GEOG2096 Human Impacts on Ecosystems

TIMETABLE ARRANGEMENT: Annual; 1st Semester **CREDITS:** 6

COURSE TEACHER(S): Professor Zhenci XU

ASSESSMENT:

EXAMINATION 60 %	COURSEWORK 40 %
• A two-hour exam	• Final report

OBJECTIVES:
The course attempts to understand the structure and functions of natural ecosystems, evaluates their modifications by various kinds of human activities, and discusses the alternatives to destructive and non-sustainable use of ecosystems.

COURSE SYNOPSIS:
The course introduces students to the basic concepts of biogeography by studying the structure and functioning of natural ecosystems and their extensive modifications by human activities. It provides a comprehensive foundation on basic ecological concepts, including structure and organization of ecosystems, energy flow and nutrient cycling, evolution of the biosphere and ecosystem succession and changes. Some special issues of ecosystem management of relevance to nature conservation and protection are then expounded, including species interactions, biotic dispersal and migration, fire as a natural-cum-anthropic factor, continental drift and Pleistocene Glaciation, domestication and agricultural origin, the pervasive ecological impacts of modern agriculture and urbanization, and the application of island biogeography theory to habitat and species conservation. This is a course of general appeal to students with different backgrounds and dispositions.

LECTURE TOPICS:
- Organization, energy flow and nutrient cycling in ecosystems
- Evolution of the biosphere, ecosystem changes through time
- Continental drift and Pleistocene Glaciation
- Species interactions, organism dispersal and migration
- Fire as a factor of biotic distribution
- Domestication and the origin of agriculture

RECOMMENDED READING LIST:

- Huggett, R.J. (2004) Fundamentals of Biogeography, 2nd edition. London: Routledge.
- McDonald, G.M. (2003) Biogeography: Space, Time, and Life. New York: John Wiley.

	Course Learning Outcomes (CLOs) After completing this course, students would be able to:	**Alignment with Programme** Learning Outcomes (PLOs)*						**Course Assessment Methods**
		1	2	3	4	5	6	
1	Acquire synoptic understanding of the world's life-supporting ecosystems	✔						Final report & exam paper
2	Analyze spatial and temporal variations in ecosystem composition, factors and processes		✔					Final report & exam paper
3	Understand nature of ecosystem modifications due to pervasive human impacts		✔					Exam paper
4	Learn integrated assessment of the multiple ecosystem components and linkages			✔				Exam paper
5	Apply knowledge to countryside interpretation in a local terrestrial ecosystem			✔				Final report & exam paper
6	Write an independent and critical report on information collected in the field				✔			Final report

*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.**