

Course Syllabus

1. **Name of Curriculum** Bachelor of Science Program in Environment
Faculty/Institute/College Mahidol University International College, Faculty of Science, Faculty of Environment and Resource Studies, Mahidol University
2. **Course Code** ICEN 432 **Course Title** Global Geomorphology
3. **Number of Credits** 4 (**Lecture/Lab**) (4-0)
4. **Prerequisite** None
5. **Type of Course** Elective
6. **Trimester / Academic Year**
Second / 2005

7. Course Description

The form of landsurface and the process which create it. The study of submarine feature and with the advent of planetary exploration must now incorporate the landscapes of the major solid bodies of the solar system. Relationship between landforms and the processes currently acting on them. Considering past events for explaining many landforms.

8. Course Objectives

Students engage in a range of academic and applied activities, such as research into the processes responsible for the genesis of modern and ancient landform, geologic responses to environmental change, and analysis of natural hazards.

9. Course Outline

| Week | Topic | | | Instructor | |
|------|--|------|-----|------------|----------------|
| | Lecture | Hour | Lab | | |
| 1 | PART I : INTRODUCTION 1. Approaches to geomorphology PART II : ENDIGENIC PROCESSES AND LANDFORMS 2. Global morphology and tectonics | 4 | - | 4 | Ajarn Piyakarn |
| 2 | 3. Landforms and tectonics of plate margins 4. Landforms and tectonics of plate interiors | 4 | - | 4 | Ajarn Prakorn |
| 3 | 5. Landforms associated with igneous activity MAP AND MODEL QUIZZES | 4 | - | 4 | Ajarn Prakorn |
| 4 | PART III : EXOGENIC PROCESS AND LANDFORMS 6. Weathering and associated landforms | 4 | - | 4 | Ajarn Piyakarn |
| 5 | 7. Slope processes and forms MIDTERM EXAM | 4 | - | 4 | Ajarn Piyakarn |
| 6 | 8. Fluvial process and landforms | 4 | - | 4 | Ajarn Prakorn |
| 7 | 9. Aeolian process and landforms | 4 | - | 4 | Ajarn Prakorn |

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|----|--|-----------|---|---|----------------|
| | 10. Glacial process and landforms | | | | |
| 8 | 11. Periglacial process and landforms 12. Coastal process and landforms | 4 | - | 4 | Ajarn Prakorn |
| 9 | 13. Climate, Climate change and landforms development MAP AND MODEL QUIZZES | 4 | - | 4 | Ajarn Piyakarn |
| 10 | 14. Rate of uplift and denudation 15. Tectonics and drainage development 16. Sea level change 17. Long term landscape development | 4 | - | 4 | Ajarn Piyakarn |
| 11 | PART IV : EXTRATERRESTRIAL LANDFORM 18. Planetary geomorphology | 4 | - | 4 | Ajarn Piyakarn |
| 12 | FINAL EXAM | - | - | - | Ajarn Piyakarn |
| | Total | 44 | | | |

10. Teaching Method

1. Lecture
2. Exercises
3. Map and model quizzes
4. Self-Study

11. Teaching Media

1. Texts and Teaching Materials
2. Transparencies
3. Power Point Presentation
4. Maps and models

12. Course Achievement

Course final grade 80-100 % = A, 70-79 % = B, 60-69 % = C, 50-59 % = D
< 50 = F

13. Course Evaluation

- | | |
|--------------------------|------|
| 1. Exercises | 10 % |
| 2. Map and model quizzes | 20 % |
| 3. Midterm Examination | 40% |
| 4. Final Examination | 30% |

14. References

1. Anderson, M.G. (1988) Modelling Geomorphological Systems. Wiley, Chicester and New York.
2. Cogley J.G. (1984) Continental margins and extent and number of continents. Review of Geophysics and Space Physic.
3. Dickinson, W.R. (1976) Sedimentary basins developed during evolution of Mesozoic-Cenozoic arc-trench system in western North America. Canadian Journal of Earth Sciences 13, 1268-1287.
4. Drever, J.I. (1958) The Chemistry of Weathering. Reidel, Dordrecht.
5. Garner and H. Scoging (1983) Mega-Geomorphology. Clarendon Press, oxford and Oxford University Press, New York.
6. Gerrard, A.J. (1988) Rocks and Landforms. Unwin Hyman, London and Boston.

7. Jenniness, J.N. (1985) Karst Geomorphology. Blackwell, Oxford and New York.
8. Morgan, R.P.C. (1986) Soil Erosion and Conservation. Longman, London and Wiley, New York.
9. Ollier, C.D. (1981) Tectonics and Landforms. Longman, London and New York.
10. Parsons, A.J.(1988) Hillslope Forms. Rovatledge, London and New York.
11. White, W.B. (1988) Geomorphology and Hydrology of Karst Terrains. Oxford University Press, New York and oxford.
12. www.erode.evsc.virginia.edu
13. www.geogweb.berkeley.edu/GeoImages
14. www.geomorph.org
15. www.sciencedirect.com/science/journal

15. Instructors

Ajarn Piyakarn Teartisup

Ajarn Prakorn Suwanich

16 Course Coordinator

Ajarn Piyakarn Teartisup