BIOL4700 – Conservation Biology

Instructor: Professor Andres (Andy) Aguilar.

Contact information: aaguil67@calstatela.edu

Text: Conservation Biology for All. Sodhi and Erlich. (recommended)
http://s3.amazonaws.com/mongabay/conservation-biology-for-all/Conservation_Biology_for_All.pdf

- Additional texts will be put on reserve in the library for you.

Course: This course will cover the highly interdisciplinary subject of Conservation Biology. Students will partake in a detailed examination of the evolutionary, ecological, managerial, policy driven, and social issues related to the conservation of ecosystems, species, and genetic diversity. Theoretical and practical aspects of biological conservation will also be presented, with special reference to case studies from California.

Pre-requisite: BIOL360 General Ecology

Course Website: The BIOL4700 website is part of the Moodle course management (moodle.calstatela.edu) system and will be automatically available to all students enrolled in the class. This website contains the course calendar, announcements, electronic copies of the lecture slides and handouts, tutorials, as well as a BIO470 email list.

Lecture Times: 10:00am-10:50am – Tues / Thurs.
Location: ASCL 344

Lab Times: 11:00am-1:30pm – Thurs.
Location: ASCL 344

Office Hours: 11:00am-1:00pm – Weds; Location – ASCL 215 or by appointment

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

- Evaluate the importance of human activities on the contemporary and historic decline of global biodiversity.
- Apply basic ecological concepts and evolutionary theory to solve real life conservation issues.
- Critically analyze arguments for and against conservation decisions, supporting and/or refuting arguments with evidence from ecological, evolutionary, social, political and economic perspectives.
- Connect the benefits of biodiversity to the maintenance of healthy ecosystems and societies and propose mechanisms to maintain current levels of biodiversity.
- Distinguish between scientific fact and opinion regarding local environmental issues and propose solutions to those issues using approachable science knowledge.

Course Materials & Handouts: In addition to the textbook and class handouts, computer and internet access will be required for this class. Computers are available at several campus locations including the main reading room in the library.

Attendance: Attendance in this class is required, this includes lecture and lab. If you are more than 5 minutes late for an exam or lab you will not be allowed to turn in that assignment or take the exam. Make up exams will be given if a serious and compelling reason can be given to Dr. Aguilar in a timely manner. See 'Missed Exam Policy' below.

Group Work: At the beginning of the quarter I will divide you up into 3-4 groups. You will remain in these groups for the duration of the quarter. These groups will be used for many different class activities (see below). While you may work in groups during lecture/lab and turn in group assignments, there are certain class components that you are expected to turn in an assignment that is a product of your own work (see below).

Course Components:
Pre/Post-Course Surveys: You will be required to do a pre and post-course survey on Moodle. These are anonymous and not graded. You will get points for simply doing them on time.

Debates: We will have two in-class debates. Your participation in these debates is required. Each group will be expected to represent and defend one particular point of view on a conservation topic. Topics will be given out one week prior to the debate and I will also provide background materials on Moodle one week prior to the debate. We will move into a 10 minute discussion of the topic (within each group). After this initial discussion, two individuals from each group will be required to present their point of view to the class. We will then move into a constructive and hopefully lively debate on these topics, with members of the class asking questions to the presenters. Your debate participation grade will be based on your participation in all facets of the debates.

Case Studies: In many ways conservation biology is a series of case studies. We will go through five different case studies throughout the quarter. Each will require you to review lecture material and readings prior to attending class. The case studies are different formats, most requiring group work. You will be required to present, debate, discuss, analyze from different perspectives for each case study. There may also be some associated questions/assignments for each case study.

Activities: When we are not doing case studies we will be going through specific activities (exercises, worksheets, problem sets) during lecture. Again this will require that you come prepared (i.e. review lecture and reading materials before class). Each activity will have an associated assignment.

Labs: Your lab section time and location can be found on your registration materials. *Students are expected to attend and be on time for each lab as they are mandatory*. A portion of the course grade is based on exercises, presentations, and participation in the lab sections. Students will be considered late if they have not arrived within 5 minutes of the start of lab and will not be given participation points for that class or allowed to participate in that week's lab.

We have three scheduled field trips for this semester and attendance is mandatory. On December 1 we will have final presentations for your group project.

Midterms and Finals: There will be one midterm and one final for this class. The final will be cumulative. All exams must be taken in pen if you wish to have them re-graded.

Class Project: This is the main source of points for this class. A more detailed description of what is involved for this assignment will be made available via Moodle. Briefly, each group will chose (or assigned) an independent research project. Every member of the group will be expected to participate in the following:

- Development of a project hypotheses
- Provide me with periodic updates
- Final written project
- Final oral presentation

Individually you will be expected to contribute to the following:

- Group self-assessment
- Blog about your research project

Group project will be centered around one of the following research topics:

1. Evaluation of the soil seed bank at North East Los Angeles (NELA) open spaces
2. Determining insect biodiversity at NELA open spaces
3. Determining pollinator biodiversity at NELA open spaces
4. Age structure of California walnuts NELA open spaces
5. The social attitudes of the public towards open spaces in NELA
6. The socio-economic benefits of open spaces in NELA
7. Community structure of fish in the Los Angeles River
8. Patterns of open space use in NELA

Course Points: Grades will be based upon points received for the write-ups, class participation, term paper and the two midterm exams and the final exam.

Course Component	Points	Proportion of Course points
Survey	10	0.025
Participation	20	0.05
Survey Lab	20	0.05
Sampling Lab	15	0.0375
Life Table Lab	15	0.0375
PVA Lab	15	0.0375
Landscape Genetics Lab	15	0.0375
Species Area Lab	15	0.0375
IBM Activity	15	0.0375
Case Study: Wetlands	10	0.025
Case Study: Matrix	10	0.025
Case Study: Florida Panther	10	0.025
Assisted Migration Debate	15	0.0375
De-extinction Debate	15	0.0375
Class Project	50	0.125
Midterm I	50	0.125
Midterm II	50	0.125
Final	50	0.125
Total Points	400	

Letter Grades: The overall grades in BIO470 will be based on a scale that leads to the following distributions of grades. A > 93%; A- = 90-92.9%; B+ = 87-89.9%; B = 83-86.9%; B- = 80-82.9%; C+ = 77-79.9%; C = 72-76.9%; C- = 70-71.9%; D+ = 67-69.9%; D = 63-66.9%; D- = 60-62.9%; F < 60%.

Student Services: The **Americans with Disabilities Act (ADA)** is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. The university provides reasonable accommodations to students with documented physical and learning disabilities. The Office for Students with Disabilities (OSD), located in Student Affairs Room 115 coordinates all documentation of disabilities (323-343-3140) http://www.calstatela.edu/univ/osd/.

Missed Exams: Make-up exams will not be offered for any mid-term exams or the final. Students who miss a mid-term will receive a zero for the entire test unless they provide documentation for one of two acceptable excuses:

-Incapacitating illness or accident--requires a note from student's physician (not a family member) or from a professional health service provider.
-Death or serious illness of an immediate family member—requires proper documentation..

Late assignments: Assignments will **NOT** be accepted late.

Academic Integrity: The central rule of academic honesty is that you must do your own work. Some of the activities in BIOL470 involve group activities and you are welcome to discuss any of the materials in the text, lectures, or on-line materials with the instructors and other students, **but you must work independently on all of the following:**

- Lab write-ups
- Homework
- Proposal
- The midterm and final exams

Independent work means that each student must generate their own answers to all written questions.

Students are expected to read and abide by the University's Academic Honesty Policy (http://www.calstatela.edu/academic/senate/handbook/). Students who violate this policy will be subject to disciplinary action and may receive a failing grade for a single violation.

Classroom conduct: All cellphones, pagers and other electronic communication devices must be turned off during lecture and lab. During exams you will not be allowed to leave the classroom for any reason. You are not allowed to take notes on a computer or tablet.

Lecture and Lab Schedule. Chapters in CBA are given in parentheses.

Week	Date	Lecture	Lab
1	23-Aug	Course intro, What is conservation biology; History of conservation biology (1)	
	25-Aug	What is Biodiversity? (2)	Survey Lab
2	30-Aug	Biodiversity Above the Species (3)	
	1-Sep	Distribution of Biodiversity (3)	Sampling Lab
3	6-Sep	Island Biogeography Activity	
	8-Sep	Field trip	Field trip
4	13-Sep	Extinctions: geological and contemporary time scales (10)	
	15-Sep	Conservation Ethics & Values (14)	Field trip
5	20-Sep	Midterm	
	22-Sep	Field trip	Field trip
6	27-Sep	Habitat Degradation and Loss I (4)	
	29-Sep	Habitat Degradation and Loss II (4)	Case Study: Wetlands & Data sorting/analysis
7	4-Oct	Habitat Fragmentation I (5)	
	6-Oct	Habitat Fragmentation II (5)	Data sorting/analysis
8	11-Oct	Case Study: Matrix	
	13-Oct	Overexploitation (8)	Life Table Lab
9	18-Oct	Invasive Species (7)	
	20-Oct	Climate Change (6)	Assisted Migration Debate & Data sorting/analysis
10	25-Oct	Midterm	
	27-Oct	Small Populations	PVA Lab
11	1-Nov	Conservation Genetics I	
	3-Nov	Conservation Genetics II	Case Study: Florida

			Panther
12	8-Nov	Conservation Genetics III	
	10-Nov	Re-introductions/Zoos	Landscape Genetics Lab
13	15-Nov	De-extinction Debate	
	17-Nov	Protected Areas	Species Area Lab & Data sorting/analysis
14	22-Nov	Restoration	
	24-Nov	Thanksgiving	No Lab
15	29-Nov	Conservation Law	
	1-Dec	What now?	Presentations
	8-Dec	9:10 – 11:10 Final Exam	