

TIMETABLE ARRANGEMENT: Annual; 1st Semester

CREDITS: 6

COURSE TEACHER: Professor Jimmy Li

ASSESSMENT:

EXAMINATION 40 %	COURSEWORK 60 %
• A closed-book final exam	• Problem sets • Term paper

OBJECTIVES:

To provide an introduction to major concepts of earth surface landforms and their associated internal and external formation processes.

COURSE SYNOPSIS:

This course is a core element in physical environmental study. The course provides a systematic description and analysis of earth surface landscapes and the processes that create them. Given that the Earth's land surface is located at the interface of the Earth's lithosphere, atmosphere, hydrosphere and biosphere, this study is closely related to a wide range of disciplines of natural environments. Topics discuss the landforms and their processes in different environments, including slope, fluvial, coastal, glacial and arid locations. The landforms created by tectonic movement and the techniques in geomorphology are also studied.

LECTURE TOPICS:

- Global tectonics and Earth surface relief
- Volcanicity and landforms
- Weathering
- The processes and forms in slope, fluvial, coastal, karst, aeolian and glacial, and periglacial environments
- Application of geomorphology
- Techniques and field investigation

RECOMMENDED READING LIST:

- Ritter, D.F., Kochel, C., Miller, J.R. 2011. Process Geomorphology. Waveland Press Easterbrook, D. J. 1999.
- Surface Processes and Landforms. 1999. Upper Saddle River, N.J.: Prentice Hall
- Summerfield, M.A. 1991. Global Geomorphology. Longman Scientific & Technical
- Montgomery DR, Balco G, Willett SD, 2001. Climate, tectonics, and the morphology of the Andes, *Geology*, 29(7): 579–582
- Aleotti P, Chowdhury R, 1999. Landslide hazard assessment: summary review and new perspectives, *Bull Eng Geol Env* 58:21–44
- Gariano SL, Guzzetti F, 2016. Landslides in a changing climate, *Earth-Science Reviews*, 162: 227–252
- Montgomery DR, Buffington JM, 1997. Channel-reach morphology in mountain drainage basins, *GSA Bulletin*, 109(5): 596–611
- Wang G, Li J et al. 2017. Aeolian sediment tracers: Approaches, applications, and challenges. *Earth-Science Reviews*, DOI: 10.1016/j.earscirev.2017.05.001
- Scherler D, Bookhagen B, Strecker MR, 2011. Spatially variable response of Himalayan glaciers to climate change affected by debris cover. *Nature Geoscience*, DOI: 10.1038/NGEO1068.
- Way JW, Christian RR etc. 2008. Consequences of climate change on the ecogeomorphology of coastal wetlands. *Estuaries and Coasts*, 31:477–491, DOI 10.1007/s12237-008-9047-6

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	Explain the processes by which gravity, water, wind, ice and other geographic agents modify and shape landscapes	✓			✓		✓	Problem sets, term paper & exam
2	Describe different types of landforms and recognize examples of these landforms in photos, on maps, and on the landscape		✓	✓	✓			Problem sets, term paper & exam
3	Calculate stresses and forces working on the landscape, explain the meaning of your calculated values, and relate these values to landscape characteristics	✓				✓	✓	Problem sets & exam
4	Understand the primary scientific methods, including quantitative methods, in geomorphology and be able to communicate your findings effectively				✓		✓	Term paper & 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.