

Principles of Conservation Biology



COURSE DESCRIPTION:

This course will examine the application of biological principles for conserving biological diversity. We will explore how biological theory can be useful and necessary to guide decisions on conserving biodiversity. In the first half of the course we will develop general principles of conservation biology. Biological diversity is defined at different hierarchical levels: the gene, species, community, and landscape. The processes that create and destroy diversity at each level will be studied. The ecology of rarity and factors affecting the distribution of biological diversity are examined. Extinction is studied from a historical and modern perspective. An assessment of threatened biological diversity of the world will be made.

In the last part of the course, we will examine tools derived from ecology and evolutionary biology to prevent the loss of biological diversity, or to restore species and ecosystems. Population viability assessment is used to evaluate risks of extinction. Biogeographic theory is used to understand the problems of habitat fragmentation and reserve design. Ecosystem and landscape management will be explored. Methods of intensive management of wild and captive populations of endangered species will be examined. Biological concepts behind ecosystem restoration will be developed.

LECTURE FORMAT:

Lectures will be presented using PowerPoint. Each lecture will be posted on bCourses prior to class. It is important to realize that these PowerPoint slides represent only an outline of the material covered. Important details that will be covered on exams will be added by the instructor verbally in each lecture and some materials not posted on Blackboard will be presented in each lecture. Thus attending class and taking detailed notes is the key to success.

TEXTBOOK:

Van Dyke, F. 2008. Conservation Biology: Foundations, Concepts, Applications. 2nd Ed., Springer.
<http://www.springerlink.com/content/978-1-4020-6890-4/contents/>. Available online on bCourses.

GRADING:

This course provides diverse opportunities for students to gain and demonstrate proficiency with the material. **Questions on the midterms and final will be drawn mostly from the lectures, but also from discussion section and required lecture readings.** All readings will be available on bCourses. Students may achieve a maximum of 1000 total points, including some extra credit points. A curve may be applied at the instructor's discretion.

Total points possible = 1,000 points. Grades as follows:

GRADE	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
%	>93%	90-93%	87-89.9%	83-86.9%	80-82.9%	77-79.9%	73-76.9%	70-72.9%	67-69.9%	63-66.9%	60-62.9%	<60%
POINTS	> 930	900-930	870-899	830-869	800-829	770-799	730-769	700-729	670-699	630-669	600-629	< 600

FINAL GRADES are based upon points accumulated during the quarter and are NOT negotiable.

EVALUATION:

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|------------------------------|-------|------------------------------|
| 1) Ten Online Quizzes | = 10% | 100 points (10 points each) |
| 2) Ten Labs/Discussions | = 20% | 200 points (20 points each) |
| 3) Annotated Bibliography | = 2% | 20 points |
| 4) One Class Presentation | = 8% | 80 points |
| 5) One Term Paper | = 12% | 120 points |
| 6) Three In Class Exercises | = 12% | 120 points (40 points each) |
| 7) Two Midterm Exams | = 20% | 200 points (100 points each) |
| 8) One Cumulative Final Exam | = 16% | 160 points |

ONLINE QUIZZES:

Quizzes posted over the weekend must be taken online via bCourses (due by following class period).

LABS/DISCUSSION SECTIONS:

You are expected to attend and participate in every lab/discussion section having read the assigned readings carefully. Each discussion section will count for 20 points of your final grade, including points for quizzes, exercises, attendance, and participation.

CLASS PRESENTATION AND TERM PAPER:

The Independent Scientific Review (ISR) you will complete as your final project for the course is designed to encourage you to apply what you learn in the classroom to a conservation issue of your choosing. Students may complete the ISR in groups (maximum of 3 coauthors) or individually. Presentations should be no longer than 8 minutes and prepared in Powerpoint. Written papers must be submitted via bCourses at which time they will be checked for plagiarism using Turnitin software. Assignments submitted late will be assessed an automatic 10% deduction per day (24 hours).

EXAMS:

Exams are administered in multiple choice format, with answers submitted on scantron forms. Exams cover lecture, topics covered in discussion section, and assigned reading materials. Each midterm lecture exam covers the material starting after the previous exam and up until the current exam. The final exam is cumulative. There will be no makeup exams without a legitimate excused absence (see below). When exams are administered, as soon as the first student is finished with the exam, no one will be admitted into the testing room.

ABSENCE POLICY:

In the event of a legitimate and documented absence from an in-class exam or section (e.g., Serious illness on the day of the exam), if possible consult with the instructor prior to your absence. Absences without a valid reason and proper documentation (e.g., a note explaining why you were not able to attend signed by a doctor) will result in a grade of zero for the missed day. In the event that you cannot attend an exam or other class period due to sudden, unforeseen circumstances (e.g., serious car accident on the way to class), contact the instructor within 24 hours of the absence to make arrangements. For example, it may be possible to make up a quiz or exam. Students with repeated unexcused absences may be dropped from the course at the discretion of the instructor.

EXTRA CREDIT:

Up to 20 points may be attained by attending Friday 12-1 pm Wildlife and Conservation Biology Seminars in 103 Mulford Hall or other seminars approved by your GSI and typing up a 1-2 page description of what you learned at each one (4 points per seminar). This is the only form of extra credit available.

POLICIES:

Special needs: Students with special needs are encouraged to contact the instructor during office hours or by e-mail **during the first two weeks of the semester** to discuss accommodations for lectures, midterms or other elements of the course.

Re-grades: To contest a grade on an exam or assignment you must submit a written explanation of why you think the grade was incorrect. Please note that the entire exam or assignment will be subject to re-evaluation and your score may go up or down. **Re-grade requests must be submitted to the instructor within one week of the work being returned.**

University Policy on Cheating or Plagiarism (UCB General Catalog)

“Achievement and proficiency in subject matter include your realization that neither is to be achieved by cheating. An instructor has the right to give you an F on a single assignment produced by cheating without determining whether you have a passing knowledge of the relevant factual material. That is an appropriate academic evaluation for a failure to understand or abide by the basic rules of academic study and inquiry. An instructor has the right to assign a final grade of F for the course if you plagiarized a paper for a portion of the course, even if you have successfully and, presumably, honestly passed the remaining portion of the course. It must be understood that any student who knowingly aids in plagiarism or other cheating, e.g. allowing another student to copy a paper of examination question, is as guilty as the cheating student.”

If you turn in someone else’s work as if it were your own, you are guilty of cheating. This includes assignments, exams, and extra credit. All suspected cases of cheating will be forwarded to the Office of Student Conduct. Starting this semester, all courses at Berkeley will use the Turnitin Originality Check software to detect plagiarism.

CLASS SCHEDULE

Day	Date	#	Lecture Topic*	Reading**	Online Quiz***	Lab/DS****	
Thurs	25-Aug	1	Introduction to Conservation Biology	Ch. 1+		No Section	
Tues	30-Aug	2	Biodiversity: Concepts and Benefits	Ch. 2+		1. Why Conserve Biodiversity?	
Thurs	1-Sep	3	Biodiversity: Definitions, Values, Levels	Ch. 3+	1		
Tues	6-Sep	4	Genetic Diversity	Ch. 6		2. Species Diversity (Meet at MVZ)	
Thurs	8-Sep	5	Species Concepts and Conservation	Ch. 4	2		
Tues	13-Sep	6	Species Diversity: Distribution and Number	Ch. 4		3. Measuring Species Diversity	
Thurs	15-Sep	7	Species Diversity: Rarity and Endemism	Ch. 4	3		
Tues	20-Sep	Exam Review – In Class Exercise 1					4. Endangered Species Act (Intro to ISR)
Thurs	22-Sep	Exam 1					
Tues	27-Sep	7	Extinction in the Past	+		5. Extinction Estimates	
Thurs	29-Sep	8	Extinction in the Present	Ch. 5+	4		
Tues	4-Oct	9	Conservation Genetics 1: Bottlenecks, inbreeding	Ch. 6		6. Stochasticity	
Thurs	6-Oct	10	Conservation Genetics 2: Effective Population Size	Ch. 7	5		
Tues	11-Oct	11	Demography of Small Populations	Ch. 8+		7. Life Tables	
Thurs	13-Oct	12	Climate Change and Biodiversity	Ch. 5+	6		
Tues	18-Oct	Exam Review – In Class Exercise 2					8. Exploring Ecosystems (UC Botanical Garden)
Thurs	20-Oct	Exam 2					
Tues	25-Oct	13	Population Viability Analysis,	Ch. 9+		9. PVA (Mulford Computer Lab)	
Thurs	27-Oct	14	Field Recovery of Endangered Species	Ch. 9	7		
Tues	1-Nov	15	Captive Breeding, Reintroduction, Restoration	Ch. 9-10		10. Reserve Design	
Thurs	3-Nov	16	Fragmentation and Metapopulations	Ch. 10	8		
Tues	8-Nov	17	Island Biogeography and the Design of Protected Areas	Ch. 10+		ISR Student Presentations I	
Thurs	10-Nov	18	Systematic Conservation Planning	Ch. 10, 13	9		
Tues	15-Nov	19	Marine Reserves and Conservation (Sarah Allen, NPS)	Ch. 11 +		ISR Student Presentations II	
Thurs	17-Nov	20	Ecosystem Management and Landscape Ecology	Ch. 10, 12	10		
Tues	22-Nov	21	Conservation in the “Real World”	Ch. 13+		No Section	
Thurs	24-Nov	Thanksgiving Holiday – No Class					
Tues	29-Nov	22	Becoming a Conservation Biologist	Ch. 14		Final Exam Review (ISR Papers Due)	
Thurs	1-Dec	Exam Review – In Class Exercise 3					
Tues	13-Dec	Final Exam 3-6pm					No Section

* Note: This is a tentative schedule subject to change.

** Assigned readings should be completed before class. Both textbook chapters and additional (+) posted on bCourses.

*** Online Quizzes will be posted on bCourses and are due before class on the days indicated.

**** Discussion Quizzes, Activities, In Class Exercises and Exams must be completed on the assigned day.

Section policies and guidelines

Grading

Discussion/lab attendance and participation will count for 200 out of the 1000 points (20% of your total grade). In order to get full credit, we expect that you attend all weekly labs, arrive on time, complete all assigned reading before class, participate willingly in the discussions, and complete all worksheets and activities (on time). We stress this point of punctuality: **we will not accept any late work without prior notice except in the case of medical or family emergencies.** Period.

Attendance

Attendance will be taken at the start of each class. You are allowed one excused absence. If you cannot attend discussion due to a medical or family emergency, UC-Berkeley-related athletic event, religious observance, graduate or medical school interview, or scientific conference attendance, you must notify at least one of us **in advance (emergencies exempt), preferably as soon as possible** if you plan on not missing points. Every absence after that will cause you to lose the full 20 points associated with that week's section. If you are unsure of a future event you are planning on attending instead of discussion, please just ask one of us before hand to be safe. You are open to attend another section's meeting the same day if you cannot attend your assigned section's, but please do not make a habit of it. You are not required to attend the midterm review session lab, but it is highly recommended. Please do not sign in for other students—we consider this cheating, which is incompatible with Berkeley's honor code and will lead to serious consequences.

Make-up and extra credit

You are allowed to make-up one section this semester. Make-up assignments will be posted on bCourses for you to complete on your own time. You will have until the following Thursday to complete the make-up assignment. For extra credit, up to 20 points are indeed available: see the course syllabus for more details!

Lab location

Labs meet in a variety of places: assigned classroom, computer room, and the Museum of Vertebrate Zoology. Look at the syllabus schedule to see where we will meet each week and check the bCourses website for announcements. We'll also remind you in lecture where we are meeting for the week, but ultimately you are responsible for knowing where to be.

Accommodations for Students with Disabilities

If you have been issued a letter of accommodation from the Disabled Students Program (DSP), please see us as soon as possible to work out the necessary arrangements. If you need an accommodation and have not yet seen a Disability Specialist at the DSP, please do so as soon as possible. If you would need any assistance in the event of an emergency evacuation of the building, the DSP recommends that you make a plan for this in advance. (Contact the DSP access specialist at 510-643-6456.)

Readings

There will be outside readings for some of the discussion sections. Assigned readings are mandatory. Please check the lab folders on bcourses for readings and bring a copy to class.

Emails

Generally, we will respond to your emails within 24 hours. Emails after 5 PM will not be answered until the next day. Emails on the weekend will not be answered until Monday. If it is a complicated question, please consider coming to office hours.

Office hours

For clarifying concepts, expanding on topics, or just to hang out and pick our brains, office hours are held just for you and we encourage you to make use of them! With both of your GSI's and Tim holding office hours every week, three hours in total, we should be able to accommodate everyone's schedule. If for some reason you cannot make any of the scheduled office hours, feel free to email us and schedule a meeting time. We'd like to get to know you as both a student and a person!

Recommendation letters

While we are happy to write letters of recommendation for you, we encourage you to get to know Tim, as a recommendation from him will be looked upon more favorably by admission boards. If necessary, we could co-write your letter with him.

The golden rule rules

We would like to make this as inviting and engaging as possible, and we expect you to have the same hopes for your classmates, so please be respectful of others' questions and opinions as if they were your own. If you have disagreements with any statements in discussion, please remember to address the ideas themselves as conflicting rather than attacking the commenter(s).



<https://xkcd.com/asmarterplanet/>