

DISCIPLINE SPECIFIC COURSES (CC): HONOURS & MULTIDISCIPLINARY**SEMESTERS – 1/3 (for H & MD)****GEOG-H-CC01/MD-CC01-1/3-Th – Physical Geography – 75 Marks / 3 Credits****Unit I: Cartography**

1. Concept and applications of scales and projections. Components and classification of maps [5]

Unit II: Geotectonics

2. Seismic waves and internal structure of the earth [3]

Unit III: Geomorphology

3. Classification of weathering and agents of erosion [5]
4. Fluvial processes and landforms [5]

Unit IV: Climatology

5. Nature, composition, and layering of the atmosphere [4]
6. Circulation in the atmosphere: Planetary winds, jet streams, and index cycle [5]

Unit V: Soil Geography

7. Factors of soil formation [4]
8. Evolution of an ideal soil profile [4]

Unit VI: Biogeography

9. Plant adaptation and distribution in relation to water availability [5]

Unit VII: Geography of Hazards

10. Nature and classification of hazards and disasters in Indian context [5]

References

- Ahrens, C.D. 2023. *Essentials of Meteorology: An Invitation to the Atmosphere*. 9th ed, Cengage Learning.
- Barry, R.G, Chorley R.J. 2009. *Atmosphere Weather and Climate*. 9th ed, Routledge.
- Coch, N.K. 1994. *Geohazards: Natural and Human*, Pearson College.
- Critchfield, H. J. 1983. *General Climatology*. Prentice Hall India Ltd (2010 Reprint).
- Franzmeier, D.P., McFee, W.W., Graveel, J.G., Kohnke, H. 2016. *Soil Science Simplified*, 5th ed, Waveland Press.
- Hyndman, D., Hyndman, D. 2016. *Natural Hazards & Disasters*, 5th ed, Cengage Learning.
- Huggett, R., Shuttleworth, E., 2022. *Fundamentals of Geomorphology*, 5th ed, Routledge.
- Kale, V.S., Gupta, A. 2001. *Introduction to Geomorphology*, Orient Blackswan.
- Kapur, A. 2010. *Vulnerable India: A Geographical Study of Disasters*, Sage.
- Lal, D.S. 2012. *Climatology*. Sharda Pustak Bhawan.
- Lomolino, M.V., Riddle, B.R., Whittaker, R.J. 2016. *Biogeography*, 5th ed, Oxford University Press.
- Sarkar, A. 2015. *Practical Geography: A Systematic Approach*, 3rd ed, Orient Blackswan.

- Sharma, P.D. 2011. Ecology and Environment, Rastogi Publications.
- Singer, M., Munns, D.N. 2005. Soils: An Introduction, 6th ed, Pearson.
- Singh, R.L., Singh, R.P.B. 2008. Elements of Practical Geography, Kalyani Publishers.
- Smith, K. 2013. Environmental Hazards: Assessing Risk and Reducing Disaster, 6th ed, Routledge.
- Strahler, A. 2013. Introducing Physical Geography, 6th ed., Wiley.
- Weil, R.R., Brady, N.C. 2022. The Nature and Properties of Soils, 15th ed, Pearson Education.

GEOG-H-CC01/MD-CC01-1/3-P – Physical Geography Lab – 25 Marks / 1 Credit

An A3- or tabloid-size laboratory notebook, comprising class assignments of the following is to be prepared and submitted. The exercises are to be drawn in pencil with photocopied representation of source materials where necessary. All texts are to be handwritten.

1. Graphical construction of scales: Plain, comparative, diagonal, and vernier [10]
2. Delineation of drainage basins on Survey of India 1:50k topographical maps. Determining stream ordering (Strahler), and bifurcation ratio in a drainage basin (c. 5' x 5') [10]
3. Identification of drainage and channel patterns from Survey of India 1:50k topographical maps [6]
4. Construction and interpretation of wind rose diagram [4]
5. Viva voce based on laboratory notebook (5 Marks)

References

- Monkhouse F.J., Wilkinson H.R. 1971. Maps and Diagrams, their compilation and construction, 3rd ed (2017 reprint), Alphaneumera.
- Basu, P. 2021. Advanced Practical Geography — a Laboratory Manual, 4 ed, Books and Allied.
- Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan.
- Singh, R.L., Singh, R.P.B. 2008. Elements of Practical Geography, Kalyani Publishers.
- Vaidyanadhan, R., Subbarao, K.V. 2014. Landforms of India from Topomaps and Images, Geological Society of India.

SEMESTERS – 2 / 4 (for H & MD)**GEOG-H-CC02/MD-CC02-2/4-Th – Human Geography – 75 Marks / 3 Credits****Unit I: Scope and Approaches**

1. Elements of human geography: Nature, scope, and recent trends [4]
2. Human geography schools of thought: Resource, locational, landscape, environment [6]

Unit II: Social Geography

3. Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, and industrial society [6]
4. Human adaptation to the environment: Chenchu, Toda, and Gond [6]
5. Evolution and characteristics of post-industrial urban societies [2]

Unit III: Population Geography

6. Demographic transition. Significance of demographic dividend [3]
7. Distribution, density, and growth of population in India [4]

Unit IV: Settlement Geography

8. Characteristics of settlements: Urban and rural [4]
9. Site, situation, types, and patterns of rural settlements [6]

Unit V: Urban Geography

10. Size-class classification of urban settlements after Census of India [4]

References

- Ashok, A., Lakshmaiah, P.V. 2018. Tribes of India, vol. 1 &2, Telugu Akademi.
- Bose, N.K. 2020. Tribal Life In India, 5th ed (updated by Tripathi, C.B.), National Book Trust.
- Chandna R.C. 2022. Geography of Population, Part 1: Concepts, Determinants and World Patterns, Kalyani Publishers.
- Dorrel, D., Henderson, P. 2018. Introduction to Human Geography. University of Georgia Press.
- Fouberg, E.H., Nash, A.B., Murphy, A.B., de Blij, H., 2015. Human Geography: People, Place, and Culture, 11th ed, Wiley.
- Ghosh S. 1998. An Introduction to Settlement Geography, Sangam Books Ltd.
- Gregory, D., Johnston, R., Pratt, G., Watts, K., Whatmore, S. (Eds) 2009. The Dictionary of Human Geography, 5th ed, Wiley-Blackwell.
- Knox, P.L., Marston, S.A. 2014. Human Geography, Places and Regions in Global Context, 6th ed, Pearson Education.
- Majumdar, P.K. 2013. India's Demography: Changing Demographic Scenario in India, Rawat Publications.
- Mercier, M., Norton, W. 2019. Human Geography, 10th ed, Oxford University Press.
- Paul, C., Crang, P., Goodwine, M.G. 2014, Introducing Human Geographies, 3rd ed, Routledge.
- Rubenstein J.M., 2018, Contemporary Human Geography, 4th ed, Pearson.
- Short, R.J. 2017. Human Geography: A Short Introduction, 2nd ed, Oxford University Press.
- Sing, R.Y. 2009, A Geography of Settlements, Rawat Publications.

GEOG-H-CC02/MD-CC02-2/4-P – Human Geography Lab – 25 Marks / 1 Credit

An A3- or tabloid-size laboratory notebook, comprising class assignments of the following is to be prepared and submitted. Census of India data are to be used where applicable. The exercises are to be drawn in pencil with photocopied representation of source materials where necessary. All texts are to be handwritten.

1. Growth rate of population: Arithmetic growth comparing two decadal datasets [6]
2. Representation and interpretation of population density of Indian states or West Bengal districts by choropleth method [8]
3. Identification of types of settlements according to sites from Survey of India 1:50k topographical maps [8]
4. Construction of proportional squares depicting number of houses [8]
5. Viva voce based on laboratory notebook (5 Marks)

References

BOOKS:

Basu, P. 2021. Advanced Practical Geography — a Laboratory Manual, 4 ed, Books and Allied.

Monkhouse F.J., Wilkinson H.R. 1971. Maps and Diagrams, their compilation and construction, 3rd ed (2017 reprint), Alphaneumera.

Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan.

Singh, R.L., Singh, R.P.B. 2008. Elements of Practical Geography, Kalyani Publishers.

WEBSITE:

Census of India: <https://censusindia.gov.in/census.website/data/census-tables>

GEOG-H-CC04/MD-CC03-3/5-Th – Economic Geography – 75 Marks / 3 Credits

Unit I: Concepts

1. Economic Geography: Scope and approaches [4]
2. Concepts in economic geography: Goods and services, production, exchange and consumption; concept of economic man [5]

Unit II: Economic Activities

3. Classification of economic activities: Primary, secondary, tertiary, quaternary, and quinary [4]
4. Location of economic activities: Agriculture (after von Thünen) and industry (after Weber) [6]
5. Primary activities: Agriculture, forestry, fishing, and mining [6]
6. Secondary activities: Classification of manufacturing industries, special economic zones and technology parks [6]
7. Tertiary activities: Transport, trade and services [6]
8. Economic globalisation: Concepts and contemporary issues [2]
9. International trade, role of WTO [2]
10. Emergence of economic blocs (Post WW-II). BRICS: Evolution and significance [4]

References

BOOKS:

- Adams, F.G., 2011. Globalization: Today and Tomorrow, Routledge.
- Anderson, W.P. 2012. Economic Geography, Routledge.
- Aoyama, Y., Murphy, J.T., Hanson, S. 2010. Key Concepts in Economic Geography, Sage.
- Coe N. M., Kelly P.F. and Yeung H.W. 2019. Economic Geography: A Contemporary Introduction, 3rd ed, Wiley-Blackwell.
- Combes P., Mayer T., Thisse J.F. 2008. Economic Geography: The Integration of Regions and Nations, Princeton University Press.
- MacKinnon, D., Cumbers, A. 2019. An Introduction to Economic Geography: Globalisation, Uneven Development and Place, 3rd ed, Routledge.
- Waters M. 2001. Globalization, Routledge.
- Willington, D. E. 2008. Economic Geography, Husband Press.
- Wood, A., Roberts, A. 2010. Economic Geography: Places, Networks and Flows, Routledge.

WEBSITES:

- BRICS: <http://infobrics.org>
- World Trade Organisation: <https://www.wto.org>
- United Nations: www.un.org/en

GEOG-H-CC04/MD-CC03-3/5-P – Economic Geography Lab – 25 Marks / 1 Credit

An A3- or tabloid-size laboratory notebook, comprising class assignments of the following is to be prepared and submitted. Census of India data are to be used where applicable. The exercises are to be drawn in pencil with photocopied representation of source materials where necessary. All texts are to be handwritten.

1. Construction and interpretation of gender-wise bar showing work participation rate [8]
2. Construction and interpretation of proportional divided circles showing state-wise variation in occupational structure [8]
3. Preparation of crop calendar. Construction and interpretation of ergograph [6]
4. Time series analysis of industrial production of India using moving average [8]
5. Viva voce based on laboratory notebook (5 Marks)

References

BOOKS:

Khullar, D.R. 2011. India: A Comprehensive Geography, Kalyani Publishers

Monkhouse, F.J., Wilkinson, H.R. 1971. Maps and Diagrams: Their Compilation and Construction, 3rd ed (2017 reprint), Alphaneumera-Kolkata

Sharma, T.C. 2012. Economic Geography of India, Rawat Publications.

Saxena, H.M. 2005. Transport Geography, Rawat Publications.

WEBSITES:

Census of India: www.censusindia.gov.in

Government of India Data Platform: <https://data.gov.in>

Planning Commission (West Bengal Development Report 2010):

<https://www.scribd.com/document/433016798/sdr-wb1909-pdf>

Trending Economics (India's industrial production): <https://tradingeconomics.com/india/industrial-production>

West Bengal District Statistical Handbooks:

<http://wbpspm.gov.in/publications/District%20Statistical%20Handbook>

Wikipedia (Hierarchy of states):

https://en.wikipedia.org/wiki/List_of_Indian_states_and_union_territories_by_GDP_per_capita

SEMESTERS – 4/6 (for H) & 4/5 (for MD)**GEOG-H-CC05/MD-CC04-4/5/6-Th – Geomorphology – 75 Marks / 3 Credits**

1. Time and space in geomorphology: Schumm and Lichty's model. Landform ordering: Ga Scale of Tricart and Haggett [4]
2. Degradational processes: Classification of mass wasting, and resultant landforms [4]
3. Processes of entrainment, transportation, and deposition by different geomorphic agents [5]
4. Development of river network and landforms on uniclinal and folded structures. Surface expression of faults [6]
5. Development of river network and landforms on granites, basalts, and limestones [6]
6. Coastal processes and landforms [4]
7. Glacial and glacio-fluvial processes and landforms [4]
8. Aeolian and fluvio-aeolian processes and landforms [4]
9. Models on landscape evolution: Views of Davis, Penck, King, and Hack. Significance of systems approach [6]
10. Role of humans in landform development [2]

References**BOOKS:**

- Bierman, P.R., Montgomery, D.R., 2019. Key Concepts in Geomorphology, 2nd ed, W. H. Freeman.
- 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.
- Gupta, A. 2011. Tropical Geomorphology, Cambridge University Press.
- Harvey, A. 2022. Introducing Geomorphology: A Guide to Landforms and Processes, 2nd ed, Dunedin Academic Press.
- Huggett, R., Shuttleworth, E., 2022. Fundamentals of Geomorphology, 5th ed, Routledge.
- Kale, V.S., Gupta, A. 2001. Introduction to Geomorphology, Orient Blackswan (2018 reprint).
- Knighton, A.D. 1998. Fluvial Forms and Processes: A New Perspective, Edward Arnold.
- McCullagh, P. 1978. Modern Concepts in Geomorphology, Oxford University Press.
- Szabó, J., Dávid, L., Lóczy, D. (Eds) 2010. Anthropogenic Geomorphology: A Guide to Man-made Landforms, Springer.
- Selby, M.J. 1986. Earth's Changing Surface, Oxford University Press.
- Strahler, A. 2016. Introducing Physical Geography, 6th ed, Wiley.
- 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.

WEBSITES:

- British Society for Geomorphology: www.geomorphology.org.uk
- Indian Institute of Geomorphologists: www.indiageomorph.org
- International Association of Geomorphologists: www.geomorph.org

GEOG-H-CC05/MD-CC04-4/5/6-P – Geomorphology Lab – 25 Marks / 1 Credit

An A3- or tabloid-size laboratory notebook, comprising class assignments of the following is to be prepared and submitted. The exercises are to be drawn in pencil with photocopied representation of source materials where necessary. All texts are to be handwritten.

1. Extraction and interpretation of geomorphic information from Survey of India 1:50k topographical maps of plateau region: Construction of relief profiles (superimposed, projected, and composite) [7]
2. Construction of relative relief map, slope map (after Wentworth), drainage density map on a delineated drainage basin (c. 5' x 5') [9]
3. Construction of hypsometric curve and derivation of hypsometric integer of a drainage basin (c. 5' x 5') of a plateau region [7]
4. Determination of channel sinuosity index (channel length/valley length measured through straight line) and braiding index of rivers from topographical maps (c. 10-km reach) [7]
5. Viva voce based on laboratory notebook (5 Marks)

References

- Basu, P. 2021. Advanced Practical Geography — a Laboratory Manual, 4 ed, Books and Allied.
- McCullagh, P. 1978. Modern Concept in Geomorphology, Oxford University Press.
- Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3rd ed, Orient Blackswan.
- Sen, P.K. 1989. Geomorphological Analysis of Drainage Basin: An Introduction to Morphometric and Hydrological Parameters, University of Burdwan.
- Vaidyanadhan, R., Subbarao, K.V. 2014. Landforms of India from Topomaps and Images, Geological Society of India.