. 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 objective include:

- observing and reflecting on natural systems
- becoming familiar with Montana's dominant ecosystems
- recognizing common plants and animals in each system, and their interactions
- understanding the nature of science as a process
- understanding principles of energy transformations in living systems
- recognizing human impacts on the landscapes of Montana

Recommendations:

The most important things you can commit to for a successful experience in this course are regular attendance and timely submission of quality work. Keep up with available readings in the coursepack to get the most out of classroom meetings. The Moodle supplement for this course includes portions of class presentations, records of your grades, and resources to submit written work online.

Assessment:

	points	grade
1) Exams (highest 4 of 5)	400	90-100% = A- to A
2) Mini-quizzes (highest 20 of 21 @ 3 pts. ea.)	60	80-90% = B- to B+
3) Choice Assignments (2 @ 20 pts ea.)	40	70-80 % = C- to C+
4) Lab activity worksheets (10 @ 20 pts ea.)	200	60-70% = D- to D+
5) <u>Independent lab investigation and report</u>	<u>50</u>	< 60% = F
TOTAL:	750	

Course Policies:

Your lowest exam score will be dropped from your final grade; therefore, there will be NO make-up exams offered unless accompanied by clear, signed, documentation of extreme circumstances. In other words, an absence from an exam will count as your dropped exam. The final exam is cumulative. Exams will ask you to reflect on your learning by responding to questions in a diversity of formats. Students will be expected to work alone and without outside resources.

Miniquizzes and lab activities can only be completed for full credit during class and lab time, as scheduled. Late assignments will lose 10% per class meeting. Missed lab activities can only be made up with documentation of extreme circumstances. Some lab activities will include images and activities made available on Moodle to help.

Students with disabilities will receive appropriate accommodations. Please contact me and provide a letter from your DSS 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, but the petition must be accompanied by documentation of extreme circumstances.

Choice Assignments:

You will be asked to turn in two assignments in addition to regular lab activities and your independent project. Due dates are listed in the class schedule. These assignments are meant to inspire explorations of Montana Ecosystems that you choose from a list of options, and to help our class build a body of knowledge that we can all use. Detailed instructions for each of the options is available at the end of your coursepack.

Laboratory:

Always bring your class coursepack to lab for instructions and lab worksheets.
Students may only attend the lab section for which they are registered.

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 activities documented with short worksheets found in your coursepack. Be sure to check the course schedule for the timing of lab activities. Lab meetings include:

- **In class lab activities:** Most lab classes will be in the classroom, with specific investigation of the dominant flora, fauna, and habitats of Montana.
- **Field labs:** Our field trips are opportunities to explore some dominant ecosystem types of Montana and practice the process of scientific investigation in the field. Labs meet first in the scheduled classroom, even 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.

SCN 105N: Montana Ecosystems Class Schedule

Date: _____ **Chapter. Topic:** _____ **Assignment due:** _____

Unit One: Montana's Landscape and Climate

8/27	Course Introduction
8/29	1. Earth's ecosystems
8/30	Lab: Field trip overview, science worksheet, outline project
9/3	<i>No Class: Labor Day Holiday</i>
9/5	2a. Montana physiography
9/6	Field Lab 1A: Floodplain Forests
9/10	2b. Montana mountains & landscapes
9/12	2c. Montana climate
9/13	Field Lab 1B: Floodplain Forests
9/17	3. Montana ecosystems overview
9/19	EXAM 1
9/20	Field Lab 2A: Hunting for Shrubs

Unit Two: Montana's Mountain Ecosystems

9/24	4. Classification of Life on Earth
9/26	5. Alpine habitats
9/27	Field Lab 2B: Hunting for Shrubs
10/1	6a. Montana forests: trees of Montana
10/3	6b. Montana forests: forest types
10/4	Field Lab 3A: Montane Forests
10/8	6c. Montana forests: forest animals
10/10	6d. Montana forests: forest dynamics
10/11	Field Lab 3B: Montane Forests
10/15	EXAM 2

SCN 105N: Montana Ecosystems Class Schedule

Date: _____ **Chapter. Topic:** _____ **Assignment due:** _____

Unit Three: Montana's Valley Ecosystems

10/17	7a. Grasslands	
10/18	Lab: Montana Special Places & Fun Facts	
10/22	7b. Sagebrush steppe	
10/24	8a. Wetlands	
10/25	Lab: Montana Landscapes	
10/29	8b. Wetlands	Project Report
10/31	9. Deserts	
11/1	Lab: Montana Ecosystem Maps	
11/5	EXAM 3	

Unit Four: Montana's Ecosystem Dynamics

11/7	10a. Biodiversity and ecosystem dynamics	
11/8	Lab: Montana Birds	
11/12	<i>No Class: Veterans Day</i>	
11/14	10b. Biodiversity and species interactions	
11/15	Lab: Montana Flowers	
11/19	10c. Species interactions in Montana	Choice #1
11/21	<i>No Class: Thanksgiving Travel Day</i>	
11/22	<i>No Lab: Thanksgiving Holiday</i>	
11/26	11a. Human impacts on ecosystems	
11/28	11b. Human Habitats	
11/29	Lab: Montana Mammals	
12/3	12. Montana Wildlands	Choice #2
12/5	EXAM 4	
12/6	<i>No Lab: Optional review for final exam</i>	
5/8	FINAL EXAM: Tuesday, 1:10 - 3:10, Lecture room 340	