

University of the Punjab, Lahore
Course Outline



Program		Course Code	GNS-101
Course Title	ECOLOGY	Credit Hours:03	
Course Introduction			
Ecology is the study of how organisms interact with each other and their environment at the population, community, and ecosystem levels. The goal of this course is to familiarize you with ecological theory and its applications.			
Learning Outcomes			
On the completion of the course, the students will be able: <ol style="list-style-type: none"> 1. To gain an understanding of the broad biological significance of ecological theory. 2. To gain an understanding of the questions that ecologists study, the methods they use, and the questions that remain unanswered. 3. To develop your ability to apply quantitative skills to analyze and interpret ecological data. 			
Course Contents			
Introduction, branches of ecology, levels of ecological organization, species, population, community and ecosystem, role of light, soil, water, temperature, topography and air as ecological factors, biotic factors, Concepts of Limiting factors, habitat and niche. Populations; Population distribution and abundance, population dynamics, distribution limits, carrying capacity and environmental resistance Community: organization, various concepts of community, community dynamics. Ecosystem: structure and function, energy flow and material cycling within ecosystem. Biomes of the world, characteristics of urban, agricultural and industrial ecosystems. Terrestrial and aquatic ecosystems in Pakistan, their distribution and potential threats to these ecosystems, plant geography and animal distribution. Ecological production: primary and secondary productivity, productivity of different ecosystems, Systems ecology, ecological modeling, landscape ecology, landscape changes and their importance			
Textbooks and Reading Material			
<ol style="list-style-type: none"> 1. <i>Ecology (principles and applications)</i>. Chapman, J.L and Reiss, M J. 1st Ed. Cambridge University Press, UK, 1992. 2. <i>Fundamentals of Ecology</i>. Odum, E P. and Baret, G.W. 5th Ed. Thomson Brooks/Cole, 2004. 3. <i>Ecology (concepts and applications.)</i> Moles, M C J 1st ed. WCB/McGraw-Hill. New York, 1999 4. <i>Fundamentals of Ecology</i>. Dash, M. C. Tata McGraw-Hill. New Delhi. 2001 5. <i>Biogeography (an ecological and evolutionary approach)</i>.Cox, C. B. and More, J. 6th Ed. King's College London, UK. 2000. 			
Note:			

1. It is preferable to use latest available editions of books. Mention the publisher & year of publication.
2. The References/ bibliography may be in accordance with the typing manual of the concerned faculty/subject. Preferably follow APA 7th Edition publication manual.

Assessment

Sr. No.	Elements		Details
1.	Midterm Assessment		
2.	Formative Assessment		
3.	Final Assessment		