



## BIO 215/315 MALHEUR NATURAL HISTORY STUDIES

(3 credits)

**Course Description:** a selective study of the natural history of Oregon with emphasis on the southeastern portion of the state and the Malheur National Wildlife Refuge. Areas of focus include aspects of ecology, geology, botany, zoology and human settlement. The course includes on-site studies centered at the Malheur Field Station located near Burns, Oregon.

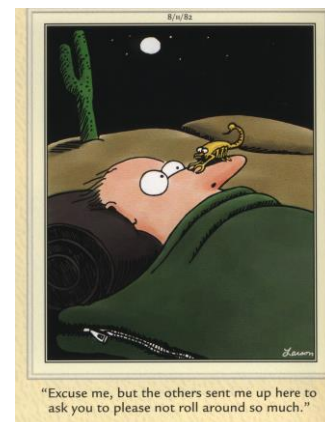
**Instructor:** Brad Tripp, Ph.D., Professor of Biology

Office: Gotham Hall (Science) 2001

Telephone: (503) 517-1070

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Office Hours: M/W 10:30-11:15 or by appointment



### Time/Location:

	<u>Day</u>	<u>Time</u>	<u>Room</u>
Lecture:	T/Th	10:30 – 11:45 pm	SCI 2001
Field trip:	April 13-17, 2020		

### Required Materials:

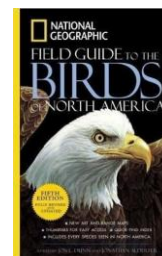
**National Audubon Society Field Guide to the Pacific Northwest.**

Alden P, Paulson D. 2009. New York: Knopf. ISBN 978-0679446798

**National Geographic Society: Birds of North America, (7th edition)**

ISBN 9781426218354

**Binoculars: 7x35** (minimum specs, avoid small opera type glasses)



### IMPORTANT NOTES:

The field outing will involve short to moderate length hikes (0.5 - 3 miles) along trails or roads. Therefore, appropriate clothing and footwear (no open-toed shoes) will be required. It is also advisable to bring along bottled water to prevent dehydration. Restrooms are rustic and often occur at infrequent intervals.

If a student drops the course at any time after the first two weeks of class (open add/drop) but before the field trip, this student **will NOT receive a refund**. These are pre-arranged costs that were determined based on the number of students who enrolled and paid for the lecture and field segment of the course.

**Evaluation:** The student will demonstrate achievement of the course objectives by taking written examinations, maintaining a notebook of course materials, keeping a journal of field observations and preparing a report of the plant population study. Grades will be based on the following point system.

<b>Assignments</b>	<b>Points</b>	<b>Percentage</b>
Exams over lecture / reading materials/video clips	200	28.6
Class Assignments/Attendance	150	21.4
Exam over field observations and species identification	100	14.3
Plant population reports	150	21.4
Field journal and Reflection	75	10.7
Plant Collection	25	3.6
Total points possible	700	100

Grades will be assigned based on a percentage of the total points earned divided by the total points possible. The breakdown of grades is 100- 90=A, 89-80=B, 79-67=C, 66-56=D, less than 55=F but maybe subject to slight modifications at the instructor's discretion.

**In order to pass the course, you must get at least 60% of the points for Plant Population/Field Journal/Plant Collection**

\*\*\*Total Points are subject to change at the instructor's discretion\*\*\*

\*\*\*\* **No make-up Exams will be given!!!!** \*\*\*\*

**If you must miss an exam it is your responsibility to make arrangements to take it one week in ADVANCE.**

#### **General Information:**

1. With the exception of science majors, students taking this course should be enrolled in BIO 215. BIO 315 is intended for science majors and will involve additional and more detailed population study and plant collection requirements.
2. Attendance on the trip is required to pass the course. Students missing more than 3 scheduled lectures will not receive a grade higher than a B, 3 tardies = 1 absence.
3. The fee assessed at the time of registration to cover travel, meals and lodging expenses does not cover meals for Monday. You will need to bring a sack lunch and purchase dinner.
4. We will leave WPU on Monday at 7 am (sharp!) and will return Friday evening (approx. 6 pm). It is advised that you refrain from making definite evening plans as weather, road conditions, etc. may lengthen the return trip.
5. Participants will need to bring appropriate clothing, sleeping bags or bedding and all other essentials, as we will not be near any shopping facilities.
6. Selected reading materials will be placed on reserve in the library (See Malheur Collection).

## Course Policies:

### Attendance

You are expected to attend all classes. You are responsible for all class material and activities in the event you are absent. While attendance is not graded, there are certain number of points from in-class assignments and quizzes if you miss one of these the points for that day are forfeit, unless you are participating in a mandatory WPU sanctioned event. Attendance on the trip is required to pass the course. Students missing more than 3 scheduled lectures will not receive a grade higher than a B, 3 tardies = 1 absence.

### Disabilities

Any student who has a documented disability that may require accommodation to fully participate in this class should contact Jann McCaul, Disabilities Services Coordinator at 503-517-1577 or [jmccaul@warnerpacific.edu](mailto:jmccaul@warnerpacific.edu) as soon as possible. Students with an Accommodation Plan through Disabilities Services who would like to discuss the plan with me should make an appointment. Students who wish to discuss emergency medical information or special arrangements in case the building must be evacuated should also make an appointment to meet with me. To receive an accommodation, your disability must be on record with Disabilities Services Coordinator and accommodation plan must to be received to the instructor of record.

### Cheating and Plagiarism:

Cheating on tests or other assignments will not be tolerated and will be dealt with as described in your student handbook. If you discuss your homework assignments with friends (which is ok) your answers **must be your own synthesis** of the ideas. If two homework assignments are the same (even if the wording/formatting is slightly different) I will divide the grade between the two of you. Using someone else's ideas (even if you synthesize it) without giving them credit is plagiarism. It is against the law and academic policy. I am not lenient in this area.

### Assignments:

All written assignments are to **be typed** unless otherwise stated. All assignments at the **beginning** of the class period of the date due or they will be considered late. Generally, for each day an assignment is late 10% will be deducted. Once the examination covering the material has taken place labs, assignments or other work will not be accepted.

**E-mail attachments will not be accepted without prior authorization.**

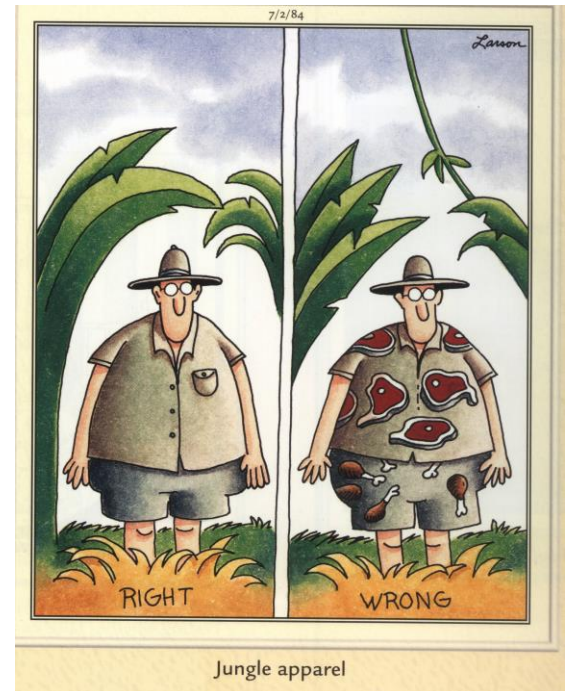
### Technology:

Any technology: computers, I-pods, phones, smart watches and the like that are disruptive or **distracting to other students** in the class must be shut off during class sessions, this designation at the instructors' discretion. Cell phones must be in silent mode when you enter the classroom. If you work in a situation where you are on-call during class time, you must notify the instructor prior to the beginning of class leave the classroom before responding. NO EXCEPTIONS!

***Note:** The provisions of this syllabus may be added to, deleted from, or changed if, in the mind of the instructor, it becomes necessary to do so to achieve the course objectives. The student will be advised, in advance, of any such changes. Posting to the course website constitutes notification of change (7 days advance notice). Total points are subject to change at the discretion of the course instructor.*

## Supply List Suggestions for the Field Trip:

- ☐ sleeping bag
- ☐ pillow
- ☐ outdoor clothing for 5 days (warm & cold)
- ☐ appropriate footwear for walking on natural terrain (no open-toed shoes)
- ☐ coat / cap / gloves
- ☐ toiletries (towel, soap, toothpaste, toothbrush, etc.)
- ☐ personal medications
- ☐ flashlight
- ☐ binoculars
- ☐ camera/film
- ☐ field guides
- ☐ field journal
- ☐ pen / pencil
- ☐ chapstick
- ☐ sunglasses
- ☐ snacks
- ☐ homework
- ☐ sack lunch (for Monday)
- ☐ cash (Monday dinner, field station souvenirs)



## BIO 215/315 MALHEUR NATURAL HISTORY STUDIES

### Course Objectives:

Given the information from lectures, reading, and laboratory exercises, the student will be able to demonstrate in writing (on exams) and in laboratory activities and reports the following terms and principles related to:

1. Understand the components of ecosystems and human impacts.
2. Understand the basic geology of Oregon and explain the development of noted geological formation
3. Understand the importance of the National Wildlife Refuge System and history.
4. Identify Oregon plants and animals and understand their role in ecosystems.
5. Read, interpret, and synthesize literature and multimedia information on Oregon ecology.
6. Make scientifically informed decisions about societal issues related to wildlife and natural resources.
7. Perform and interpret population studies for selected plant communities
8. Explain, in writing, basic concepts relevant to the natural history of the Malheur area and other regions of Oregon

### Student Learning Outcomes

Given the information from lectures, readings and multimedia, and laboratory exercises, the student will be able to demonstrate in writing (on exams) & completion worksheets and laboratory activities and reports the following terms and principles related to:

1. Demonstrate an understanding of the components of ecosystems and human impacts by successful completion of: [Ecology 1](#), [Ecology 2](#), [Wildflower collection and plant reports and portions of Exam 1](#)
2. Demonstrate an understanding of the basic geology of Oregon and explain the development of noted geological formation by successful completion of: [Geology 1 and 2](#), [filed journal](#), and [portions of Exam 1](#)
3. Demonstrate an understanding of the importance of the National Wildlife Refuge System and history by successful completion of: [History](#), [assignment field journal](#), and [Exam 3](#).
4. Identify Oregon plants and animals and understand their role in ecosystems by successful completion of: [PNG assignment](#), [NG 1 and 2](#) and [portions of Exam 2 and 3](#).
5. Read, interpret, and synthesize literature and multimedia information on Oregon ecology. [All worksheets](#), [plant reports](#), [field journals](#), and [plant reports and portions of exam 1-3](#).
6. Make scientifically informed decisions about societal issues related to wildlife and natural resources. [Filed journal and worksheets](#)
7. Perform and interpret population studies for selected plant communities by successful completion of the [three plant reports](#)
8. Explain, in writing, basic concepts relevant to the natural history of the Malheur area and other regions of Oregon by [keeping a field journal and completion of plant reports](#). and on exams.

### Student Learning Outcomes Supporting the Core Curriculum

BIO 215 is a survey course designed to introduce scientific knowledge and topics to students. This course satisfies the Scientific Reasoning Core Studies requirement and meets the core studies objective as outlined in the college catalog particularly: L7. Utilize scientific knowledge to understand and explain the natural world.

### Biological Science Major Competencies

Upon successful completion of the major in Biological Science, graduates will be able to:

- Demonstrate a comprehension of the fundamental concepts, theories, language and historical context of the biological sciences.
- Demonstrate the ability to integrate the disciplines within the sciences and mathematics in order to critically approach and evaluate theories, quantitatively analyze data and solve problems.
- Understand and apply scientific methodologies through the formulation of hypotheses, use of current research technologies and statistical applications, and the evaluation and presentation of results.
- Effectively communicate their approach to data analysis and problem solving in both written and oral form.
- Demonstrate the use of basic technical skills related to the practice of biology.
- Articulate their worldview of the integral relationship science and faith have in relation to the ethical, moral and spiritual issues of our society.

**Learning Activities:**

Activities that the student will be involved in to meet the course objectives include:

1. Attending lectures and field trips
2. Reading assigned materials
3. Maintaining a notebook of course materials
4. Recording field observations during the field trips
5. Gathering population data for plant and animal communities in urban locations and drawing conclusions based on statistical analysis of the data
6. Analyze, synthesize and integrate information about the Malheur area and natural history

**Time Estimates for Students to meet course expectation**

<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	<b>Sunday</b>
	Class 1:00-2:15		Class 1:00-2:15			
Est time 1.5-2.0 hours	Est time 1.0-1.5 hours	Est time 1.0-1.5 hours	Est time 1.0-1.5 hours	Est time 0.5-1.5 hours		Est time 0.5-1.5 hours
1. Complete the lab/worksheet if you have not done so	1. Take 10-15 minutes and review lecture notes for today, Identify 1-2 important concepts not facts!	1. Read Materials for Thursdays' class.	1. Take 10-15 minutes and review lecture notes for today, Identify 1-2 important concepts not facts!	1. Labs are due Tuesdays, make sure your is complete and you understand the concepts	Have Fun Forget Malheur unless there is a test scheduled for the coming week!	1. Labs are due Tuesday, make sure your is complete and you understand the concepts
2. Read Materials for Tuesday's class.			2. Look over the previous days lecture notes			2. Look over the previous days lecture notes
			3. Read material the current section			3. Read material the current section

Time estimates are for students that are well prepared with normal study skills, some students may need additional time to complete assigned work, time estimates assume that a student is focused on this task solely and not attempting to "multi-task".

Note, however, that your grade is based on performance, not on how many hours you spend studying. You are responsible for keeping your own record of your performance in the class and for contacting me promptly if you need help improving it. Waiting until the week before the final to ask "how can I pass the class" is NOT a formula for success.

PNW=Filed Guide to the Pacific Northwest  
MM=Malheur Manual on Flash  
NG=Nationals Geographic Guide to Birds of N.A.

### Tentative Outline 2018

Date	Topics	Assigned Readings from Texts	Due Dates
<b>Week 1</b>	<b>Introduction &amp; Orientation</b>		
1/14	Introduction	PWN 10-15	
1/16	Topography	MM 60	
<b>Week 2</b>	<b>Principles of Geology</b>		
1/21	Geology-General	PWN 16-27	Table/Figure
1/23	Geology-Oregon		
<b>Week 3</b>	<b>Geology of Oregon</b>		
1/28	Geology	PNW 414-415,420, 422-23, 425	Geology 1
1/30	Rock Lab		
<b>Week 4</b>	<b>Elements of ecology I</b>		
2/4	Ecosystems	PWN 28-39, 44-45, 76-77	Geology 2
2/6	Communities	MM 9-27	
<b>Week 5</b>	<b>Elements of ecology II</b>		
2/11	Populations	PNW 46-51, 54-61	Ecology 1&2
2/13	<b>Exam 1</b>		
<b>Week 6</b>	<b>Vegetation</b>		
2/18	Plants	PNW Mushrooms (p. 78-79), algae (p. 83), lichens (p. 85-86)	
2/20	Plants	spore plants (p.88, 91), wild flowers (p. 130-131) shrubs and trees (p. 94-95, 102-103, 107, 111), MM 32,34,40,41,43,44,45,	Plant Lab
<b>Week 7</b>	<b>Animal adaptations</b>		
2/25	Animals	PNW Invertebrates (166, 187, 189, 192-193, 198, 201, 203, 205, 207-208), vertebrates (220), amphibians (243, 245-246), reptiles (248-250, 252), mammals (330-331, 340, 352, 358-359)	PNG assignment
2/27	Animals		

<b>Week 8      Essentials of ornithology</b>			
3/3	Birds	PNW Birds 255-257	Bird Topography
3/5	Birds	NG 6-19	
<b>Week 9      History - human settlement</b>			
3/10	BIRD Walk-with Journal Entry		NG assignment
3/12	History		
Week 10			
3/17	History		
3/19	<b>Exam 2</b>		History
Week 11			
	Spring Break		
3/24	Spring Break		
3/26	Spring Break		
Week 12			
	Population sampling		
3/31	Qudrat/Point Quarter	MM 46-49,53-56	
4/2	Lab Activity		
Week 13			
	Population sampling		
4/7	Circle Plot/Line Intercept	50-52,57-59	Sample Data
4/9	Final trip information		
<b>Week 14      Field Trip to Malheur Field Station</b>			
4/13-17	Exam 3 (4/17)		
<b>Week 15      Post Field Trip</b>			
4/21	Data from all groups due-Begin Calculations		Data Sets
4/23	Plant identification		
<b>Week 16      Environmental stewardship</b>			
4/28	Plant ID		FJ/plant collection
4/30	Closing Lecture		
<b>Finals Week      Final Assignments Due</b>			
5/5	Plant Reports Due on Tuesday at the Final Time		Ecology Plant Reports