

## **DS 1208: Geomorphology**

L	T	PD	Total Pds	Univ. Exam		Sessnl. Marks	Total Marks	Credits
				Hrs.	Marks			
3	1	-	4	3	70	30	100	4

### **Unit I**

Definition and scope of geomorphology; Fundamental concepts in geomorphology; Endogenetic processes: volcanism and tectonism; Exogenetic processes: weathering, Mass-wasting and erosion; geomorphic agents.

### **Unit II**

Fluvial processes and landforms: valleys and valley forming processes - associated features; Alluvium – active and relict alluvium; Floodplain morphology; Types of streams - Genetic classification of streams; Alluvial fans and deltas Shore Zone processes and landforms: shore line, shore zone and coast; Wind waves, tides, littoral currents, storm surges and tsunamis; Erosional and depositional landforms

### **Unit III**

Glacial processes and landforms: ice and glaciers; types of glaciers; glacial motion; Regimen of glaciers – nourishment and wastage of glaciers; active, passive and dead glaciers; erosional and depositional landforms. Eolian processes and landforms; dominance of wind processes in arid and semi-arid regions; erosional and depositional landforms

### **Unit IV**

Scope and significance of soil studies; soil and regolith; soil forming factors – geological, climatic, topographical, biological and time factors; Soil components – mineral matter, organic matter, soil-water and soil-air; Soil Properties – colour, texture, structure, acidity and alkalinity; soil profile; Pedogenic regimes – laterisation, gleisation, podzologisation, calcification and salinisation; soil classifications – zonal system, and Seventh approximation system.

### **Unit V**

Applied geomorphology: landform interpretation for groundwater explorations; mineral exploration – surface expressions of ore bodies; weathering residues, placer deposits; applications in engineering projects: route selection – highways, canals, transmission lines; site selections – dam sites, industries; townships

### **Text Books**

1. Geomorphology by A.L. Bloom, Waveland Pr.Inc. 2004
2. Principles of Geomorphology by W.D. Thornbury, Wiley Eastern, 1984
3. Landscape Systems by T.L. McKnight, Prentice-Hall International, 1987
4. Fundamentals of Geomorphology by R. Huggett, Routledge, 2007

