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DEBRA THANA SAHID KSHUDIRAM SMRITI MAHAVIDYALAYA

(Autonomous)

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

DEPARTMENT OF GEOGRAPHY

4 years Major and Minor course

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

Level	YR.	SEM	CourseT ype	Course Code	Course Title	Credit	L-T-P	Marks		
								CA	ESE	Total
B.Sc. (Hons.)	1 st	I	SEMESTER-I							
			Major-01	UG/I/GEO/4/MJ-1	T: Geotectonics and Geomorphology (Theory) P: Geotectonics and Geomorphology (Practical)	4	3-0-1	15	60	75
			SEC-01	UG/I/GEO/4/SE-1P	P: Basics of Computer and GIS	3	0-0-3	10	40	50
			AEC	AEC01	Communicative English -1 (common for all programmes)	2	2-0-0	10	40	50
			MDC	MDC01	Multidisciplinary Course -01 (to be chosen from the list)	3	3-0-0	10	40	50
			VAC	VAC 01	ENVS (common for all programmes)	4	2-0-2	50	50	100
			Minor-01 (Disc.-I)	UG/I/GEO/3/MI-1T	T: Fundamentals of Earth System Science (To be taken by students of other Disciplines)	4	3-0-1	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 Studi



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

Paper:- UG/I/GEO/4/MJ-1

Credits:-4

Full Marks:-75

Geotectonics and Geomorphology (Theory)

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Course Learning Outcomes:

This paper focuses on the tectonic evolution of the Earth along with methods of dating rocks and studying Earth's interior. It includes the concept of isostasy and the formation of landforms through tectonic processes like drifting, spreading, folding, and faulting. Students learn about various geomorphic processes such as weathering, erosion, and deposition by rivers, glaciers, and winds. The role of geological structures in shaping landforms is discussed in different structural settings. Various models of landscape development are introduced and critically assessed. Practical work involves construction of scales, identification of rocks and minerals, and interpretation of geological maps and sections.

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Paper:- UG/I/GEO/4/MJ-1T Geotectonics and Geomorphology (Theory) 3 Credits/40 marks

Course contents:

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. Structural impact on landforms: Drainage and landform development on Horizontal, Homoclinal, Folded and Faulted structure.
4. Cyclic and Non-cyclic models of landscape evolution: Views of Davis, Penck, King, Chorley, Schumm and Hack

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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.



Paper:- UG/I/GEO/4/MJ-1P

Credit:-1

Full Marks:-20

Geotectonics and Geomorphology(Practical)

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Course contents:

1. Graphical construction of scales: Concept of Scale (Linear, comparative, diagonal and vernier)
 2. Characteristics of Rocks and minerals and their identification:
 3. Geological Maps: Reading and Construction map; Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological section on horizontal, homoclinal, folded and faulted structure.
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Suggested Readings:

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



Skill Enhancement Course (SEC) for 4 years Course

Paper:- UG/I/GEO/4/SE-1P

Credits: -3

Full Marks:-50

SEC-1 P: Basics of Computer and G.I.S (Practical)

Course Learning Outcomes:

The course builds foundational knowledge of computers, including software, file handling, and internet use. It trains students in word processing, spreadsheets, and presentation tools for academic and professional tasks. Learners understand the concept and applications of GIS, including spatial data formats and structures. Practical skills include map geo-referencing and data handling using basic GIS tools. Overall, students gain essential digital and geospatial skills for further academic or field-based work.

Course contents:

Unit- I : Basic Knowledge about 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 file, folders and directories, creating and renaming of files and folders.
2. Understanding word processing.
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

Unit - II Basic Knowledge About G.I.S and its Application

7. Introduction to G.I.S
8. Spatial Data Representation (Raster and vector)
9. Data structure of G.I.S (Points, Lines and polygon)
10. Geo-referencing of Maps

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Suggested Readings:

- Bartee, 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 for the Semester-I 3 years Minor course (Minor) Theory

Paper:- UG/I/GEO/3/MI-1T

Credits: -4

Full Marks:-75

Fundamentals of Earth System Science

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Course Learning Outcomes:

This paper focus on the foundational knowledge of Earth's internal structure, plate dynamics, and geomorphic processes shaping landforms. It explains key hydrological concepts including the water cycle, runoff, infiltration, and groundwater storage. Atmospheric composition, energy balance, pressure systems, and tropical weather patterns are explored in climatology. Soil geography covers formation factors, profile types, properties, and erosion control methods. Students gain an integrated understanding of Earth's physical systems and their environmental interactions.

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Course contents

- 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.

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Suggestion 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
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- 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 Bazzar,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.