Institute of Zoology,
Faculty of Life Sciences
University of the Punjab, Lahore
Course Outline

Programme	BS Zoology	**Course Code**	**ZOOL-208**	**Credit Hours**	1
Course Title	Lab. Ecology				

Course Introduction

Ecology is the study of the interactions between organisms and their environment. This course provides a background in the fundamental principles of ecological science, including concepts of population and community ecology, biodiversity, and sustainability. Students will acquire a thorough understanding of the scientific field of ecology, how ecologists conduct research, and the importance of general ecological knowledge. Moreover, this course will help to develop an understanding of how scientific methods are used to construct ecological knowledge. The course will also explore some of today's major ecological challenges, and the important research that is being done to address these concerns.

Learning Outcomes

1. To gain an understanding and deep insight to basic ecological principles.
2. To make understanding of solid foundation of the fundamental ecology topics.
3. To gain an understanding of the questions that an ecologist study, the methods they use, and the questions that remain unanswered

Course Content	**Assignments/Readings**
Week 1	Demonstration of Methods and analysis of population dynamics
Week 2	Quadrate method; Determining frequency of different species
Week 3	Quadrate method; Determining density of species in habitat.
Week 4	Population studies mark and recapture method, statistical analysis of field data.
Week 5	Population studies mark and recapture method, statistical analysis of field data.
Week 6	Demonstration and guidelines for Field Sampling of Aquatic Biota
Week 7	Visit to selected aquatic water body for Field Sampling of Aquatic Biota
Week 8	Identification and study of collected aquatic biota
Week 9	Demonstration of Food Chain studies through analysis of gut content
Week 10	Lab practice of Food Chain studies through analysis of gut content
Week 11	Demonstration for Study of Inter-specific association
Week 12	Collection of samples to study of Inter-specific association.
Week 13	Field visits for study of selected terrestrial habitat
Week 14	Writing notes for Field visits for study of selected terrestrial habitat.
Week 15	Demonstration for Experimental design and approaches in ecological research.
Week 16	Writing research Project

Textbooks and Reading Material

1. Textbooks.

1. Henderson, P. A. (2003). Practical methods in ecology. John Wiley & Sons.
2. Clements, F. E. (1905). *Research methods in ecology*. University Publishing Company.
3. Weiner, J. (1995). On the practice of ecology. *Journal of Ecology*, *83*(1), 153-158.
4. Southwood, T. R. E., & Henderson, P. A. (2009). *Ecological methods*. John Wiley & Sons.

2. Suggested Research Articles

1. Boitani, L., & Fuller, T. K. (2000). *Research techniques in animal ecology: controversies and consequences*. Columbia University Press.
2. Turner, A. M., & Trexler, J. C. (1997). Sampling aquatic invertebrates from marshes: evaluating the options. *Journal of the North American Benthological Society*, *16*(3), 694-709.

Teaching Learning Strategies
Teaching will be a combination of class lectures, lab work, field visits, class discussions, and group work. Short videos/films will be shown on occasion.
Assignments: Types and Number with Calendar
The sessional work will be a combination of written assignments, class quizzes, projects, presentation,]and class participation/attendance.
Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.