

BIOL 4540 – ECOSYSTEMS OF CALIFORNIA - FALL SEMESTER 2016

Lectures: BIOS 244; MW 12:15pm-1:30pm

Instructor Information

Instructor

Dr. Eric Wood

Email

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Office, Hours, & Phone

La Kretz (A) 312, W (2-3p), x 2055

OFFICE HOURS: Although I have one time listed above for formal office hours, you should feel free to stop by my office anytime. If my door is closed, I am either away or busy. If my door is closed, feel free to knock. But, please never attempt to open my door unannounced. In general, if my door is open (and I do my best to keep it this way), I am available. You can also email me to schedule a meeting for a time that works for you.

REQUIRED TEXT:

Ecosystems of California. 2016. Harold Mooney and Erika Zavaleta (Editors), UC Press

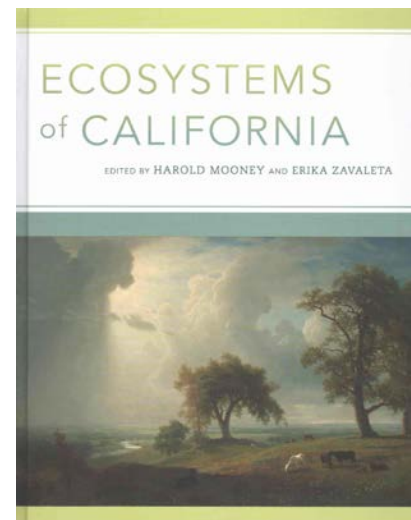
Book can be purchased in three ways:

- (1) CSULA Bookstore
- (2) Amazon (Option for reading on Kindle)
- (3) Directly from UC Press
(<http://www.ucpress.edu/book.php?isbn=9780520278806>)

Unfortunately, this is a brand new book so there are likely not too many used versions available online. But, feel free to purchase a used copy if you can find one. Further, I have been told there will be an option to rent the text from the bookstore.

We will be covering chapters throughout the book and students will be expected to keep up with readings. For graduate students, or those with an interest in California ecology, this book is an essential edition to your library. It is hot-of-the-presses, and is the gold-standard for understanding ecology and biodiversity within the state. For students who may have a difficult time purchasing the book, please consider these two options: **(1)** find a group of students to share (either purchase or rent) the book, or **(2)** use the copy that I have placed in the library reserve. If you fall behind in the readings, it will be difficult to keep up with the course.

COURSE WEBSITE: The course site on Moodle will be your resource for acquiring information and required materials. I will post readings and information regarding assignments there. The Moodle site also has the schedule of lectures and due dates for assignments and exams. Any changes to the schedule will be posted on this site as well.



COURSE OVERVIEW

California is one of the most biodiverse temperate areas in the world, primarily due to its large area, proximity to the Pacific Ocean, extremely variable topography and climates, and bulging human population, which all lead to an enormous diversity of vegetation types and ecosystems found within the state boundary. What is an *ecosystem*? Broadly defined, an ecosystem is the plants and animals (biotic), and environmental features (e.g., water, abiotic elements), which share an environment. Each biotic and abiotic unit of an ecosystem has a role. The study of the interactions of both living and non-living components of ecosystems is termed *Ecosystems Ecology*, which is the branch of ecology that this course is situated on.

I have two primary goals for this course. The first is for students to understand the major ecosystems in California, including both abiotic (e.g. formation, geology and climate) and biotic (e.g. plant and animal communities) features within each ecosystem under study. My lectures will rely heavily on the course textbook as we take a tour from the ocean, through the valleys and mountains, and out to the desert throughout our lectures. I have extensive experience in many California ecosystems, both with my research and travel, and I will regularly share my experiences to aid student learning. My second goal is for students to understand both historic and contemporary research that has occurred in the ecosystems found within California. California ecosystems have been extensively studied and have provided the research setting for much of our current knowledge regarding ecology and conservation. Each student in this class will embark on a meta-analysis research project for a given ecosystem. This work will culminate in a research paper.

As with all of my courses, a major goal of mine is to empower students with ecological and conservation knowledge that I hope extends far beyond the classroom. I want you to be an informed citizen and critical thinker when it comes to pressing ecological and conservation issues. Therefore, I will do my best to create a learning environment where creative and analytical thought and discussion are valued.

COURSE LEARNING OBJECTIVES

By the end of this course, my goals are that students will be able to:

1. ...describe the biodiversity, ecology, and evolutionary drivers of the major ecosystems in California.
2. ...critically analyze ecological studies (including methods and results) and the role and interpretation of seminal ecological research performed within California ecosystems.
3. ...understand and evaluate historic, current, and future conservation and management efforts in California's ecosystems.
4. ...effectively communicate scientific research in the form of a formal scientific paper.

COURSE POLICIES

ATTENDANCE AND PARTICIPATION in the lectures and field trips is required, and forms part of your grade (40 points). Attendance entails signing a roster at the beginning of selected lectures or

field trips (timely arrival is mandatory), and participation involves fully contributing in the scheduled activities. Since the class schedule is set in advance, conflicts with outside employment will not be accepted as a valid excuse for absence from a field trip (*students must attend two out of three field trips*). Further, arriving to lecture on time is critical. Coming in late disrupts the class and me. If you consistently arrive late to class, this will negatively impact your grade.

OTHER REQUIREMENTS: Each student is expected to have access to the MyCalStateLA campus portal. Class materials will be made available on the course Moodle site, accessible through the MyCalStateLA portal. Email correspondence with instructors must occur through your Cal State LA email account – we cannot reply to emails received from accounts administered outside Cal State LA.

ACADEMIC HONESTY: Students are expected to abide by the University's Academic Honesty Policy, (<http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>). Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation. Students are expected to do independent work on all exams and assignments; copying from each other or from any other source without proper attribution will be considered plagiarism.

STUDENTS WITH DISABILITIES: Reasonable accommodation will be provided to students with documented disabilities on a case-by-case basis. Students must register with the Office for Students with Disabilities (<http://web.calstatela.edu/univ/osd/>; Administration Building, Room 127; 323-343-3140) and provide appropriate documentation to the university before any academic adjustment will be provided. It is the responsibility of the student to initiate any request for accommodation in the course; the Office for Students with Disabilities does NOT notify faculty unless the student requests it for that course. I am happy to make accommodations, but I cannot make them without prior notice.

PHONES IN CLASS: NO phones in class (unless of course it is an emergency). It is disrespectful to your classmates, the course, the field of ecology, and me to be fiddling with your phone during lectures or field trips. It will not be tolerated.

LAPTOPS IN CLASS: I will make the slides available on Moodle prior to lectures. However, you will notice that many of my slides are 'light' on text. This is on purpose, as I strongly expect and encourage you to take handwritten notes during lectures based on material that we are discussing, rather than blankly following along. You need to take notes to fully gather material discussed in course. Further, my courses often involve discussion that stems from lecture topics. For every discussion we have, I keep track and will often include material on tests. To make sure you are prepared, you need to attend lectures and be active with your notetaking. If you feel it is best to use your laptop to follow along and take notes (with inserted digital comments), this is fine. But, I will also number slides – for organization purposes - if you prefer to take hand-written notes.

ASSESSMENT

Point values are as follows	Points	% of grade
Attendance and Participation (lectures and field trips)	40	8
Field Trip Reports (Two reports, 25 pts each)	50	10
In-class Pop Quizzes (Five quizzes - 10 pts each)	50	10
Midterm Examination 1	50	10
Midterm Examination 2	50	10
Midterm Examination 3	50	10
Final Examination	80	16
Paper Proposal, including literature review	50	10
Final Paper	80	16
Total	500	100%

ATTENDANCE, 40 points. As mentioned above, attendance is required for lectures and at least two field trips. I will be periodically taking attendance in lecture, and we will do a handful of in-class quizzes. Make-up quizzes are not allowed.

FIELD TRIP REPORTS, 50 points. Students will complete two lab reports from field trips. Lab reports will be a concise write-up of our trip, including material I covered and observations you made. Further, I will pose a series of questions after each field trip that you will be required to answer for your lab reports. I will provide full details on what is expected from the field trip reports and these will be available on Moodle prior to field trips.

IN-CLASS POP QUIZZES, 50 points. We will have five 'pop-quizzes' in class, which will cover material from readings and previous lectures. Quizzes will start promptly at the beginning of class. Tardy students will not have a chance to make-up questions that were missed.

EXAMS, will reflect the material covered in the readings, lecture activities, and field trips. Exams will be composed of multiple choice, true/false and short-answer questions. There will be three midterms and one final exam. Make-up exams will be given only for absences with valid, documented excuses. The final exam is cumulative and will cover 25% of material from Midterm 1, 2, & 3, and the last section of the course (Part 4).

Paper, students will write a paper on ecological research that has been done in a particular ecosystem. We will have a sign-up sheet for a paper topic (i.e. Ecosystem of choice) in week three, and there will be two major tasks. First is writing a paper proposal, including a literature review of 10 papers (*this is due in week seven*). Second, the final paper will be *due in week 15*. I will provide full details on proposals and paper guidelines on Moodle.

HOW TO TURN IN ASSIGNMENTS:

Field trips and paper items: You will turn in field trips and paper items either in lecture prior to due dates (see course schedule) or to my office by 5pm on the due date. *It is*

acceptable to slide assignments under my door if I am not in my office. Don't leave assignments outside my office door (always slide it under the door)!

LATE ASSIGNMENTS: 5% of the total possible points will be removed from the grade for every 24 hours late for field trip reports of paper items (e.g., 1-24 hours late = 5% deduction, 24-48 hours late = 10% deduction, etc.). Weekend days count the same as weekdays.

Exam Preparation: This is a challenging (yet fun!) course, and I encourage you to review material early and often. Exams will draw primarily from the lecture material, though material covered on field trips is also viable for inclusion on exams. Prioritization of the material should be straightforward: if I emphasize it in lecture/field trip and it is covered in your text, it is probably a major concept to know.

MENTAL AND PHYSICAL HEALTH: College can be extremely stressful, with both academic and personal challenges. Diminished mental and physical health, including significant stress, mood changes, excessive anxiety, or problems with eating or sleeping can interfere with academic performance. The source of symptoms may be strictly related to your coursework; if so, please speak with me. However, problems with personal matters can also contribute to decreased academic performance. Please remember that help is always available. Cal State LA provides resources for Counseling and Psychological Services (<https://www.calstatela.edu/mindmatters>) to support the academic success of students.



COURSE SCHEDULE - BIOL 4540 / ECOSYSTEMS OF CALIFORNIA / FALL 2016

Note that dates, topics and activities may change. Any changes to the schedule will be announced in class and posted online on the class Moodle site; it is the responsibility of the student to remain informed of any announced schedule changes.

	Week	Day/Date	Lecture Topic	Important Dates - Course notes	Book Reading
Part 1	1	M - 8/22	Introduction - California's Ecological Diversity		Ch.1
Drivers		W - 8/24	Climate and Seasonal Weather Patterns		Ch.2 + Reading 1
	2	M - 8/29	California Geology		Ch.4 + Reading 1
		W - 8/31	Ecosystems, ecological organization, soils		Ch.4 + Reading 1
	3	M - 9/5	No class (Labor Day)		
Part 2		W - 9/7	Fire and Land Use (past, present and future)		Ch.3 & 5
Biota	4	M - 9/12	Biodiversity & Climate Change		Ch.11 & 14
		W - 9/14	MIDTERM #1 EXAM (Part 1 and Part 2)		
Part 3	5	M - 9/19	Offshore Ecosystem		Ch.16 + paper
Ecosystems		W - 9/21	Shallow Rocky Reefs, Kelp Forests, and Intertidal	Field Trip #1 - (9/24, 8a-11a) Bolsa Chica (Wetlands/Coastal)	Ch.17 & 18
	6	M - 9/26	Estuaries and Coastal Wetlands		Ch.19 + paper
		W - 9/28	Coastal Beaches and Dunes	Lab report, Field Trip #1 - (5p to my office, La Kretz 312)	Ch.20 & 21
	7	M - 10/3	Coastal Sage Scrub		Ch.22 + paper
		W - 10/5	Grasslands	Paper proposal due - (5p to my office, La Kretz 312)	Ch.23 + paper
	8	M - 10/10	Chaparral & Fire Ecology		Ch.24 + paper
		W - 10/12	Oak Woodlands and Savanna	Field Trip #2 - (10/15, 8a-11a) Eaton Cny. (Chaparral/Montane)	Ch.25 + paper
	9	M - 10/17	MIDTERM #2 EXAM (Part 3)		
Part 3 (cont.)		W - 10/19	Coastal Redwood Forests and Fog		Ch.26 + paper
	10	M - 10/24	Montane Forests		Ch.27 + paper
		W - 10/26	Subalpine and Alpine Ecosystems	Lab report, Field Trip #2 - (5p to my office, La Kretz 312)	Ch.28 & 29
	11	M - 10/31	Deserts		Ch.30 + paper
		W - 11/2	Wetlands		Ch.31 + paper
	12	M - 11/7	Lakes		Ch.32 + paper
		W - 11/9	Rivers	Field Trip #3 - (11/12, 10a-1p) LA Natural History Museum	Ch.33 + paper
	13	M - 11/14	MIDTERM #3 EXAM (Part 3 continued)		

Part 4		W - 11/16	Forestry and Range		Ch.36 & 37
Managed	14	M - 11/21	Agriculture	Lab report, Field Trip #3 - (5p to my office, La Kretz 312)	
		W - 11/23	No class (Thanksgiving Holiday)		
	15	M - 11/28	Urban Ecosystems		Ch.39 + paper
		W - 11/30	Land-use Regulations and Conservation	Final paper due - (5p to my office, La Kretz 312)	Ch.40 & 41
	16	F - 12/9	FINAL EXAM (Each exam section 25%)	TIME: 11:20a-1:20p (Location: BIOS 244)	