



Ph & Fax No. 03222-243400
Email: principaldebra@gmail.com

DEBRA THANA SAHID KSHUDIRAM SMRITI MAHAVIDYALAYA

(Autonomous)

P.O.- CHAKSHYAMPUR , DIST.- PASCHIM MEDINIPUR PIN:-7221124 , WEST BENGAL, INDIA

DEPARTMENT OF GEOGRAPHY

3 years Major and Minor course

Syllabus Framework for the Semester-1 (Major & Minor)

| Level | YR. | SEM | Course Type | Course Code | Course Title | Credit | L-T-P | Marks | | | |
|------------------|-----------------|-----|-------------------------|-------------|--|--------|-------|-------|-----------|-------|--|
| | | | | | | | | CA | ESE | Total | |
| B.Sc. (Hons.) | 1 st | I | SEMESTER-I | | | | | | | | |
| | | | Major-1 | GEOH MJ101 | T: Geotectonics and Geomorphology (Theory) P: Practical | 4 | 3-0-1 | 15 | 60 | 75 | |
| | | | SEC | GEOSE C01 | P: Basics of Computer and G.I.S | 3 | 0-0-3 | 10 | 40 | 50 | |
| | | | AEC | AEC01 | Communicative English -1 (<i>common for all programmes</i>) | 2 | 2-0-0 | 10 | 40 | 50 | |
| | | | MDC | MDC01 | Multidisciplinary Course -1 (<i>to be chosen from the list</i>) | 3 | 3-0-0 | 10 | 40 | 50 | |
| | | | VAC | VAC01 | ENVS (<i>common for all programmes</i>) | 4 | 2-0-2 | 50 | 50 | 100 | |
| | | | Minor (Disc.-I) | GEO MI 01 | T: Fundamentals of Earth System Science (<i>To be taken by students of other Disciplines</i>) | 4 | 3-1-0 | 15 | 60 | 75 | |
| | | | Semester-I Total | | | | | | 20 | | |

CC = Core Course, AECC = Ability Enhancement Compulsory Course, GE = Generic Elective , SEC = Skill Enhancement Course DSE = Discipline Specific Elective, CA= Continuous Assessment, ESE= End Semester Examination, TBD=To be decided, CT = Core Theory, CP=Core Practical, L = Lecture, T = Tutorial, P = Practical, MIL = Modern Indian Language, ENVS = Environmental Studies,



For 4 years Course

MAJOR (MJ) Paper: GEOHMJ101 T

MJ-1: Geotectonics and Geomorphology (Theory) Credits 03 (Full Marks: 40)

MJ-1T: Geotectonics and Geomorphology (Theory)

1. Geological time scale: Tectonic and biological history of Earth; Dating of Rocks: absolute and relative dating. Earth's interior with special reference to seismology. Isostasy: Models of Airy and Pratt
2. Continental Drift; Plate Tectonics: Processes along different margins and resulting landforms. Types of Fold and Fault; Sea floor spreading
3. Geomorphic processes and resultant forms: Weathering, Mass wasting, River, Glacier and Wind.
4. Structural impact on landforms: Drainage and landform development on Horizontal, Homoclinal, Folded and Faulted structures.
5. Cyclic and Non-cyclic models of landscape evolution: Views of Davis, Penck, King, Chorley, Schumm and Hack

Suggested Reading:

- Bloom A. L., 2001: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, Third edition, New Delhi.
- Maity, Ramkrishna, Geotectonics and Geomorphology: An Insight into Process-form Relationship. Nabodaya Publications, Kolkata. ISBN 978-81-961853-2-9
- বসু, মাইতি ; আধুনিক ভূমিরূপ বিজ্ঞান (ভূ -গঠন ও বিবর্তন) নবোদয় পাবলিকেশন.
- Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
- Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
- Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
- Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
- Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP



- Skinner, Brian J. and Stephen C. Porter (2000), *The Dynamic Earth: An Introduction to physical Geology*, 4th Edition, John Wiley and Sons
- Thornbury W. D., 1969: *Principles of Geomorphology*, Wiley.



MJ-1P: Geotectonics and Geomorphology (Practical) for 4 years Course
Paper: GEOHMJ101P Credit: - 1 Full Marks: 20

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1. Characteristics of Rocks and minerals and their identification: (specification of 10 Rocks and 10 Minerals)
 2. Reading and Construction map; Concept of Scale (Linear, comparative, diagonal and vernier). Geological Maps: Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological sections on horizontal, homoclinal, folded and faulted structures.
 3. Laboratory Note Book and Viva- Voce. (5)
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Suggested Reading:-

1. R.P.Misra; Fundamentals Of Cartography; Concept Publishing Company Pvt.Ltd. ,New Delhi - 110059.
2. R.L.Singh, Rana P.B.Singh; Elements Of Practical Geography; Kalyani Publishers,New DelhiLudhiana.
3. Sankar Adhikari Honours Beboharik Bhugal Dove Publishing House Kolkata



SKILL ENHANCEMENT COURSE (SEC) for 4 years Course
Paper: - GEOSEC01

SEC 1P: Basics of Computer and G.I.S (Practical) Credits 03 Full Marks: 50

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A. Basic Knowledge of Computer:

1. Knowing computer: what is computer, basic application of computer, computer memory, concepts of hardware and software; operating system; running an application, viewing of files, folders and directories, creating and renaming of files and folders.
2. Understanding word processing (Google Dox.)
3. Using spreadsheet: basics of spreadsheet; manipulation of cells; formulas and functions; editing of spreadsheet, printing of spreadsheet (MS Excel).
4. Concept of internet; application of internet; World Wide Web; email.
5. Google form: generation, submission and data extraction
6. Making a small presentation: MS PowerPoint

B. Basic Knowledge About G.I.S and its Application:

1. Introduction to G.I.S
 2. Spatial Data Representation (Raster and vector)
 3. Data structure of G.I.S (Points, Lines and polygon)
 4. Geo-referencing of Maps
 5. Viva- voce based on laboratory notebook (5).
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Suggested Reading:-

- Barte, Thomas C. (1977): Digital Computer Fundamental; McGraw Hill.
- Chauhan, S.; Chauhan, A. and Gupta, K. (2006): Fundamental of Computer; Firewall Media.



- Flake, L.J.; McClintock, C.E. and Turner, S. (1989): Fundamental of Computer Education; Wordsworth Pub. Co.
- Leon, A .and Leon,M.(1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- Malvino, A.P. and Leach, D.P. (1981): Digital Principles and Applications; Tata McGraw Hill.
- Mano, Moris M. and Kime, Charles R. (2004): Logic and Computer Design Fundamental; Prentice Hall.
- Rajaraman, V. (2003): Fundamentals of Computer, Prentice Hall Publisher
- Sarkar, A. and Gupta, S.K (2002) Elements of computer Science, S Chand and Company, New Delhi
- Blissmer (1996): Working with MS Word; Houghton Mifflin Co.
- Johnson, Steve (2007): Microsoft Power Point 2007; Pearson Paravia Bruno.
- Leon, A .and Leon,M.(1999): Introduction to Computer, USB Publishers' Distributors Ltd.
- Leon, A. and Leon, M.(1999): A beginners Guide to Computers, Vikas
- Rajaraman, V. (2008): Computer Primer; Prentice Hall of India Pvt. Ltd.
- Sarkar, A. and Gupta, S.K (2002) Elements of computer Science, S Chand and Company, New Delhi
- Shepard, Aaron (2007): Perfect Pages; Shepard Publications.
- Tyson, Herbert L. (2007): Microsoft Word 2007 bible; John Wiley.
- Walkenbach, John (2007): Excel 2007 Bible; John Wiley
- Sankib Mazumdar Remote Sensing And G. I. S. Amar Pustakalay, Block 6,Stall 8 , Bankim Chatterjee
- Tanmoy Karon Remote Sensing And GIS Rupali Publication, Chandannagar
- Thomas M. Lillesand, Ralph W. Kiefer, Jonathan W. Chipman Ramote Sensing And Image Interpretation John Wiley & Sons(Asia) Pte. Ltd, (Singapore)
- V C Jha Geomorphology And Remote Sensing Acb Publications,Calcutta.



Syllabus Framework for the Semester-1 (Minor) for 4 years Course
Paper:- GEOMI01

MI – 1T: Fundamentals of Earth System Science Credits 04 Full marks: 75

- 1. Geotectonics:** Earth's interior, Isostasy, Plate tectonics. Sea floor Spreading.
- 2. Geomorphology:** - Geomorphic processes and resultant forms: Weathering, Mass wasting, River, Glacier and Wind, Landscape evolution models of Davis, and Hack
- 3. Hydrology:** - Hydrological Cycle. Hydrological Parameters: Run off, Infiltration and evapotranspiration. Occurrence and storage of Groundwater.
- 4. Climatology:** -Composition and layering of the atmosphere. Factors of Insolation, Heat budget of the atmosphere. Pressure belts and general circulation in the atmosphere. Tropical cyclones. Monsoon Mechanism.
- 5. Soil Geography:** -Factors of soil formation. Concept of Soil profile (Laterites and Podzols), soils. Physical and chemical properties: soil texture, structure, pH, organic matter and NPK. Soil erosion and its management.

Suggested Reading:

- Bloom A. L., 2001: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, Third edition, New Delhi.
- Maity, Ramkrishna, Geotectonics and Geomorphology: An Insight into Process-form Relationship. Nabodaya Publications, Kolkata. ISBN 978-81-961853-2-9
- বসু, মাইতি ; আধুনিক ভূমিরূপ বিজ্ঞান (ভূ -গঠন ও বিবর্তন) নবোদয় পাবলিকেশন.
- Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
- Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
- Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
- Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
- Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP



- Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
- Thornbury W. D., 1969: Principles of Geomorphology, Wiley
- Rafhik Ahamed . Abohaya O Jalabayu Bigan; Ghankosh Prakashani 38/2-K Bangla Bazaar,Dhaka 1100.
- Sandeep Kumar Choudhary; Soil Geography New Central Book Agency (Pvt) Limited,New Delhi
- Samir Adak,Sambhunath Singh Mura, Sulekha Adak Bhu-Jalabidya Tapati Publisher.
- Samir Adak, Mousam Majumder, Suparna Majumder, Mafizul Haque Bhu-Parichoy(3year's Pass Course) 4th Paper Tapoti Publisher, Tawn Colonichokh, Medinipur, Paschim Medinipur.
- 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.
- Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi
- □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.
- Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-
- Td Biswas & Sk Mukherjee Text Book Of Soil Science Mcgraw Hill Education (India) Private Limited



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INDIA

DEPARTMENT OF GEOGRAPHY

4 years Major and Minor course

Syllabus Framework for the Semester II (Major and Minor)

| Level | YR. | SEM | Course Type | Course Code | Course Title | Credit | L-T-P | Marks | | | |
|------------------|-----|--------------------------|--------------------|-------------|--|-----------|-------|-------|-----|------------|--|
| | | | | | | | | CA | ESE | Total | |
| B.Sc. (Hons.) | 1st | II | SEMESTER-II | | | | | | | | |
| | | | Major-2 | GEOHM J102 | T: Climatology P: Climatology Lab (Practical) | 4 | 3-0-1 | 15 | 60 | 75 | |
| | | | SEC | GEOSE C02 | Coastal Management (T) | 3 | 3-0-0 | 10 | 40 | 50 | |
| | | | AEC | AEC02 | MIL-1 (<i>common for all programmes</i>) | 2 | 2-0-0 | 10 | 40 | 50 | |
| | | | MDC | MDC02 | Multi Disciplinary Course-02 (<i>to be chosen from the list</i>) | 3 | 3-0-0 | 10 | 40 | 50 | |
| | | | VAC | VAC02 | Value Added Course-02 (<i>to be chosen from the list</i>) | 4 | 4-0-0 | 10 | 40 | 50 | |
| | | | Minor (Disc.-II) | GEOMI 02 | T: Human Geography (<i>To be taken by students of other Disciplines</i>) | 4 | 4-0-0 | 15 | 60 | 75 | |
| | | | Summer Intern. | CS | Community Service | 4 | 0-0-4 | - | - | 50 | |
| | | Semester-II Total | | | | 24 | | | | 400 | |
| | | TOTAL of YEAR-1 | | | | 44 | | | | 800 | |



Syllabus for the Semester-ii (Major) Theory (for 4 years Course)

Paper:- GEOHM J 102 T

Credit: - 3

Full marks: - 40

Climatology

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Unit I: Elements of the Atmosphere

1. Nature, composition and layering of the atmosphere.
2. Insolation: Controlling factors. Heat budget of the atmosphere.
3. Temperature: horizontal and vertical distribution. Inversion of temperature
4. Climate change; Greenhouse effect and global warming, Ozone depletion, climate change effect.

Unit II: Atmospheric Phenomena and Climatic Classification

5. Condensation: Process and forms. Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence theory. Forms of precipitation and global distribution.
 6. Atmospheric Circulation: Planetary winds, jet streams, index cycle. El nino & Southern Oscillation.
 7. Atmospheric disturbances: Tropical and mid-latitude cyclones, thunderstorms.
 8. Monsoon circulation and mechanism with reference to India.
 9. Climatic classification after Thornthwaite (1955) and Koppen.
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Suggested reading:-

- Ahrens, C.D. 2012. 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. Critchfield, H. J. 1983. General Climatology. Prentice Hall India (2010 Reprint).
- Dessler, A.E. 2021. Introduction to Modern Climate Change, 3rd ed, Cambridge University Press.



- Hidore, J.J., Oliver, J.E., Snow, M., Snow, R. 2020. Climatology: An Atmospheric Science, 3rd ed, Pearson.
- Lal, D.S. 2012. Climatology. Sharda Pustak Bhawan. Lutgens, F.K., Tarbuck, E.J. 1998. The Atmosphere: An Introduction to Meteorology, 9th ed, PrenticeHall.
- Oliver, J.E., Hidore J.J. 2002. Climatology: An Atmospheric Science, Pearson Education India.
- Rohli, R.V., Vega, A.J., 2017. Climatology, 4th ed, Jones & Bartlett Learning.
- WEBSITES: India Meteorological Department: <https://mausam.imd.gov.in>
- Intergovernmental Panel on Climate Change: <https://www.ipcc.ch> World Bank
- Climate Change Knowledge Portal: <https://climateknowledgeportal.worldbank.org> World Meteorological Organization: <https://public.wmo.int/e>



Paper: - GEOHM J 102 P (for 4 years Course)

Practical

Climatology Lab

Credits 01

Full Marks: - 20

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1. Measurement of weather elements using analogue instruments: Mean daily temperature, air pressure, relative humidity, and rainfall
 2. Components and Classification of Maps. Interpretation of a daily weather map of India (any two): Pre-Monsoon, monsoon, and post-monsoon.
 3. Construction and interpretation of monthly rainfall dispersion diagram (quartile method). Seasonal water budget.
 4. Construction and interpretation of hythergraph and climograph (after Taylor) .
 5. Viva voce based on laboratory notebook (5 Marks)
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Suggested reading: -

- 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-Kolkata.
- 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.
- WEBSITES: India Meteorological Department: <https://mausam.imd.gov.in> Climatological tables of observatories of India:
<https://www.imdpune.gov.in/library/public/Climatological%20Tables%201991-2020.pdf>



Skill Enhancement Course(SEC) for 4 years Course

SEC-1: Coastal Management

Credits 03

Paper:- GEOSEC02

SEC-1T:

Coastal Management

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1. Coast: definition, types. Coastal Process and forms. Coastal morphodynamic variables and their role in evolution of coastal forms.
2. Impacts and management of anthropogenic activity: Fishing, mining, oil exploration, salt manufacturing, land reclamation and tourism.
3. Coastal hazards and their management using structural and non-structural measures: cyclone, erosion, flood, sand encroachment, dune degeneration, estuarine sedimentation and pollution
4. Principles of Coastal Zone Management. Exclusive Economic Zone and Coastal Regulation Zones with reference to India.
5. Application of Remote Sensing & G.I.S in coastal studies and management.

Suggested Readings:

- Carter, R.W.G (1988): Coastal Environments: An Introduction to the Physical, Ecological and Cultural Systems of Coastlines, Academic Press, London
- Dayer K.R. (1979): Estuary Hydrography, and Sedimentation, Cambridge Univ. Press, Cambridge.
- Devis R.A. (ed) (1978): Coastal Sedimentary Environmental; Springer-Verlag, New York.
- Harikawa , K. (1978): Coastal Engineering, Univ Of Tokyo Press, Tokyo.
- Inman, D.L. (1960): Shore Processes, Encyclopedia of Science & Technology, Mc Graw Hill, New York.
- Knight, B. and Philip, A. (1979): Estuarine and coastal Land reclamation and water storage, Saxon House.



- Lausn, E and Lato, I.(ed): Chemistry and Biochemistry of estuaries, Wiley, New York.
- Pethick, J. (2000): An Introduction to coastal Geomorphology, Arnold, London.
- Stanley, D.J. and Suist D.J.P.(ed)(1976): Marine Sediment Transport and environmental management;Wiley, NewYork.
- Wagret,P. (1968): Polderlands, Methuen, London



Syllabus Framework for the Semester-II 4 years Major and Minor course

(Major and Minor)Theory

GEOMI-2T: Human Geography

Credits 04 Full Marks: 75

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Course contents:

Unit I: Scope and Approaches

1. Elements of human geography: Nature, scope, and recent trends .
2. Approaches to Human geography: Based on resource, locational, landscape, environmental .

Unit II: Social Geography

3. Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, and industrial society.
4. Human adaptation to the environment: Santal, Lodha, Sabar.
5. Evolution and characteristics of post-industrial urban societies

Unit III: Population Geography

7. Demographic transition. Significance of demographic dividend
8. Distribution, density, and growth of population with special reference to India

Unit IV: Settlement Geography

8. Characteristics of settlements: Urban and rural
9. Site, situation, types, and patterns of rural settlements

Unit V: Urban Geography

10. Size-class classification of urban settlements after Census of India
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Suggested Reading:-

- 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.