NRM2303 – Principles of Conservation Biology
Course Syllabus - Spring 2020

Instructor

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Teaching Assistant

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Course Description

Introductory course on the fundamental issues in the discipline of conservation biology including conservation genetics, habitat fragmentation, natural resources sustainability, and island biogeography.

Course Objectives

Students will be introduced to the general concepts of conservation biology. Specifically, upon course completion students will understand:

- The discipline of conservation biology including its past, present, and future challenges.
- The meaning and importance of biodiversity including species diversity, ecosystem diversity, and genetic diversity.
- The threats to biodiversity including mass extinctions and global change, habitat fragmentation and loss, overexploitation, and invasive exotics.
- Methods of maintaining biodiversity through management and protection of individuals, populations, and ecosystems.
- The societal, economic, and political factors influencing conservation.

Student Learning Objectives for the B.S. in Natural Resource Management, required by the Southern Association of Colleges and Schools:

The Southern Association of Colleges and Schools requires, for the B.S. in Natural Resource Management, that the graduating student will demonstrate that he/she is able to:

1. Identify species of wildland plants and wildlife common to the western United States and describe their natural history.
2. Demonstrate knowledge of the elements of an ecosystem.
3. Communicate about natural resources and conservation both verbally and in writing.
4. Conduct range and wildlife inventories in a team setting.
5. Apply knowledge about elements of an ecosystem into an appropriate conservation management plan.

Class Meeting Time/Place

Time: Monday, Wednesday, Friday 1:00 pm - 1:50 pm
Place: RAS 129

Text and Supplies

1. *Essentials of Conservation Biology* by Richard Primack (6th Edition, Sinuaer and Associates). (***Required***)

Course Outline

1. Major Issues that Define Conservation Biology
    a. What is Conservation Biology?
    b. What is Biodiversity?
    c. Where is the World's Biodiversity Found?
2. Threats to Biodiversity
    a. Extinction
    b. Habitat Destruction, Fragmentation, Degradation
    c. Global Climate Change
    d. Overexploitation, Invasive Species, Disease
3. Conservation at the Population and Species Levels
    a. Applied Population Biology
    b. Problems Specific to Small Populations
4. Practical Applications
    a. Establishing Protected Areas
    b. Managing Protected Areas
    c. Conservation Outside Protected Areas
    d. Agenda for the Future of Conservation Biology
    e. Other topics as time allows

Course Grade

In-Class Quizzes & Participation	20%
Conservation Research Project & Presentation	30%
Fieldwork and Report	10%
Midterm Exam	15%
Final Exam	25%

Overall Grade Assignment
<60 = F, 60-69 = D, 70-79 = C, 80-89 =B, 90-100 = A.

In-Class Quizzes & Participation Grade (20%)
You are required to read sections from the book at home prior to most classes. Most lectures will include in-class assignments, discussions, or quizzes. Attendance is crucial for the successful completion of this course and is ultimately the responsibility of the student. In class activities cannot be made up unless your absence from class is excused (bring a note from your doctor, coach, club advisor, etc. explaining your absence).

Conservation Research Project / Presentation Grade (30%)
Throughout the semester, you will work within a small group to complete a conservation research project on an endangered species of your choice. The project is broken down into three parts, due periodically during the semester, that relate to the information we covered most recently in class. Each part will build on the previous ones and together they will be combined into a research paper due at the end of the semester. You will also present your findings to the rest of the class at the end of the semester. Guidelines for each part of the project and for the final presentation will be supplied during the semester.

Fieldwork and Report Grade (10%)
There will be at least two days that we will spend doing fieldwork. The days that we do fieldwork there will be no class at the regularly scheduled time/place – instead that time will be spent outside. To allow sufficient time for fieldwork, you may be required to attend outside regularly scheduled class hours. You will be required to write a research report with introduction, methods, results, and discussion. More details will be given in class.

Midterm (15%) and Final (25%) Exams
Two in-class examinations will be given during the semester. Exams will consist of a variety of questions, including multiple-choice, fill-in-the-blank, short-answer, and essay. No make-up exams will be given for an unexcused absence. You must notify me of an excused absence from an exam PRIOR to the start day and time of the exam you will miss; i.e. arrangements for make-up exams must be made BEFORE the exam is given.

Late assignments
Late assignments will be accepted at the discretion of the instructor, with a 10% penalty for each day that it is late (i.e. 10% for 0-24 hours late, 20% for 24-48 hours late, etc.) Late assignments are not accepted after seven days. Extended due dates may be allowed due to college-related conflicts ONLY WITH my approval PRIOR to the due date. In case of emergencies, arrangements for completing assignments should be made immediately upon return to SRSU.

Class Organization and Policy

I expect a high level of engagement in lecture to enhance everyone's learning. This includes interacting with the instructor and other students, asking questions during class, completing outside class assignments and readings, and being prepared to participate in class discussions.

Roll will be taken in each class meeting. The SRSU catalog states "The Instructor will drop a student from a course when the student has a total of nine absences. An absence is defined as nonattendance to 50 minutes of class." Any time class is missed, for any reason, it will be recorded as an absence. College-related events that conflict with class will not be considered an absence ONLY WITH my prior approval.

All lectures and assignments will be posted in Blackboard. If you miss class, it is advised you obtain any hand-taken notes from a classmate.

The use of personal laptops, cell phones, iPads, and other electronic devices can create distractions for learning, both for yourself and others. However, such devices can also be great tools to aid learning. Therefore, using electronic devices for class purposes (e.g. taking notes, working out problems, searching the internet) is allowed in silent mode. If you choose to use electronic devices in class, do so in a professional manner that does not impede others' learning. **The use of internet-capable devices (e.g. smartphones and smartwatches) is not allowed for exams.**

Academic Integrity

On all work submitted for credit by students at the university, the following pledge is either required or implied: "**On my honor, I have neither given nor received unauthorized aid in doing this assignment.**"

Unauthorized aid includes copying, sharing, or obtaining information from an unauthorized source, attempting to take credit for the intellectual work of another person, falsifying information, and giving or receiving information about a test, quiz, or assignment to other students. Any student involved in academic dishonesty will receive no credit (0) for work done and/or may be penalized in accordance with published University Rules.

General Expectations

We will cover a lot of material in this course. To maximize learning in this course, we should have some expectations of each other:

I expect from you:

- ATTEND lecture; be on time as a courtesy to others.
- ASK whenever something is unclear. It is likely that others have the same question.
- PARTICIPATE in lecture.
- READ the required sections from the text. If you come to me with a question and it is clear that you haven't read the book or the lecture notes, I will direct you to the reading first.
- BE HONEST in all your work.

What you can expect from me:

- GIVE 100% effort in teaching you the best I can.
- Make myself AVAILABLE to help outside of class.
- ANSWER all questions to the best of my knowledge, and if I don't know the answer I will find out.
- Be FAIR in all grading.
- Provide you with timely, constructive FEEDBACK regarding your work.

Reasonable Accommodations

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the Student's responsibility to initiate a request. Please contact Ms. Rebecca Greathouse Wren, M.Ed., LPC-S, Director/Counselor, Accessibility Services Coordinator, Ferguson Hall (Suite 112) at 432.837.8203; mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Students should then contact the instructor as soon as possible to initiate the recommended accommodations.

Tentative Course Schedule

Week	Date	Lecture Topic	Reading Due Before Class	# Pages	Other Due	In-Class Activity
1	1/13	Course Overview & Syllabus	N/A	0		
	1/15	What is Conservation Biology? The New Science of Conservation Biology	Chapter 1 pp 3-10	8		
	1/17	What is Conservation Biology? The Origins of Conservation Biology	Chapter 1 pp 10-18	9		
2	1/20	MLK HOLIDAY - NO CLASS	N/A	-		
	1/22	What is Conservation Biology? Origins (concluded); A New Science is Born	Chapter 1 pp 18-21	4		
	1/24	What is Biodiversity? Species Diversity	Chapter 2 pp 23-34	12		Ch1 Quiz
3	1/27	What is Biodiversity? Species Diversity (concluded); Genetic Diversity	Chapter 2 pp 34-36	3		
	1/29	What is Biodiversity? Ecosystem Diversity; Semester Research Project Overview	Chapter 2 pp 36-50	**15**		
	1/31	Where is the World's Biodiversity Found? Ecosytem Diversity (concluded); Diverse Ecosystems & Patterns of Diversity	Chapter 3 pp 53-58	6		Ch2 Quiz
4	2/3	Where is the World's Biodiversity Found? How Many Species Exist Worldwide?	Chapter 3 pp 58-62, 66-67, 70	5		
	2/5	Communication: Scientific Writing Essentials	Catch-up on reading	-		Ch3 Quiz
	2/7	Extinction: Past Mass Extinctions, Current Human-Caused Extinction, Background Extinction Rates	Chapter 7 pp 135-146	12	Project Groups Formed	
5	2/10	Extinction: Island Extinctions, Island Biogeography Model, Local Extinctions	Chapter 7 pp 146-154	9		
	2/12	Vulnerability to Extinction: Rare & Endemic Spp, Cat's of Vulnerability. IUCN, US, & TX Cons. Cat's, Debate O/V	Chapter 8 pp 157-173	17		
	2/14	Communication: Debate	Catch-up on reading	-		Debate
6	2/17	Habitat: Human Population Growth/Impact	Chapter 9 pp 175-189	15		Ch7&8 Quiz
	2/19	Habitat: Habitat Destruction; Fragmentation	Chapter 9 pp 189-197	9		
	2/21	Habitat: Degradation and Pollution	Chapter 9 pp 197-205	9	Project Report Part I	
7	2/24	Habitat: Global Climate Change	Chapter 9 pp 205-214	10		
	2/26	Other Threats: Overexploitation	Chapter 10 pp 217-227	11		Ch9 Quiz
	2/28	Other Threats: Invasive Species	Chapter 10 pp 227-238	12		
8	3/2	Other Threats: Disease; Applied Population Biology: Methods for Studying Populations	Chapter 10 pp 238-243	6		
	3/4	Communication: Presentation Design	Catch-up on reading	-		
	3/6	**MIDTERM EXAM**	Catch-up on reading	-	Study for Midterm	EXAM
9	3/9	SPRING BREAK	N/A	-		
	3/11	SPRING BREAK	N/A	-		
	3/13	SPRING BREAK	N/A	-		
10	3/16	Applied Population Biology: Population Viability Analysis	Chapter 12 pp 275-285	11		
	3/18	Applied Population Biology: Population Viability Analysis; Metapopulations	Chapter 12 pp 285-292, 295	9		Midterm Exam Results
	3/20	CMR Lincoln-Petersen --- Field Work Overview ---	Catch-up on reading	-	Project Report Parts I-II	Population Estimation
11	3/23	Problems of Small Populations: Concepts	Chapter 11 pp 249-266	**18**		Ch12 Quiz
	3/25	Problems of Small Populations: Other Factors & Extinction Vortices	Chapter 11 pp 266-271	6		
	3/27	--- Field Work Day 1 ---	Catch-up on reading	-		Field Work Day 1
12	3/30	Establishing New Populations	Chapter 13 pp 297-311	14		Ch11 Quiz
	4/1	Ex-Situ Conservation Strategies	Chapter 14 pp 315-317, 326-329, 339	7		
	4/3	--- Field Work Day 2 ---	Catch-up on reading	-		Field Work Day 2
13	4/6	Establishing Protected Areas: Types and Classification & Existing Protected Areas	Chapter 15 pp 343-350	8		Ch13&14 Quiz
	4/8	Establishing Protected Areas: Creating New Protected Areas & Selecting Areas	Chapter 15 pp 350-362, 366 summary	12		
	4/10	HOLIDAY: GOOD FRIDAY	N/A	-		
14	4/13	Designing Networks of Protected Areas	Chapter 16 369-377, 387-388	10	Final Field Reports	
	4/15	Conservation Outside Protected Areas: Value of Unprotected Habitat & Conservation in Urban & Agricultural Areas	Chapter 18 pp 419-428	10		Ch15&16 Quiz
	4/17	Conservation Outside Protected Areas: Multiple Use Habitat & Ecosystem Management & Case Studies	Chapter 18 pp 428-439	12		
15	4/20	Communication: Public Speaking Essentials	Ch. 19 pp 441-460	20	Final Project Reports	
	4/22	Restoration Ecology; An Agenda for the Future	Ch. 22 pp 523-536	14		
	4/24	Communication: Project Presentations (3)	Catch-up on reading	-	Final Project Powerpoints	Project Presentations
16	4/27	Communication: Project Presentations (3)	Catch-up on reading	-		Project Presentations
	4/29	Communication: Project Presentations (3)	Catch-up on reading	-		Project Presentations
	5/1	**FINAL EXAM, 12:30-2:30**	Study for Final Exam		Study for Midterm	EXAM