

## U.G. 1<sup>st</sup> Semester

### Paper: GPH101C (Core) Geomorphology

Credits: 5 = 3+1+1 (48 Lectures)

Unit	Content	No. of lectures
1	Meaning and scope, history of development of geomorphology, Catastrophism, Uniformitarianism, Cycle of erosion, evolution of landforms in Davis's normal cycle of erosion	12
2	Structure and composition of earth's interior, earth's crust, rocks and minerals	8
3	Concept of Isostasy and Eustasy.	6
4	Processes of landform developments; endogenetic processes, plate tectonic theory; earthquakes, volcanoes and resultant landforms; folds, faults; mountain building theory-Kober's and Holmes'	16
5	Exogenetic processes- weathering, mass wasting	6
6	<b>Practical:</b> (1 credit) Profile drawing - serial, projected, composite, superimposed; identification of landforms from topographical maps, slope-computation of slope between points from topographical map in terms of gradient, angle and per cent; Slope analysis- smith's method	

#### Reading List:

1. Ahmed, E. 1985: **Geomorphology**, Kalyani Publishers, New Delhi
2. Bloom A.E., 2003: **Geomorphology: A Systematic Analysis of Late Cenozoic Landforms**, Prentice-Hall of India, New Delhi
3. Bridges E. M., 1990: **World Geomorphology**, Cambridge University Press, Cambridge
4. Dayal, P. 1996: **A Textbook of Geomorphology**, Shukla Book Depot, Patna
5. Monkhouse, F. J. and Wilkinson H.R. 1973: **Maps and Diagrams**, Methuen, London
6. Monkhouse, F. J., 2009: **Principles of Physical Geography**, Platinum Publishers, Kolkata
7. Singh, R. L. and Singh, R. P. B. 1999: **Elements of Practical Geography**, Kalyani Publishers
8. Singh, Savindra, 2007: **Geomorphology**, PrayagPustakBhawan, Allahabad
9. Strahler, A.N., 1960: **Physical Geography**, John Wiley & Sons, New York, London
10. Thornburry, W.D., 1968: **Principles of Geomorphology**, Wiley Eastern Reprint 1984
11. Waugh, D. 2002: **An Introduction to Physical Geography**, Nelson Thornes, U.K.
12. Wooldridge W. S. and Morgan R.S. 1959: **An Outline of Geomorphology: The Physical Basis of Geography**, Longman

Paper: GPH102C (Core)

Climatology

Credits: 5=3+1+1 (48 Lectures)

Unit	Contents	No. of lectures
1	Nature and scope of climatology and its importance in geography, Meteorology and climatology.	4
2	Structure, composition and characteristics of earth's atmosphere; insolation, heat budget, horizontal and vertical distribution of temperature, temperature inversion.	10
3	Weather and climate: elements of weather; factors influencing climate; precipitation : processes and types	6
4	Atmospheric pressure and global wind system; vertical and horizontal variation in air pressure, pressure gradient; Factors affecting wind motion, general circulation.	10
5	Air mass: characteristics, origin, classification and modification; Front; characteristics, frontogenesis and classification	8
6	Climatic disturbances: Cyclones and anticyclones	6
7	Monsoon and its mechanism	4
8	<b>Practical:</b> (1 credit) Study of weather condition depicted by Indian weather maps and prediction of weather condition; construction and interpretation of climograph, hythergraph and rainfall variability map; isopleth mapping of distribution of rainfall and temperature; handling of weather instruments – thermometer, anemometer, rain gauge, barometer	

Reading List:

- Barry R. G. and Carleton A. M., 2001: **Synoptic and Dynamic Climatology**, Routledge, UK.
- Barry R. G. and Corley R. J., 1998: **Atmosphere, Weather and Climate**, Routledge, New York.
- Batten L. J., 1979: **Fundamentals of Meteorology**, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
- Boucher K., 1975: **Global Climates**, Halstead Press, New York.
- Critchfield H. J., 1987: **General Climatology**, Prentice-Hall of India, New Delhi.
- Griffith, J.F., 1966: **Applied Climatology**, Oxford university Press
- Lal, D.S., 2002: **Climatology**, Chaitanya Publishing House, Allahabad
- Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: **The Atmosphere: An Introduction to Meteorology**, Prentice-Hall, Englewood Cliffs, New Jersey.
- Oliver J. E. and Hidore J. J., 2002: **Climatology: An Atmospheric Science**, Pearson Education, New Delhi.
- Singh, S. 2007: **Climatology**, SharadaPustakBhawan, Allahabad.
- Thompson D. R. and Perry A. (eds.), 1997: **Applied Climatology: Principles and Practice**, Routledge, USA and Canada.
- Trewartha G. T. and Horne L. H., 1980: **An Introduction to Climate**, McGraw-Hill.

**Paper: GPH103M (Modular General Elective)**

**Geography: Ideas in Sketch**

**Credits: 4 = 3+1+0 (48 Lectures)**

<b>Unit</b>	<b>Content</b>	<b>No. of lectures</b>
1	Geography- meaning and branches; latitude, longitude, time, seasons, equinox and solstices	7
2	Different orders of landforms - types of 2 <sup>nd</sup> order landforms, 3 <sup>rd</sup> order landforms; important mountain ranges, rivers, river valleys of the world - their locations and characteristics	10
3	Oceans, seas, bays, lagoons, lakes, coral reefs and islands – types and examples	8
4	Earthquakes and volcanoes – types and examples	5
5	Important mountains, rivers, plateaus of N.E India; national parks and sanctuaries of Assam and North-East India	7
6	An introduction to the tribes of N.E India	4
7	Planetary circulation of wind, local winds-types and examples; different types of precipitation; difference between weather and climate, elements and factors of climate	7

**Reading List:**

- Monkhouse F.J. (2009): *Principles of Physical Geography*, Platinum publishers, Kolkata
- Das Gupta A. & Kapoor A.N. (1981): *Principles of Physical Geography*, S. Chand and Company Ltd., New Delhi
- Ahmad E. (1994): *Physical Geography*, Kalyani Publishers
- Waugh D (2002): *Geography: an integral Approach*, Nelson Thrones