FORMAN CHRISTIAN COLLEGE

(A Chartered University)

Spring Semester 2023

Department of Environmental Sciences

COURSE INFORMATION:

ENVR 405: Conservation Biology 03 Credits (3-0)
Prerequisite: None

Lecture Time: Tuesday and Thursday: 9:30 - 10:45
Lecture Room: S-424

COURSE INSTRUCTOR:

Dr. Sohaib Aslam
Assistant Professor
Office: **S-037**, Armacost Science Building
Office Hours: Tuesday, Wednesday and Thursday: 14:00 - 15:30
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TEXT BOOKS:

1. Essentials of Conservation Biology, 4th Ed. Primack, R.B., Sinauer Associates, Inc. Publ. Sunderland. 2006.
2. Conservation Biology for All, Sodhi, N.S. and Ehrlich, P.R., Oxford University Press. 2010.
3. Biogeography, Cox, C.B. and Morre, P.D., Kings College, London. 2000.
4. Illustrated Handbook of Biodiversity of Pakistan, Mirza, Z.B., Saad Printers, Rawalpindi. 1998.

All supporting material of this course will be available via the Moodle at:

http://tmoodle.fccollege.edu.pk/moodle/

COURSE DESCRIPTION:

The course gives a brief overview of the principles of conservation biology both nationally and internationally. We will be looking at different forms of biodiversity, threats to biodiversity as well as different strategies for its conservation. This will be combined with at least one field excursion.

OBJECTIVES:

- To introduce students to the field of conservation biology
- To familiarize them with different forms of biodiversity, threats to biodiversity and its conservation
- To enable them to make conservation decisions of local, national and international concern.

LEARNING OUTCOMES:

By the end of the course, the students will be able to:

- Understand the basic principles underlying the conservation and management of wildlife.
- Develop connection between sources and resources for conservation and sustainability of environment.
- Understand and apply laws and regulations that influence how natural resources are used and protected.
- Analyze, organize and present information on a local wildlife species issue in the news, journals and scientific magazines

COURSE CONTENTS AND WEEKLY BREAKUP

Week	Week Begins	Contents	Assessments
1	Feb. 13, 2023	**Introduction to Course:** Course outline ; Course policies & Grading criteria Introduction to Conservation Biology What is Conservation Biology? Brief history and scope of conservation biology	
2	Feb. 20, 2023	**Biological (Bio)diversity** Levels of studying biodiversity: Species, Genetic and Ecosystem diversity Types of Biodiversity (alpha & beta diversity)	**Assignment 1**
3	Feb. 27, 2023	**Values of Biodiversity:** Philosophical, ecological, social and ethical values of biodiversity Economic valuation of biodiversity; Tragedy of Commons Externalities and market failure Plant, animal and microbial resources of world and Pakistan	
4	March 6, 2023	Biodiversity hotspots; Ecoregions **Threats to biodiversity:** Habitat fragmentation and landscape change	**QUIZ 1**

		Invasive species; Pollution; Over-harvesting; Population growth Climate Change Fire & Biodiversity	
5	March 13, 2023	**Extinction:** Endangered/threatened species IUCN listing of endangered species Problems of small populations: Reduced genetic variability Inbreeding, Outbreeding Demographic fluctuations, Environmental fluctuations Extinction Vortex	**Assignment 2**
6	March 20, 2023	Viable population size; Effective population size **Monitoring populations:** total counts, census, surveys, population viability analysis	
7	March 27, 2023	Role of natural history and population biology Methods of collecting information about natural history of species **Conservation of biodiversity:** Needs and approaches Conservation strategies: In-situ and ex-situ conservation	
8	April 3, 2023	Keeping species in zoos, botanical gardens, aquariums, seed banks etc. Drawbacks of ex-situ (human-captive) conservation	**Mid-Exam**
9	April 17, 2023	**Conservation** at species, population, community and ecosystem level National and international laws and regulations International agreements related to conservation	**Assignment 3**
10	May 1, 2023	**Protected areas Biosphere reserves** IUCN categories of protected areas Role of protected areas and ecological corridors in conservation Legal protection of species, habitats	
11	May 8, 2023	**Protected areas** Creating and managing new protected areas: Priorities for new protected areas Establishing a network of protected areas National parks in Pakistan	**Presentations**
12	May 15, 2023	Eco-tourism, Conservation and livelihood Forest and Rangeland management	**QUIZ 2**
13	May 22, 2023	National Conservation Strategy of Pakistan Role of traditional knowledge in conservation planning and control	**Assignment 4**
14	May 29, 2023	Restoration Ecology An agenda for Future	**Presentations**

		Project Presentations	
15	June 5, 2023	General Discussion, Revision Question/Answer Sessions **Project Presentations**	
16	June 12, 2023	Revision and feedback	**Final-Exam**

Course Requirement:

Course content will be covered from the text; however the students will be encouraged and guided for securing additional information from other sources.

Course Policies:

Attendance: Students must attend all class meetings to assure the best possible grades; failure to do so will drastically affect the grade. **If a student fails to attend 75% of the classes, he/she will not be allowed to appear in the Final Examination.** Excused absence on account of family emergency and/or participation in university activities will not count towards class attendance.

Exams: There will be two lecture exams during the term. Mid Term Exam will be of one-hour duration and the Final Exam will be of two-hour duration. Mid Term Exam will constitute 20% and the Final Exam will constitute 30% of the grade.

Quizzes and Assignments: There will be three quizzes and four assignments apart from, midterm and final exams. The quizzes and assignment will carry 15% and 20% weight-age of the grades, respectively. In addition, each student will have to prepare and conduct presentation on allocated projects.

Missed Exam: Students must take all the exams. If you do not appear in the exam you will be awarded zero point and your grade will be drastically affected.

Cheating and Plagiarism: There will be no tolerance for cheating/plagiarism. Any student caught cheating on the exam will be awarded zero point and may be dropped from the course. Detailed policy of classroom misconduct, cheating and plagiarism given in the Student Handbook will be strictly followed. Students are responsible for these directions given about dishonesty and plagiarism.

Course evaluation:

Weight-age and Grading:

ACTIVITY	WEIGHT AGE
Midterm exam	25%
Final exam	30%
Quizzes	10%
Assignment	20%
Project Presentation	10%
Attendance	5%
Total	**100%**

The grading system for the course is as follows:

GRADES	QUALITY POINTS	NUMERICAL VALUE	MEANING
A	**4.00**	**93-100%**	**Superior**
A-	**3.70**	**90-92%**	
B+	**3.30**	**87-89%**	
B	**3.00**	**83-86%**	**Good**
B-	**2.70**	**80-82%**	
C+	**2.30**	**77-79%**	
C	**2.00**	**73-76%**	**Satisfactory**
C-	**1.70**	**70-72%**	
D+	**1.30**	**67-69%**	
D	**1.00**	**60-66%**	**Passing**