



MANGALORE UNIVERSITY
MSc Geography

HARD CORE COURSE: GYH 401 Advanced Geomorphology:

Course Learning Outcomes:

- CO1. Demonstrate knowledge of the historical evolution and concepts of geomorphology.
- CO2. Analyze the significance of spatial and temporal scales in geomorphology.
- CO3. Analyze critically the theories and models in the real world with different perspectives.
- CO4. Analyze human interventions and effects in geomorphologic processes.
- CO5. Apply conceptual and theoretical measures to analyze geomorphic processes.
- CO6. Apply basic techniques from global to regional level to identify different landforms

Course Content:

Unit 1: Geomorphology: Definition and its fundamental concepts. Interior of the earth: structure and convectional currents. Theory of isostasy: Views of Pratt and Airy. Geological time scale.

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Unit 2: Theory of Plate tectonics and sea floor spreading, Wegener's theory of continental drift. Earth movements: Organic, epeirogenic movements and resultant landforms: Folds and faults and their types. Volcanoes: reasons, types of eruptions, significance, volcanic activity, products, landforms, geographical distribution and major volcanic eruptions occurred.

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Unit 3: Earthquakes: Causes, measuring earthquake, landforms, geographical distribution and key earthquakes so far. Tsunamis: Causes, consequences and major tsunamis taken places.

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Unit 4: Process of weathering and mass wasting, landforms produced by – Drainage system and drainage patterns. Glaciers, wind, underground water and sea waves: process of these and land forms produced. Critical study of the concept of cycle of erosion – W.M. Davis and W. Penck – Recent trends in geomorphology.

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Essential Readings

1. Anheer, F., (1996), 'Introduction to Geomorphology', Arnold, London, Sydney, Auckland.
2. Bloom, A. L. (2002), 'Geomorphology: A Systematic Analysis of Late Cenozoic Landforms', Pearson Education Pvt. Ltd., and Singapore.
3. Chattopadhyay, S. 2017. Geomorphological Field Guide Book on Laterites and Backwaters of Kerala (Edited by AmalKar). Indian Institute of Geomorphologists, Allahabad.
4. Chorley R. J, Schumm, S.A. and Sugden D.E. (1984): Geomorphology, Methuen, London.
5. Cooke, R. U. and Doornkamp, J.C., (1974). Geomorphology in Environmental
Douglas, J. and Spencer, I. (1985): Environmental Change and Tropical Geomorphology, George Allen and Unwin, London.
6. Garner, H.F. (1974): Origin of Landscapes A synthesis in Geomorphology, Oxford University Press, New Delhi.
7. Hart, M.G. (1986): Geomorphology: Pure and Applied, George Allen and Unwin, London.
8. John R. Hills., 1977. "Applied Geomorphology" Elsevier Scientific publishing Company, New York.
9. Nair, K. K.(2007) Quaternary geology and geomorphology of coastal plains of Kerala, Geological Survey of India.

10. Prasannakumar, V. (2007) Geomorphology International Centre for Kerala Studies, University of Kerala.
11. Sharma, H. S. (ed.) (1991): Indian Geomorphology, Concept, New Delhi.
12. Spark B.W. (1972) Geomorphology, Longman, New York.
13. Strahler A.H. and Strahler, A.N. (1998) Introducing Physical Geography, John Wiley and Sons, Inc. New York.
14. Thornbury, W.D. (1960) Principles of Geomorphology”, John Wiley and Sons, New York.

