



Spring 2016

NRS 564 Placed-based Ecology II - Course Syllabus -

I. General class information

Course credits

2

Class description

Life around us seems to pause during the winter season – lively green of summer fades and fall yellows and reds ensue, followed by snow covered landscapes; bird songs and humming insects become absent and everything feels cold. In this course we will explore how plants and animals manage the unique survival challenges of winter. During the first part of the course, we will delve into the fundamentals of winter ecology including the changing snowpack, life under the ice, plants and animals in the winter environment and plant-animal interactions. The second part of the course will focus on environmental change and how it might alter the winter ecology around us. Once we approach spring at the end of the semester, we will be studying fundamental chemical and physical processes that drive the natural world emerging out of its apparent hibernation.

We will use the outdoors as a classroom to gain hands-on knowledge and practical experience. Field experiences will be fundamental in your understanding of the ecology that surrounds us, we will take field trips to various locations to gain crucial insight into the natural world during the winter and spring seasons. Your outside experience and learning will be complemented by lectures, group discussions, readings, and field experiments. For the term project, we will ask you to track phenological changes throughout the semester through drawing, writing, and environmental monitoring data. At the end of the semester, you will present your term project to your peers and hand in a final assignment that summarizes the phenological changes you captured throughout the winter and early spring.

Specific learning objectives

- Understand basic winter and spring ecological processes and principles
- Collect, analyze, and interpret ecological data
- Use and operate scientific equipment and software available at the McCall Outdoor Science School (MOSS) for ecological research
- Read, analyze, and discuss scientific literature

Aligning to UI learning outcomes

- Learn and integrate – Through independent learning and collaborative study, attain, use, and develop knowledge in winter and spring ecology.
- Think and create – Use multiple thinking strategies to examine real-world ecological issues, solve problems, and make consequential decisions.
- Communicate – Acquire, articulate, create and convey intended meaning using verbal and non-verbal methods of communication that demonstrate respect and understanding in a complex society through discussing ecological research papers and writing a scientific research paper.

Contact information

Instructors:

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Office hours: By appointment

Location: Lake yurt and outside. Important: A substantial part of this class will be outside so please bring appropriate clothing.

Class website

<http://ecosensing.org/teaching/nrs-564-placed-based-ecology-ii>

Grading

Format: Mid-term exam, final project, final presentation, in-class participation

Changing snow pack lab report: 10 points

Mid-term exam: 30 points

Term project:

 Final project: 40 points

 Final project presentation: 10 points

In-class participation: 10 points

Grading basis: A/F

A = 90 points, B = 80 points, C = 70 points, D = 60 points

Main text

Marchand, P.J. 2013. Life in the Cold – An Introduction to Winter Ecology. Fourth edition. University Press of New England.

Slides

If slides are used during lecture, they are available after the lecture to download from our class website <http://ecosensing.org/teaching/nrs-564-placed-based-ecology-ii/slides/>

II. Class schedule

Day	Topic	Required readings	Important dates
1 (Jan 3)	Class introduction The changing snowpack	Chapter 2	Changing Snowpack lab report due Jan 11
2 (Jan 4)	Plants in the winter environment	Chapter 3	
3 (Jan 5)	Animals and the winter environment	Chapter 4	
4 (Jan 6)	Plant-animal interactions: food for thought Wolverine presentation and telemetry	Chapter 6 and 7 Copeland et al., 2010 Introduction to GIS tutorial	
5 (Jan 19, 26)	Life Under the Ice	Chapter 5 The lake is alive	
6 (Feb 2,9)	Check in 9 am, update in phenology project, midterm exam, location: Spirit yurt. Time to work on phenology project		Midterm exam
7 (Feb 16, 23)	Snow Science Field day	TBD	
8 (March 2, 9)	Check in 9 am, update in phenology project, location: Spirit yurt Time to work on phenology project		
9 (March 30, April 6)	Climate Science Field Day, Salmon River/Riggins	TBD	
10 (April 13, 20)	Chemical Ecology/Naturalist Field Day, Rapid River trail.	TBD	
11 (May 1-5, 8-12)	Field trip to Taylor Research Station. Topics: Place based ecology of Big Creek, Frank Church		Final project presentation

	Wilderness Presentation of term project		
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III. Assignments

Term project

You will track phenological changes throughout the semester through drawing, writing, and data. During each class session, you will have a drawing prompt (e.g., draw a bird you have seen over the last couple of weeks, draw a track etc.), writing prompt (e.g., what phenological changes did you observe etc.), and will fill out a data table (see table below).

Date*	Tracks	Mammals	Plants (e.g., growth stage)	Birds	Air Temp	Soil Temp	Sap flow**	Time lapse	Stream flow	Snow depth	Ski days

*Please make sure you have at least one entry per week between the beginning and end of class

**Note: We will only download data once or twice per semester

Homework

To ensure that your data table has a minimum of one entry for each week of the semester, your homework will be to record your observations (fill out table, record in journal) during weeks you do not have class.

Final Project

The final project will be a summary of the phenological observations you have recorded throughout the semester. These include all of the elements listed in the table above, however if there are other observations you wish to include please do so. The goal of this project is to gain a deep understanding of phenological changes throughout the winter and spring to develop a multifaceted, deep rooted relationship with local ecosystems.

For the final project we would like you to have as much creative freedom as possible, hence the format is largely up to you. Some ideas might be a video, a podcast, a creative writing piece, a collection of art pieces, a song, a blog, or a traditional scientific report. Because of this creative freedom, you will be asked to get instructor approval and to present your progress to the group at the beginning of each class period listed on the class schedule. On that note our expectations will be 1) that you include ecological observations that you make throughout the semester and the phenological changes are expressed within your project, 2) demonstrate and express your own creativity in how you present your phenological observations. You will have to present your project to your peers when we are at Taylor Ranch. This presentation can take the format of your project, it can be verbal, visual or any sensory mix.

As noted in the class schedule above there will be time allotted each class period for you to give an update on your project. This will allow constructive faculty and peer feedback with the aim of improving your final piece.

For grading we will follow this scoring rubric:

Final project (40 pts):

Grading criteria	Max pts	Pts received
Creative manner in which phenological observations are presented	20	
Are the observations clearly organized and easy to follow?	5	
Thoroughness	5	
Are there clear links between observations and the local ecology?	10	
Total	40	

Final project presentation (10 pts):

Grading criteria	Max pts	Pts received
Creativity manner in which observations were expressed	2	
Were the presented observations clearly organized and easy to follow	1	
Did the presenter show enthusiasm for his/her work	1	
Did the presenter appear prepared	1	

Did the presenter appear to understand the material he/she presented	2	
Timing (length of presentation not much below or above 15 minutes)	1	
Delivery (e.g. clear voice, eye contact with audience, use of vocal fillers such as “um”, “uh”, and “like”, effective use of body language)	1	
Professional appearance appropriate for Taylor Research Station	1	
Total	10	

Readings

Assigned readings should be done before class. You will be tested on the content covered in the readings during the midterm exam.

IV. Midterm exam

The midterm exam will be on day 7 of class. You will be tested on topics we covered in class and that are covered in the assigned readings. For some more information about the final exam (e.g., format of final exam, example questions), please refer to <http://ecosensing.org/teaching/nrs-564-placed-based-ecology-ii/midterm-exam>.

V. General Notes

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 306 in order to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course.

- 885-6307
- email at <dss@uidaho.edu>
- website at www.uidaho.edu/dss

University of Idaho Classroom Learning Civility Clause

In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning.

Should you feel our classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your

concern. Additional resources for expression of concern or requesting support include the Dean of Students office and staff (5-6757), the UI Counseling & Testing Center's confidential services (5-6716), or the UI Office of Human Rights, Access, & Inclusion (5-4285).