

B.Sc. Honours in Geography
Semester- I
Course Name: Geomorphology
Course Code: BSCHGEOC101

Course Type: Core (Theoretical)	Course Details: CC-1		L-T-P: 5 - 1 - 0		
Credit: 6	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		..	10	..	40

Course Learning Outcomes:

(After the completion of course, the students will have ability to):

- 1. Understand the functioning of Landform systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms*
- 2. Distinguish between the mechanisms that control these processes*
- 3. Assess the roles of structure, stage and time in shaping the landforms, interpret geological maps and apply the knowledge in geographical research.*

Course Content:

1. Geomorphology: Definition, Nature and Scope; Fundamental concepts and System Approach in Geomorphology; Earth: Internal Structure, Earth Movements: Isostasy (Airy and Pratt)
2. Plate Tectonics: Processes and Associated Landforms. Concept of Neo-tectonics, Earthquakes and Volcanoes.
3. Concept of Exogenic and Endogenic Forces, Origin and types of Folds and Faults: Landform Development on Folded and Faulted Structure
4. Geomorphic Processes: Weathering, Mass Wasting, Cyclic (Davis and Penck) and Non-cyclic Concept (Hack) of Landform Development.
5. Landforms associated with (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.
6. Applied Geomorphology and Environment with reference to Ground Water, Resource Exploration and Engineering Projects.

Continuous Assessment: Assignment on Structure and landforms

References/ Suggested Readings

- Billings, M.P. 1971. Structural Geology, Pearson.

- Bloom, A. L., (2003): *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, Prentice-Hall of India, New Delhi.
- Das Gupta, A and Kapoor, A.N., (2001) *Principles of Physical Geography*, S.C. Chand & Company Ltd. New Delhi.
- Dayal, P., (1996) A Text book of Geomorphology. Shukla Book Depot, Patna.
- Frisch, W., Meschede, M., Blakey, R.C. 2011. *Plate Tectonics: Continental Drift and Mountain Building*,
- Goudie, A.S. (Ed) 2004. *Encyclopaedia of Geomorphology*, vol. 1 & 2, Routledge.
- Gregory, K.J., Lewin, J. 2014. *The Basics of Geomorphology: Key Concepts*, Sage.
- Harvey, A. 2012. *Introducing Geomorphology: A Guide to Landforms and Processes*, Dunedin, Academic Press.
- Huggett, R.J. (2007) *Fundamentals of Geomorphology*, Routledge, New York.
- Kale, V. S. and Gupta A., (2001): *Introduction to Geomorphology*, Orient Longman, Hyderabad.
- Kearey, P., Klepeis, K.A., Vine, F.J. 2011. *Global Tectonics*, 3rd ed, Wiley-India.
- Khullar, D.R., (2012)*Physical Geography*, Kalyani Publishers, New Delhi.
- Knighton, A.D. 1984. *Fluvial Forms and Processes*, Edward Arnold.
- Mal, Suraj, Singh, R.B. and Huggel, Christian (2018): *Climate Change, Extreme Events and Disaster Risk Reduction*, Springer, Switzerland, pages 309.
- McCullagh, P. 1978. *Modern Concepts in Geomorphology*, Oxford University Press.
- Selby, M.J., (2005): *Earth's Changing Surface*, Indian Edition, OUP
- Singh, S (2009):*BhautikBhugolkaSwaroop(Hindi)*, PrayagPustak,Allahabad.
- Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to Physical Geology*, 4th Edition, John Wiley and Sons. Springer.
- Strahler, A. 2016. *Introducing Physical Geography*, 6th ed, Wiley.
- Strahler, A. H. and Strahler, A N., (2001):*Modern Physical Geography (4/E)*, John Wiley and Sons, Inc., New York.
- Summerfield, M.J. 2003. *Global Geomorphology: An Introduction to the Study of landforms*, Longman.
- Thornbury, W.D. 1969. *Principles of Geomorphology*, 2nd ed, Wiley-India / CBS.
- Tikka, R N (1989): *BhautikBhugolkaSwaroop(Hindi)*, Kedarnath Ram Nath, Meerut.

Semester- I
Course Name: Cartographic Techniques

Course Code: BSCHGEOC102

Course Type: Core (Practical)	Course Details: CC-2		L-T-P: 0 - 0 - 12		
Credit: 6	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		30	..	20	..

Course Learning Outcomes:

(After the completion of course, the students will have ability to):

1. *Understand the importance of scale in geography.*
2. *Read and prepare maps.*
3. *Comprehend locational and spatial aspects of the earth surface.*
4. *Use and importance of maps for regional development and decision making.*

Course Content:

1. Basic concept of Cartography; Concept and Types of Scales; Graphical Construction of Linear, Comparative linear, Diagonal and Vernier Scales.
2. Map Projections – Classification, Properties and Uses; Merits and Demerits of Polar Zenithal, Stereographic, Bonne’s and Mercator’s Projections. Basic Concept of UTM projection.
3. Topographical Maps (Open and Defence Series maps, RF 1:50,000) - Interpretation (Plateau/ plain region) and Slope Analysis (Wentworth’s method).
4. Topographic Profiles-Introduction and Plotting of Cross and Longitudinal Profiles along a River.
5. Interpretation of Weather Maps (at least one of Pre-Monsoon, Monsoon and Post-Monsoon Seasons)

Practical Record:

A Project File / Practical Note book in pencil comprising one exercise *each*, on scale, map projection, profile, interpretation of topographic sheet.

References/ Suggested Readings

- Anson, R., and Ormelling F. J., (1994): International Cartographic Association: Basic Cartographic, Vol.Pregmen Press.

- Gupta, K.K. and Tyagi V.C., (1992): Working with Map, Survey of India, DST, New Delhi.
- Kennedy, M., Kopp, S. 2001. Understanding Map Projections, Esri Press.
- Khan, Zulfequar Ahmad., (1998): Text book of Practical Geography, Concept Publishing Company, New Delhi.
- Kimerling, A.J., Buckley, A.R., Muehrcke, P.C., Muehrcke, J.O. 2011. Map Use: Reading, Analysis, Interpretation, 7th ed, Esri Press.
- Kraak, M.J., (2010):Cartography: Visualization of Geospatial Data (3rd edition), Pearson Education Ltd., London.
- Misra, R.P.,(2014): Fundamentals of Cartography (Second Revised and Enlarged Edition), Concept Publishing, New Delhi.
- Monkhouse, F. J. and Wilkinson, H. R., (1973): Maps and Diagrams, Methuen, London.
- Pearson II, F. 1990. Map Projections: Theory and Applications 2nd ed, CRC Press.
- Rhind, D. W. and Taylor D. R. F., (eds.) (1989): Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
- Robinson, A. H., (2009): Elements of Cartography (6th Edition), John Wiley and Sons, New York.
- Robinson, A.H., Morrison, J.L., Phillip, C.M., Kimerling, A.J., Guphill, S.C. 1995. Elements of Cartography, 6th ed, Wiley.
- Sarkar, A., (2015):Practical geography: A systematic approach, Orient Black Swan Private Ltd., New Delhi
- Sharma, J. P., (2010): PrayogicBhugol(Hindi), Rastogi Publishers, Meerut.
- Singh, Gopal., (1998): Map Work and Practical Geography (4th Edition), Vikas Publishing House, Ahmedabad.
- Singh, R.L. & Dutta, P.K., (2012):PrayogatmakBhugol(Hindi), Central Book Depot, Allahabad
- Singh, R.L. and Singh R.P.B., (1999): Elements of Practical Geography, Kalyani Publishers, New Delhi.
- Singh,R.L.,& Singh, Rana. P.B.,(1991):PrayogtmakBhugolkeMoolTatva(Hindi), Kalyani Publishers, New Delhi.
- Steers, J.A. (1970):An Introduction to the Study of Map Projections, University of London Press, London.