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NRSM 121S.01: Nature of Montana

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NRSM 121S, Nature of Montana

Fall 2013, 3 credits

MW 1:10-2:00 pm, LA 11

Friday Discussion Labs (check your schedule for time and room)

Instructor: Laurie Yung
Office Hours: MW 2-3:00 pm
or by appointment

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Course Description

Nature of Montana examines key issues in contemporary natural resource management and conservation with a focus on human relationships with the environment in Montana and the Northern Rockies. The course utilizes a case study framework to examine social and political processes and ecological forces as they relate to forests, fire, water, agriculture, wolves, and climate change. These topics are explored from multiple disciplinary perspectives and provide windows into the interplay of culture, history, politics, and economics with biophysical processes. *Nature of Montana* fulfills the UM social science general education requirement. Lectures, class activities, readings, films, and written assignments are designed to impart information, examine different viewpoints, and encourage critical thinking.

Learning Objectives

Upon successful completion of this course, students will be able to:

- Describe key social, political, and economic forces that influence conservation and natural resource management in Montana
- Examine natural resource and environmental issues through multiple disciplinary lenses
- Apply knowledge and critical thinking skills to problem solving

Readings

All course readings are required and available through the University of Montana library course reserves (password is: nature). Readings include book chapters, white papers, journal articles, reports, magazine and newspaper articles, and online resources.

Important note: You are expected to complete all assigned readings before class, and to come prepared with questions. Lectures will build on readings and assume students have a reasonable understanding of the reading for that day. Students who fail to do readings on-time will find lectures and classroom activities difficult to understand.

Assignments and Grading

Your course grade will be based on the following:

Exam 1	300 points
Exam 2	300 points
Exam 3	300 points
In-class Essays	50 points
Participation	50 points
<i>Total</i>	<i>1000 points</i>

Exams

There will be three in-class exams throughout the semester. They will not be cumulative. Each exam will have short answer and short essay questions that require students to demonstrate factual knowledge and critical thinking skills. Exams will cover material from course readings, lectures, films, class activities, and guest speakers.

In-Class Essays

There will be occasional in-class essays in response to readings, films, and lectures.

Optional Paper

Students can opt to write a 3-4 page (typed, double-spaced) paper on a specific natural resource or conservation issue relevant to Montana. Students may select an issue of their choice, but it needs to be well-defined (e.g. energy would be too broad, but coal-bed methane development would work). Students then need to write a concise, persuasive argument about this issue akin to an op-ed one would find in a newspaper. Because the paper is short, you will need to be clear and focused, emphasizing your main point and providing evidence or arguments to support it. You do not need to use citations or provide a bibliography. Papers will be evaluated based on the clarity of the argument and the quality of the writing (including grammar, spelling, etc.). Papers will be due in-class on Friday, December 6th. Late papers will not be accepted under any circumstances. Your grade on this optional paper can replace an exam grade, if the paper grade is higher than the exam grade. Papers cannot be used to make-up missed exams. If you do poorly on your paper, it will not be counted toward your grade.

Participation and Discussion Sessions

While NRSM 121 is a large class, there will be opportunities for questions, discussions, and group activities, allowing for interaction and active engagement with course topics. In addition, students will participate in Friday discussion labs throughout the semester, allowing for more focused engagement with course material. Course grades will be based, in part, on student participation. Participation includes attendance, punctuality, attentiveness, effort, and being prepared for class (having completed any assignments, including the reading for that day). Participation also includes offering one's thoughts, ideas, opinions, and questions during class. Your participation grade is not based on knowing the "right" answers or the quantity or length of your comments (in fact, concise and succinct comments, where appropriate, are favorable), but rather on your willingness to contribute, evidence that you have completed and thought through material presented in the reading, and the quality of your contributions. In addition to talking in class, participation includes respect for differing opinions. Students who arrive late, miss class, and/or fail to do readings will be penalized. Students who miss five or more class periods (except in cases of documented illness or emergencies) will have points deducted from their participation grade. Students who miss more than 1/3rd of the class will automatically fail.

Grading Scale

Final course grades will be determined based on the following scale:

930-1000	A
900-929	A-
880-899	B+
830-879	B
800-829	B-

780-799	C+
730-779	C
700-729	C-
680-699	D+
630-679	D
600-629	D-
599 and below	F

All students must practice academic honesty. Cheating will not be tolerated and cell phones cannot be accessible during exams. Academic misconduct is subject to academic penalty by the course instructor and/or a disciplinary sanction by the University. All students should be familiar with the Student Conduct Code. The Code is available for review on line at: http://life.umt.edu/vpsa/student_conduct.php

This course is accessible and usable for otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in determining appropriate accommodations.

Office Hours

You may contact me by e-mail or phone, or come to my office hours (MW 2-3:00 pm). You are always welcome to make an appointment to talk outside of office hours. I encourage you to talk with me if you have any questions or difficulties with the material. Please don't wait until the day before an exam.

Communication and Expectations

Information about the course will occasionally be distributed to the class email list. Students should check their UM email accounts regularly so that they have current information about course readings and exams.

If students miss class, they are responsible for obtaining the material they missed. Please be sure to borrow lecture notes from fellow students, or otherwise find out what was covered so that you are not disadvantaged when taking your exams.

Please note that ***EXTENSIONS OR MAKE-UP EXAMS REQUIRE PRIOR APPROVAL FROM THE INSTRUCTOR (except in cases of family or medical emergency)***. In the absence of such approval (and presuming no serious emergency), a zero will be given if you fail to take an exam or turn in an assignment. Be sure to let me know by 11:00 am if you are going to miss the midterm and why. Make up exams will be given the following Monday or Wednesday. Students with family emergencies or series illnesses that require them to miss multiple classes will need to provide documentation (e.g. a doctor's note). Again, if you do not contact the instructor prior to class, you will not be able to make up the exam (exceptions for family or medical emergencies).

Course Schedule

- 8/26 Sustainability and Social-Ecological Systems
Chapin, F.S., Folke, C. and G.P. Kofinas. 2009. A Framework For Understanding Change. In Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World. Springer. pgs 3-12 and 41-53.
- 8/28 Change and Continuity in Montana and the Western U.S.
Chiras, D.D. and J.P. Reganold. 2010. Natural Resource Conservation and Management. In Natural Resource Conservation (10th Edition). San Francisco: Benjamin Cummings. pgs 1-45.
- 8/30 Discussion Lab: Your Environmental History

Forests and Fire

- 9/2 No class (Labor Day)
- 9/4 The Innovation of National Forests
The Greatest Good, Part I Film
- 9/6 Discussion Lab: Public Lands as Experiments in Democracy
The Greatest Good, Part II Film
- 9/9 Multiple Views of National Forests
Daily, G.C. 1997. Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems. Summary Report, Ecological Society of America, Washington, D.C.
- 9/11 Montana's Forests: Communities and Timberland Legacies
Morgan, T.A., Hayes, S.W., Keegan III, C.E., and C.B. Sorenson. 2013. Forest Products Outlook: Montana's Forest Products Industry. University of Montana Bureau of Business and Economic Research.
Little, J.B. 2009. Ensuring A Timberland Legacy. American Forests. pgs 32-37.
- 9/13 Discussion Lab: Forest Conflicts and Controversies
- 9/16 A History of Forest Management
Guest Speaker: Jim Burchfield, College of Forestry and Conservation
Chiras, D.D. and J.P. Reganold. 2010. Forest Management, In Natural Resource Conservation (10th Edition). San Francisco: Benjamin Cummings. pgs 371-392
- 9/18 National Parks and Wilderness

Keiter, Robert B. 2013. *To Conserve Unimpaired: The Evolution of the National Park Idea*. Washington D.C.: Island Press. pgs 1-11 and 261-270.
What is Wilderness? Wilderness.net

9/20 Discussion Lab: Native Peoples and Public Lands
Backbone of the World Film

9/23 Montana Fire Ecology
Guest Speaker: Ron Wakimoto, Ecosystem and Conservation Sciences
Barrett, S.W. and S.F. Arno. 1982. *Indian Fires as an Ecological Influence in the Northern Rockies*. *Journal of Forestry*. pp 647-651.

9/25 Fire History and Policy
Egan, T. (2009) *Excerpts from The Big Burn: Teddy Roosevelt and the Fire that Saved America*. New York: HMH Publishing
Hakanson, E. (2010) *Fuels Management Policy in the U.S. Forest Service*. PhD Dissertation. pgs 32-47

9/27 Discussion Lab: Fire, Fuels, and the Wildland Urban Interface (WUI)
Egan, T. 2002. *Era of Big Fire is Kindled at West's Doors*. *The New York Times*.
Kodas, M. 2012. *Life on the Edge (of Wildfire)*. *Onearth Blog*.
Headwaters Economics (2011) Summary: Wildland Fire Research

9/30 EXAM #1

Water, Agriculture, and Energy

10/2 Water in Montana
Chiras, D.D. and J.P. Reganold. (2010) *Managing Water Resources*. *Natural Resource Conservation (10th Edition)*. San Francisco: Benjamin Cummings. pgs 226-239

10/4 Discussion Lab: Water and Energy
Powder River Valley Film

10/7 Water and Agriculture
Chiras, D.D. and J.P. Reganold. (2010) *Irrigation: Issues and Solutions*. *Natural Resource Conservation (10th Edition)*. San Francisco: Benjamin Cummings. pgs 248-253
Miller, M. (2005) *Drought Effects on the Ranching Industry in Southeastern Colorado*, *Rangelands*, pgs 17-18.

10/9 Water Policy and In-Stream Flow
Guest Speaker: Sarah Bates, Natural Resources and Environmental Policy Center

Bates, S. 2009. *Forests in Hot Water: Climate Change, Water, and our National Forests. Your National Forests. National Forest Foundation.*
Bates, S. 2012. *Where Land and Water Meet: Emerging Partnerships in the West Address Water Conservation Issues. Saving Land. The Land Trust Alliance.*

10/11 Discussion Lab: Water Allocation

Trout and Drought Film

10/14 Collaboration and Watershed Groups

Guest Speaker Jim Burchfield, College of Forestry and Conservation
Snow, D. 2001. *Montana's Clark Fork: A New Story for a Hardworking River. In Across the Great Divide: Explorations in Collaborative Conservation and the American West. Washington D.C.: Island Press.*

10/16 River Restoration on the Clark Fork

Tyler, B. 2011. *The Legacy of the Poisoned Clark Fork. Missoula Independent. Milltown Reservoir Superfund Site FAQs. Clark Fork Coalition. The Three Rs of the Milltown Superfund Project. Clark Fork River Technical Assistance Committee.*

10/18 Discussion Lab: Copper Mining, Waterways, and Communities

Butte, American Film

10/21 EXAM #2

Biodiversity and Wolves

10/23 Endangered Species Policy

Alexander, K. 2011. *The Gray Wolf and the Endangered Species Act (ESA): A Brief Legal History. Congressional Research Service.*

10/25 Discussion Lab: Biodiversity and Social Values

Chiras, D.D. and J.P. Reganold. 2010. *Plant and Animal Extinction. In Natural Resource Conservation (10th Edition). San Francisco: Benjamin Cummings. pgs 406-426*

10/28 History of Wolf Management

Bozeman Chronicle. 2010. *An Expanded Wolf Timeline*

10/30 Wildlife Conservation, Rural Communities, and Livelihoods

To Kill a Wolf: Wolves and the Ranching Community Film
Kemmis, D. 1998. *A Democracy to Match its Landscape. In Reclaiming the Native Home of Hope: Community, Ecology, and the American West. Salt Lake City: University of Utah Press. pgs 2-14.*

Fischer, H. 1998. Moving Past the Polarization: Wolves, Grizzly Bears, and Endangered Species Recovery. In Reclaiming the Native Home of Hope: Community, Ecology, and the American West. Salt Lake City: University of Utah Press. pgs 121-126.

11/1 Discussion Lab: Wolves and Social Conflict

Backus, P. 2011. Ravalli County Wildlife Plan Calls for Unlimited Wolf, Lion Hunting. Ravalli Republic.

Additional reading on course reserve

Climate Change

11/4 Population

Human Overpopulation. Wikipedia.

11/6 Consumption and Globalization

Executive Summary. Overconsumption? Our Use of the World's Natural Resources. SERI.

11/8 Discussion Lab: Thinking about Fairness and Justice

11/11 No class (Veteran's Day)

11/13 Climate Change 101

Chiras, D.D. and J.P. Reganold. (2010) Global Warming and Climate Change. In Natural Resource Conservation (10th Edition). San Francisco: Benjamin Cummings. pgs 513-528.

Steffen, W. 2011. A Truly Complex and Diabolical Policy Problem. In The Oxford Handbook of Climate and Society. Oxford University Press. pp 21-37.

11/15 Discussion Lab: The Politics of Climate Science

Norgaard, K. 2011. Climate Denial: Emotion, Psychology, Culture, and Political Economy. In The Oxford Handbook of Climate and Society. Oxford University Press.

11/18 Climate Change and Montana's Forests

Gillis, J. 2011. With Death of Forests, A Loss of Key Climate Protectors. The New York Times.

11/20 Climate Change Impacts at Multiple Scales

Climate Change: The Social and Economic Impacts. Earthwatch Institute. pp 1-8.

American Security Project. Pay Now, Pay Later: Montana

Harvard Medical School. 2009. Climate Change and Health in Montana.

ClimateWise. Missoula County.

11/22 Discussion Lab: Climate Adaptation in Montana

11/25 Building Solutions to Climate Change I

11/27 No class (Thanksgiving Break)

11/29 No class (Thanksgiving Break)

12/2 Building Solutions to Climate Change I

12/4 Systems Thinking Revisited

Walker, B. and D. Salt. 2006. Living in a Complex World: An Introduction to Resilience Thinking and The System Rules: Creating a Mind Space for Resilience Thinking. In Resilience Thinking: Sustaining Ecosystems and People in a Changing World. Washington D.C.: Island Press. pgs. 1-10 and 28-38.

12/6 Discussion Lab: Social-Ecological Systems in Montana

12/11 1:10-3:10 pm Exam #3 (not cumulative)