

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



Programme	BS Zoology	Course Code	ZOOL-319	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					
<div><div>1.</div><div>To gain an understanding and deep insight to basic ecological principles.</div><div>2.</div><div>To make understanding of solid foundation of the fundamental ecology topics.</div><div>3.</div><div>To gain an understanding of the questions that an ecologist study, the methods they use, and the questions that remain unanswered</div></div>					
Course Content				Assignments/Readings	
Week 1	Demonstration of Methods and analysis of population dynamics				
Week 2	Quadrante method; Determining frequency of different species				
Week 3	Quadrante 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					
<div><div>1.</div><div>Textbooks.</div><div>1.</div><div>Henderson, P. A. (2003). Practical methods in ecology. John Wiley &amp; Sons.</div><div>2.</div><div>Clements, F. E. (1905). <i>Research methods in ecology</i>. University Publishing Company.</div><div>3.</div><div>Weiner, J. (1995). On the practice of ecology. <i>Journal of Ecology</i>, 83(1), 153-158.</div><div>4.</div><div>Southwood, T. R. E., &amp; Henderson, P. A. (2009). <i>Ecological methods</i>. John Wiley &amp; Sons.</div><div>2.</div><div>Suggested Research Articles</div><div>1.</div><div>Boitani, L., &amp; Fuller, T. K. (2000). <i>Research techniques in animal ecology: controversies and consequences</i>. Columbia University Press.</div><div>2.</div><div>Turner, A. M., &amp; Trexler, J. C. (1997). Sampling aquatic invertebrates from marshes: evaluating the options. <i>Journal of the North American Benthological Society</i>, 16(3), 694-709.</div></div>					

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.