

**TIMETABLE ARRANGEMENT:** Annual; 2nd Semester

**CREDITS:** 6

**COURSE TEACHER(S):** TBC

**ASSESSMENT:**

EXAMINATION 50 %	COURSEWORK 50 %
• 2 hours	• 1 individual essay

**OBJECTIVES:**

This course explores the relationship between spatial patterns and processes in an ecological context through an understanding of landscape mosaics and landscape components and how these are affected by natural and human environmental drivers of change. Landscape ecology offers new approaches to address fundamental research questions in applied geography and natural resource management where ecosystem processes are considered at larger spatial and temporal scales. A “systems perspective” is proposed that shows how human and environmental systems are coupled and sustained through feedback mechanisms, and the important properties that are significant for their landscape resilience and sustainability.

**COURSE SYNOPSIS:**

The intent of the course is to explore the principles of landscape ecology as a framework for landscape-scale research, analysis and management. The course will provide the theoretical background for understanding and managing a variety of landscape types across different geographical regions. Students are introduced to the distribution patterns of wild animals and plants and to the factors that determine these patterns. In this course, emphasis is on aspects of biogeography, biodiversity and implications for conservation issues. Particular attention will be given to the importance of plants and animals within the context of their ecosystems or biomes and to the relevance of physical, biotic and human factors in shaping ecosystems. Emphasis will also be placed on the ecological and cultural contribution of plants and animals to sustainable human living on the planet.

**LECTURE TOPICS:**

- History and definition of landscape ecology and its relationship to geography
- Causes of landscape patterns (abiotic, biotic, human land use and disturbance)
- Theory and basic principles in landscape ecology (i.e., island biogeography, meta-populations, hierarchical systems, source-sink, etc.)
- Data for studying landscapes and measuring landscape patterns (landscape pattern analysis)
- Landscape disturbance dynamics and effects of landscape patterns on organisms, populations, communities and ecosystems processes
- Applied landscape ecology: Urban planning and urban forestry

**RECOMMENDED READING LIST:**

- Turner, M.G., & Gardner, R.H., (2015). Landscape Ecology in Theory and Practice. Springer, the Netherlands.
- Forman, R.T.T. (1995). Land Mosaics: The Ecology of Landscapes and Regions. Cambridge University Press.

	Course Learning Outcomes (CLOs) After completing this course, students would be able to:	Alignment with Programme Learning Outcomes (PLOs) <sup>®</sup>						Course Assessment Methods
		1	2	3	4	5	6	
1	obtain knowledge of the basic concepts, methods, and applications in landscape ecology	✓	✓			✓		Essay & exam
2	examine and understand the ways in which spatial patterns and processes operate in an ecological context	✓		✓				Essay & exam
3	understand the relevance of landscape ecology to human society using a “systems perspective”				✓	✓		Essay & exam
4	apply the concepts, models, and techniques of landscape ecology in natural resource management				✓	✓	✓	Essay & exam
5	learn and become familiar with the quantitative techniques used to assess landscape patterns and processes		✓	✓			✓	Essay & exam

### **\*Geography Major Programme Learning Outcomes (PLOs)**

In order to meet the demands and challenges in this dynamic and ever-changing world, the Department has designed a series of well-structured and contemporary courses to cater to the different interests of students. Its courses are designed to align with the University's educational aims which hope to nurture future generations not only with a critical and intellectual mindset, but also with a passion to contribute to society in general.

After completing the programme, Geography Major students should be able to:

**PLO1** critically analyse the geographical aspects of the relationship between people and the natural environment;

**PLO2** demonstrate and develop an understanding of how these relationships have changed with space and over time;

**PLO3** identify, collect and utilize primary and secondary data to investigate and analyse the issues and problems facing people, places and society;

**PLO4** integrate, evaluate and communicate information from a variety of geographical and other sources;

**PLO5** participate in promoting social, economic and environmental sustainability at the local, regional and global scales; and

**PLO6** effectively apply a range of transferable skills in academic, professional and social settings.