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SCN 105N.00: Montana Ecosystems

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SCN105N: *Montana Ecosystems* course syllabus

Fall 2013

Instructor: Greg Peters

Contact: greg.peters@mso.umt.edu; 207-6154; 243-7848 to meet in office

Office Hours: M - Th, 12:30-1:30 in HB 02

Class meetings:

Montana Ecosystems meets twice weekly for lecture discussions and has one, two-hour Lab meeting each week. Check your class schedule for specific meeting times. To meet course requirements, all students must be enrolled in the lecture course *and* in one Friday lab section.

Course Description:

Montana Ecosystems explores the living systems of Montana with a focus on the dominant habitat types. We will explore the geologic setting that influences the distribution of Montana's remarkable diversity of ecosystems and species of life. We then examine in detail the dominant vegetation patterns across Montana and how these patterns influence distribution of important species of animals. We connect these systems to discussions of energy dynamics in living systems. Finally, we will discuss the human influence on natural systems.

Course Objectives:

- gain experience observing and reflecting on natural systems
- become familiar with Montana's dominant ecosystems
- understand the nature of science as a process
- understand principles of energy transformations in living systems
- become familiar with the human impacts on the landscapes of Montana

Assessment:

	points	grades
1) Exams (highest 4 of 5)	400	90-100% = A- to A
2) Lab Reports (3 @ 20 pts ea.)	60	80-90% = B- to B+
3) Mini-quizzes (highest 10 of 11 @ 5 pts ea.)	50	70-80% = C- to C+
4) Animal Presentation	20	60-70% = D- to D+
5) Montana Ecosystems Map	15	< 60% = F
6) Montana Special Spot project/ MTplaces	15	
7) Montana Conifer ID project	15	
8) Lab participation	25	
TOTAL:	600	

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 discussions. The Moodle supplement for this course includes portions of class presentations, records of your grades, and resources to submit written work online.

Course Policies:

Your lowest exam score will be dropped from your final grade; therefore, there will be NO make-up exams offered. In other words, an absence from an exam will count as your dropped exam. The final exam is comprehensive.

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.

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.

Laboratory:

The laboratory portion of this class (Friday classes) is required for completion of the course. Attendance will be recorded and graded. *Students may only attend the lab section for which they are registered.* Be sure to check the course schedule for the timing of lab activities and assignment due dates. Aspects of the Montana Ecosystems Friday Lab meetings include:

- **Field labs:** Our field trips are opportunities to explore some of the dominant ecosystem types of Montana and practice the process of scientific investigation in the field. Labs always meet first in the scheduled classroom, even on field trip days. Please be prepared for short distances of walking, unpredictable weather, and any personal needs such as food, water, and medication. Any emergency should first be brought to your instructor's attention.
- **Lab reports:** Each Field Lab will require a written Lab Report; due dates are in the class schedule. Specific expectations will be explained in more detail prior to the first Lab Report deadline.
- **In class activities:** A few Lab days will be in the classroom, with specific investigation of the dominant flora, fauna, and habitats of Montana.
- **Student Presentations:** Two lab days will be devoted to student presentations. Details will be discussed one week in advance.
- **Montana Ecosystems Maps:** Each student will be provided lab time to complete a map of Montana's major ecosystems, with important relevant information such as mountains and rivers.
- **Your Montana Special Spot:** Each student will be provided lab time to complete a one page outline (images and text) of one place in Montana, focusing on aspects such as climate, landscape, and the dominant flora and fauna.
- **Conifer Key:** Each student will be provided lab time to complete a one page field guide to the general types of conifers native to Montana.

Class Schedule

Lab group *A* or *B*? ____

Date: **Topic:** **Assignment due/ Quiz:**

Unit One: Montana's Landscape and Climate

8/26	Course Introduction	
8/28	1. Earth's ecosystems	Quiz 1
8/30	Lab: intro to lab & scientific investigation	
9/2	<i>No class: Labor Day Holiday</i>	
9/4	2. Montana physiography	
9/6	Field Lab 1A: Montane forests	
9/9	2. Montana's mountains, landscapes	Quiz 2
9/11	2. Montana climate	Quiz 3
9/13	Field Lab 1B: Montane Forests	
9/16	3. Montana ecosystem diversity overview	
9/18	EXAM 1	
9/20	Field Lab 2A: Grasslands	Lab Report 1

Unit Two: Montana's Mountain Ecosystems

9/23	4. Classification of Life on Earth	
9/25	5. Alpine habitats	Quiz 4
9/27	Field Lab 2B: Grasslands	
9/30	6. Montana forests: trees of Montana	Quiz 5
10/2	6. Montana forests: forest types	
10/4	Field Lab 3A: Floodplain Forests	Lab Report 2
10/7	6. Montana forests: forest animals	Quiz 6
10/9	6. Montana forests: forest dynamics	
10/11	Field Lab 3B: Floodplain Forests	
10/14	EXAM 2	

Class Schedule

Lab group *A* or *B*? ____

Date: **Topic:** **Assignment due/ Quiz:**

Unit Three: Montana's Valley Ecosystems

10/16	7. Grasslands	Quiz 7
10/18	Lab: Montana Conifers	Lab Report 3
10/21	7. Sagebrush steppe	
10/23	8. Wetlands	
10/25	Lab: Your Montana Special Spot project	Conifer Key due
10/28	8. Wetlands	Quiz 8
10/30	9. Deserts	
11/1	Lab: Montana Ecosystem Maps	Your MT spot
11/4	EXAM 3	

Unit Four: Montana's Ecosystem Dynamics

11/6	10. Energy transformations, food webs	
11/8	Lab: Prep for student presentations	Maps Due
11/11	<i>No class: VeteransDay Holiday</i>	
11/13	11. Biodiversity and ecosystem dynamics	Quiz 9
11/15	Lab: Student presentations, Group A	
11/18	11. Biodiversity and species interactions	Quiz 10
11/20	12. Human impacts on Montana's ecosystems	
11/22	Lab: Student presentations, Group B	
11/25	12. Human Habitats	
11/27	<i>No class: Thanksgiving Travel Day</i>	
11/29	<i>No class: Thanksgiving Day Holiday</i>	
12/2	12. Montana Wildlands	Quiz 11
12/4	EXAM 4	
12/6	Lab: Wrap-up and Final Exam review	
12/10	Final Exam: Tuesday, 1:10-3:10; same room	