Teaching Plan

Department of Geography

Session: 2023-24

Odd Semester

TermI:Fromcommencement ofclassto1st InternalAssessment

Term II: 1st Internal Assessment to 2nd Internal Assessment

TermIII:2nd Internal AssessmenttoEndSemester Exam

TeachingPlan: 2023-24
(Odd Semester)

Sharmistha Manna
Dept. of Geography

Semester-I		
No of Classes (Hour) allotted per week: 02(MJ -1,MI-1)		
Syllabus allotted for theory classes	**MJ-1T: Geotectonics and Geomorphology (Theory)** 1.Geomorphic processes and resultant forms: Weathering, Mass wasting, River, Glacier and Wind **MJ-1P: Geotectonics and Geomorphology (Practical)** 1.Geological Maps: Homoclinal **MI – 1T: Fundamentals of Earth System Science.** 1.Geomorphology: Working of processes and landforms developed by weathering, mass wasting, river, glacier and wind. Landscape evolution models of Davis, Penck, King and Hack. 2.Hydrology and Oceanography: Hydrological Cycle. Hydrological Parameters: Run off, Infiltration and evapotranspiration. Occurrence and storage of Groundwater. Major relief features of the ocean floor: Pacific, Atlantic and Indian Ocean. Formation of coral reefs. Distribution of Salinity and Temperature in Pacific, Atlantic and Indian Ocean.	
Total Lecture	**Term I**	**Paper**
06	Geomorphic processes and resultant forms: Weathering, Mass wasting.	**MJ-1T**
06	Geomorphology: Working of processes and landforms developed by weathering, mass wasting, river, glacier and wind. Landscape evolution models of Davis, Penck, King and Hack.	
	Term II	
10	River, Glacier and Wind	**MJ-1T**
09	Hydrology and Oceanography: Hydrological Cycle. Hydrological Parameters: Run off, Infiltration and evapotranspiration. Occurrence and storage of Groundwater. Major relief features of the ocean floor: Pacific, Atlantic and Indian Ocean. Formation of coral reefs. Distribution of Salinity and Temperature in Pacific, Atlantic and Indian Ocean.	**MI-1T**
	Term III	
04	**End - Semester questions discussion on selective topic of MJ-1T & discussion about writing techniques**	**MJ-1T**
03	**End - Semester questions discussion on selective topic of MI-1T & discussion about writing techniques**	**MI-1T**
Syllabus allotted for practical classes	**MJ-1P: Geotectonics and Geomorphology (Practical)**	**MJ-1P**
Total Lecture	**MJ-1P: Geotectonics and Geomorphology (Practical)**	
05		

Semester-III		
No of Classes (Hour) allotted per week: 04 ***Each Lecture carried 01 Hour***		
Syllabus allotted for theory classes	**C5T: Climatology** **Unit II: Atmospheric Phenomena and Climatic Classification**. 1.Tropical and mid-latitude cyclones. 2.Monsoon circulation and mechanism with reference to India. **C6T: Statistical Methods in Geography** **Unit II**: Association and correlation: Rank correlation, product moment correlation **C6 P – Statistical Methods in Geography** Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted and residual from regression would be mapped with a short interpretation. **C7T: Geography of India** **Unit I: Geography of India** 1.Tectonic and stratigraphic provinces, physiographic divisions. 2.Climate, soil and vegetation: Characteristics and classification. 3.Population: Distribution, growth, structure and policy. **Unit II: Geography of West Bengal** 1.Resources: Mining, agriculture and industries.	
Total Lecture	**Term I**	
04	Tropical and mid-latitude cyclones	**C5T**
06	Association and correlation: Rank correlation, product moment correlation	**C6T**
08	Tectonic and stratigraphic provinces, physiographic divisions. Climate, soil and vegetation: Characteristics and classification	**C7T**
	Term II	
04	Monsoon circulation and mechanism with reference to India.	**C5T**
04	Population: Distribution, growth, structure and policy	**C7T**
06	Resources: Mining, agriculture and industries	**C7T**
	Term III	
02	Revision class over C5T and doubt clearance	**C5T**
02	Doubt clearance on C6T and revision of selective topic	**C6T**
02	Revision class over C7T and doubt clearance	**C7T**
03	**End - Semester questions discussion on selective topic of C5T, C6T, C7T & discussion about writing techniques**	
06	**C6 P – Statistical Methods in Geography** Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted and residual from regression would be mapped with a short interpretation.	**C6P**

Semester-V	
No of Classes (Hour) allotted per week: 04 ***Each Lecture carried 01 Hour***	
Syllabus allotted for theory classes	**C11T: Field Work and Research Methodology** . **Unit I: Research Methodology**. Research in Geography: Meaning, types and significance **CC-12: Remote Sensing and GIS** 1.Principles of Remote Sensing (RS): Types of RS satellites and sensors. 2.Sensor resolutions and their applications with reference to IRS and Landsat missions, image referencing schemes and data acquisition. **DSE-1: Hydrology and Oceanography** 1.Coral reefs: Formation, classification and threats . 2.Sea level change: Types and causes. **DSE2T: Resource Geography** **Unit I**: 1.Problems of resource depletion—global scenario (forest, water, fossil fuels). **Unit II:** 1.Distribution, Utilisation, Problems and Management of Energy Resources: Conventional and Non-Conventional. 2.Contemporary Energy Crisis and Future Scenario. 3.Politics of Power resources.

Total Lecture	Term I	Paper
06	Research in Geography: Meaning, types and significance	**C11T**
04	Principles of Remote Sensing (RS): Types of RS satellites and sensors	**C12T**
03	Coral reefs: Formation, classification and threats .	**DSE 1T**
02	Problems of resource depletion—global scenario (forest, water, fossil fuels).	**DSE 2T**
05	Distribution, Utilisation, Problems and Management of Energy Resources: Conventional and Non-Conventional.	**DSE 2T**
Term II		
05	Sensor resolutions and their applications with reference to IRS and Landsat missions, image referencing schemes and data acquisition.	**C12T**
03	Sea level change: Types and causes	**DSE 1T**
02	Contemporary Energy Crisis and Future Scenario.	**DSE 2T**
02	Politics of Power resources	**DSE 2T**
TermIII		
02	Class test on selective topic.	**C11T,C12T, DSE1T & DSE2T**
02	Doubt clearance on selective topics and revision	
02	**End - Semester questions discussion on selective topic of C11T, C12T & discussion about writing techniques**	**C13T,C14T**
02	**End - Semester questions discussion on selective topic of DSE1T, DSE2T & discussion about writing techniques**	**DSE1T & DSE2 T**

Department of Geography

Teaching Plan

Name of the Teacher: SK SAFIKUL HAQUE

Semester II	
Syllabus allotted	**MJ 1:** Geotectonic and Geomorphology **MI T:** Fundamentals of the earth science **MJ A1/B1 T:** Fundamentals of the earth science
No of Classes (Hour) per week	**MJ 1:** 1 **MI T:** 1 **MJ A1/B1:** 1
Teaching Plan	**Lecture 1:** Geological time scale: Tectonic history of the earth. **Lecture 2:** Geological time scale: Geological history of the earth. **Lecture 3:** Dating of the rocks: absolute. **Lecture 4:** Dating of the rocks: relative. **Lecture 5:** Short test. **Lecture 6:** Short test. **Lecture 7:** Short test. **Lecture 8:** Tutorial. **Lecture 9:** Tutorial**.** **Lecture 10:** Interior structure of the earth with the special reference of seismological study. **Lecture 11:** Isostasy: Model of Airy's. **Lecture 12:** Isostasy: Model of Pratt's. **Lecture 13:** Short test. **Lecture 14** Tutorial. **Lecture 15:** Tutorial. **Lecture 16:** Composition of the Atmosphere. **Lecture 17:** Layering of the Atmosphere. **Lecture 18:** Isolation: controlling factors. **Lecture 19:** Heat budget of the atmosphere **Lecture 20:** Short test. **Lecture 21:** Temperature: horizontal and vertical distribution. **Lecture 22:** Mechanism of precipitation: Bergeron-Findeisen theory **Lecture 23:** Mechanism of precipitation: Collision and Coalescence theory **Lecture 24:** Forms of precipitation **Lecture 25:** Short test. **Lecture 26:** Circulation in the atmosphere **Lecture 27:** Pressure belt. **Lecture 28:** Mechanism of Monsoon. **Lecture 29:** Climatic classification after Köppen **Lecture 30:** Climatic classification after Thornthwaite **Lecture 31:** Short test. **Lecture 32:** Composition of the Atmosphere. **Lecture 33:** Layering of the Atmosphere. **Lecture 34:** Isolation: controlling factors. **Lecture 35:** Heat budget of the atmosphere **Lecture 36:** Forms of precipitation **Lecture 37:** Short test. **Lecture 38:** Circulation in the atmosphere **Lecture 39:** Pressure belt. **Lecture 40:** Mechanism of Monsoon. **Lecture 41:** Climatic classification after Köppen **Lecture 42:** Climatic classification after Thornthwaite

	Lecture 43: End - Semester questions & problems discussion. Lecture 44: Revision. Lecture 45: Class test

Semester III	
Syllabus allotted	**CC-5**: Climatology. **CC-6**: Statistical Methods in Geography. **CC-7**: Geography of India. **SEC1T**: Coastal Geography.
No of Classes (Hour) per week	**C5+6T: 2** **C10T & SEC2T:** 1 **C6P:** 2
Teaching Plan	**Lecture 1:** Nature of the Atmosphere. **Lecture 2:** Composition of the Atmosphere. **Lecture 3:** Layering of the Atmosphere. **Lecture 4:** Short test. **Lecture 5:** Short test. **Lecture 6:** Tutorial. **Lecture 7:** Tutorial. **Lecture 8:** Insolation: controlling factors. **Lecture 9:** Heat Budget of the Atmosphere. **Lecture 10:** Short test. **Lecture 11:** Short test. **Lecture 12:** Measures of dispersion: mean deviation. **Lecture 13:** Measures of dispersion: standard deviation. **Lecture14:** Measures of dispersion: coefficient of variation. **Lecture15:** Tutorial.

	Lecture 16: Central Tendency. **Lecture 17:** Mean. **Lecture 18:** Median. **Lecture19:** Mode. **Lecture20:** Partition values. **Lecture 21:** Short test. **Lecture 22:** Short test. **Lecture 23:** Measures of dispersion. **Lecture 24:** Measures of dispersion: Range. **Lecture 25:** Short test. **Lecture 26:** Short test. **Lecture 27:** Coastal hazards and their management using structural and non-structural measures: Erosion. **Lecture 28:** Coastal hazards and their management using structural and non-structural measures: Flood. **Lecture 29:** Coastal hazards and their management using structural and non-structural measures: Sand encroachment. **Lecture 30:** Coastal hazards and their management using structural and non-structural measures: dune degeneration. **Lecture 31:** Coastal hazards and their management using structural and non-structural measures: estuarine sedimentation. **Lecture 32:** Coastal hazards and their management using structural and non-structural measures: estuarine pollution. **Lecture 33:** Short test. **Lecture 34:** Short test. **Lecture 35:** Tutorial. **Lecture 36:** Population: Distribution. **Lecture 37:** Population: Growth. **Lecture 38:** Population: Structure. **Lecture 39:** Population: Policy. **Lecture 40:** Short test. **Lecture 41:** Short test **Lecture 42:** End - Semester questions & problems discussion. **Lecture 43:** Revision. **Lecture 44:** Revision. **Lecture 45:** Revision.
Semester VI	
Syllabus allotted	**C11T**: Field Work and Research Methodology. **C12T**: Remote Sensing and GIS. **DSE1**: Hydrology and Oceanography. **DSE2**: Resource Geography.

No of Classes (Hour) per week	**C11T+ C12T:** 1 **DSE1+DSE2:** 1 **C14P:** 2
Teaching Plan	**Lecture 1:** Landscape survey using transects. **Lecture 2:** Landscape survey using quadrants. **Lecture 3:** Landscape survey using constructing a sketch. **Lecture 4:** Landscape survey using photo. **Lecture 5:** Short test. **Lecture 6:** Short test. **Lecture 7:** Landscape survey using video recording. **Lecture 8:** Preparation of False Colour Composites from IRS LISS-3. **Lecture 9:** Preparation of False Colour Composites from Landsat TM. **Lecture 10:** Preparation of False Colour Composites from OLI data. **Lecture 11:** Short-test. **Lecture 12:** Tutorial. **Lecture 13:** Tutorial. **Lecture 14:** Principles of image interpretation. **Lecture 15:** Preparation of inventories of landuse land cover (LULC) features from satellite images

	Lecture 16: Ocean temperature: Distribution. **Lecture 17:** Ocean temperature: Determinants. **Lecture 18:** Ocean salinity: Distribution. **Lecture 19:** Ocean salinity: Determinants. **Lecture 20:** Short-test. **Lecture 21:** Shorts test. **Lecture 22:** Marine resources: Classification. **Lecture 23:** Marine resources: Sustainable utilization. **Lecture 24:** Significance of Resources: Backbone of Economic growth. **Lecture 25:** Significance of Resources: Backbone of Economic development. **Lecture 26:** Tutorial. **Lecture 27:** Distribution, Utilisation, Problems and Management of Metallic Mineral Resources: Iron ore,. **Lecture 28:** Distribution, Utilisation, Problems and Management of Metallic Mineral Resources: Bauxite and copper. **Lecture 29:** End- semester questions discussion **Lecture 30:** Class test

Teaching Plan

Department of Geography

Session: 2023-24

Odd Semester

Term I: From commencement of class to 1st Internal Assessment

Term II: 1st Internal Assessment to 2nd Internal Assessment

Term III: 2nd Internal Assessment to End Semester Exam

Teaching Plan: 2023-24 (Odd Semester)

Teacher Name: Rimpa Mula

Dept. of Geography

Semester-I		
No of Classes (Hour) allotted per week: 03		
Syllabus allotted for theory classes	MJ 1T: Continental Drift; Plate Tectonics: Processes along different margins and resulting landforms. Types of Fold and Fault; Sea floor spreading. MJ A1: 1. Geotectonics: Origin of Earth, Earth's interior, Isostasy, Continental drift and Plate tectonics. MI: 1. Geo-tectonics: Origin of Earth, Earth's interior, Isostasy, Continental drift and Plate tectonics. 2. Soil Geography: Factors or soil formation. Soil profile development in Lateritic, Podzol and Chernozem soils. Physical and chemical properties: soil texture, structure, p H , organic matter and NPK. Principles of soil classification: Genetic and USDA	
Lecture No.	**Term I**	**Paper**
01	Concept of Continental Drift theory.	**MJ 1T**
02	Concept of Plate Tectonics	
03	Processes along different margins and resulting landforms.	
04	Concept and Types of Fold	
05	Resultant landforms of fold	
06	Origin of Earth : concept	**MJ A1** **MI 1**
07	Earth's interior structure	
08	Concept and discussion of Isostasy model.	
09	Class test	
Term II		
10	Concept and Types of Fault	MJ 1T
11	Resultant landforms of fault	
12	Concept of Sea floor spreading	
13	Evidence of sea floor spreading.	
14	Concept of continental drift theory.	**MJ A1** **MI 1**
15	Evidence and criticism of continental drift theory.	
Term III		
16	End - Semester questions discussion on selective topic of MJ1T & discussion about writing techniques	MJ 1T
17	Concept and discussion of plate tectonic theory	**MJ A1** **MI 1**
18	Processes along different margins and resulting landforms.	
19	End - Semester questions discussion on selective topic of MjA1 & MI 1 discussion about writing techniques	
20	Class test on selective topics	

Syllabus allotted for practical classes	MJ 1P: Geological succession and geological history through construction of geological section on Homoclinal structure.	
Lecture No.	**Term I**	**Paper**
01	Discuss about the concept of Geological succession	MJ 1P
02	Concept of geological history through construction of geological section	
03	Discuss about homoclinal structure	
04	drawing of geological map on homoclinal structure.	
	Term II	
05	Practice of geological map	MJ 1P
06	Class test	
07	Doubt clear of different problem facing in the time of drawing	
	Term III	
08	End - Semester questions discussion on diagrammatic representation of data.	MJ 1P

Semester-III		
No of Classes (Hour) allotted per week: 02 (C5+C6T+C7T+SEC1T, C6P) *****Each Lecture carried 01 Hour*****		
Syllabus allotted for theory classes	**C5T: Climatology** 1.Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences. 2. Greenhouse effect and importance of ozone layer. 3. Climatic classification after Köppen, Thornthwaite **C6T:** Statistical Methods in Geography 1. Regression (linear and non-linear) and time series analysis (moving average) **C7T:** Geography of India 1. Distribution of population by race, caste, religion, language, tribes and their correlates 2. Agricultural regions. Green revolution and its consequences 3. Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, gas; 4. Regional Problem: Darjeeling Hills **SEC1T:** Coastal Management 1. Components of a coastal zone. Coastal morphodynamic variables and their role in evolution of coastal forms.	
Lecture No.	**Term I**	**Paper**
01	Concept of horizontal and vertical distribution of temperature.	**C5T**
02	Concept and types of Inversion of temperature	
03	Greenhouse effect and importance of ozone layer.	
04	causes and consequences of temperature inversion.	
05	Concept of race, caste, religion, language	**C7T**
06	Distribution of population by race, caste, religion, language, tribes and their correlates	
07	Agricultural regions.	
08	Green revolution and its consequences	

09	Concept of Regression (linear and non-linear) and time series analysis (moving average)	**C6T**
10	Concept of time series analysis (moving average)	
11	Concept of Components of a coastal zone	**SEC2T**
12	Coastal morphodynamic variables. and their role in evolution of coastal forms.	
13	Coastal morphodynamic variables and their role in evolution of coastal forms.	
14	Class test on selective topics	**C5T, C6T C7T& SEC1T**
	Term II	
15	Climatic classification after Köppen,	**C5T**
16	Climatic classification after Thornthwaite	
17	Concept of Mineral and power resources	**C7T**
18	distribution and utilisation of iron ore, coal,	
19	distribution and utilisation of petroleum, gas;	
20	Class test on selective topic	**C5T, C7T**
	Term III	
21	Regional Problem: Darjeeling Hills	**C7T**
22	Revision class over C7T and doubt clearance	
23	Questions discussion	
24	Revision class over C6T and doubt clearance	**C6T**
25	Revision class over C5T and doubt clearance	**C5T**
26	Revision class over SEC1T and doubt clearance	**SEC1T**
27	End - Semester questions discussion on selective topic of C8T, C9T, C10T, SEC2T & discussion about writing techniques	**C5T, C6T, C7T & SEC1T**
Syllabus allotted for practical classes	**C6 P:** 1. Histograms and frequency curve would be prepared on the dataset.	
Lecture No.	**Term I**	
1.	Concept and drawing of histogram	**C6P**
	Term II	
2.	Concept and drawing of frequency curve	
	Term III	
3.	Revision classes	
	Semester-V	
	No of Classes (Hour) allotted per week: 06 (C11T+C12T+DSE1T+DSE2T) *****Each Lecture carried 01 Hour*****	

Syllabus allotted for theory classes	**C11T:** Field Work and Research Methodology 1. Fieldwork in Geographical studies – Role and significance. Selection of study area and objectives. Pre-field preparations. Ethics of fieldwork 2. Field techniques and tools: Observation (participant, non participant), questionnaires (open, closed, structured, non-structured). Interview with special reverence to focused group discussions. **C12T** Remote Sensing and GIS 1. GIS data structures: types (spatial and non-spatial), raster and vector 2. Principles of preparing attribute tables, data manipulation and overlay analysis **DSE 1T:** Hydrology and Oceanography 1. Run off: controlling factors. Infiltration and evapotranspiration. Run off cycle 2. Drainage basin as a hydrological unit. Principles of water harvesting and watershed management 3. Air-Sea interactions, ocean circulation, wave and tide. **DSE 2T:** Resource Geography 1. Natural Resources: Concept and classification 2. Approaches to Resource Utilization: Utilitarian, Conservational, Community based adaptive	
Lecture No.	**Term I**	**Paper**
01	Run off: controlling factors	**DSE1T**
02	Infiltration and evapotranspiration	
03	Run off cycle	
04	Drainage basin as a hydrological unit.	
05	Principles of water harvesting and watershed management	
06	Natural Resources: Concept	**DSE2T**
07	Natural Resources: classification	
08	Doubt clearance	
09	Fieldwork in Geographical studies – Role and significance	**C11T**
10	Selection of study area and objectives.	
11	Pre-field preparations.	
12	Ethics of fieldwork	
13	Fieldwork in Geographical studies with suitable examples.	
14	GIS data structures: concept	**CC12T**
15	GIS data structures: types (spatial and non-spatial)	
16	GIS data structures: raster and vector	
	Term II	
17	Air-Sea interactions	**DSE 1T**
18	ocean circulation	
19	Approaches to Resource Utilization: Utilitarian	DSE2T
20	Conservational, Community based adaptive	
21	Field techniques and tools	**C11T**
22	Observation method (participant, non participant)	

23	questionnaires (open, closed)	
24	questionnaires (structured, non-structured).	
25	Principles of preparing attribute tables,	**C12T**
26	data manipulation	
Term III		
26	Concept of wave	**DSE1T**
27	Tides	
28	Doubt clearance on selective topics and revision	
29	End - Semester questions discussion on selective topic of DSE1T, & discussion about writing techniques	
30	Class test	DSE2T
31	Interview with special reverence to focused group discussions	CC11
32	End - Semester questions discussion on selective topic of DSE3T, DSE4T & discussion about writing techniques	**DSE1T & DSE2T CC11, CC12**
Syllabus allotted for practical classes	**C11P:** Research Methodology and Field Work Lab	
Lecture No.	**Term I**	**Paper**
01	Pre field work	**C14P**
02	Preparation of questionnaire	
03	Field work and data collection	
04	Data tabulation	
05	Data tabulation	
Term II		
06	Tabulation and calculation	**C14P**
07	Graphical representation of field data	
08	Map making depends on field survey data	
Term III		
09	Analysis and interpretation	**C14P**
10	Analysis and interpretation	
11	Analysis and interpretation	

Teaching Plan

Department of Geography

Session: 2023-24

Odd Semester

Term I: From commencement of class to 1st Internal Assessment

Term II: 1st Internal Assessment to 2nd Internal Assessment

Term III: 2nd Internal Assessment to End Semester Exam

Teaching Plan: 2023-24 (Odd Semester)

Mukul Maity
Dept. of Geography

Semester-I		
No of Classes (Hour) allotted per week: 03 *****Each Lecture carried 01 Hour*****		
Syllabus allotted for theory classes	**MJ-1: Geotectonics and Geomorphology (Theory)** 1. Structural impact on landforms: Drainage and landform development on Horizontal, Homoclinal, Folded and Faulted structure **MJ A1/B1T: Fundamentals of Earth System Science** 1. Hydrology and Oceanography: Hydrological Cycle. Hydrological Parameters: Run off, Infiltration and evapotranspiration. Occurrence and storage of Groundwater. Major relief features of the ocean floor: Pacific, Atlantic and Indian Ocean. Formation of coral reefs. Distribution of Salinity and Temperature in Pacific, Atlantic and Indian Ocean. 2. Soil Geography: Factors or soil formation. Soil profile development in Lateritic, Podzol and Chernozem soils. Physical and chemical properties: soil texture, structure, pH, organic matter and NPK. Principles of soil classification: Genetic and USDA	
Lecture No.	**Term I**	**Paper**
01	Concept of Geomorphology and Geotectonic	**MJ-1**
02	General idea about Landforms	
03	Detailed study about structural impact on landforms	
04	Landform development factors on Horizontal structure	
05	Development of drainage pattern over Horizontal structure	
06	Landform evolution over Horizontal structure	
07	Landform development factors on Homoclinal structure	
08	Development of drainage pattern over Homoclinal structure	
09	Landform evolution over Homoclinal structure	
10	Visualization of different Horizontal and Homoclinal landforms by using ICT tool	
11	Doubt clearance on selective topics	
12	Class test on selective topics	
13	Concept about Hydrology and Oceanography	**MJ A1/B1T**
14	Details study about Hydrological Cycle	
15	Hydrological Parameters: Run off, Infiltration	
16	Hydrological Parameters: Evaporation & evapotranspiration.	
17	Occurrence and storage of Groundwater.	
18	Major relief features of the ocean floor: Pacific, Atlantic and Indian Ocean.	
19	Formation of coral reefs and related theory	
20	Distribution of Salinity and Temperature in Pacific, Atlantic and Indian Ocean.	
21	Doubt clearance on selective topics	
22	Class test on selective topics	
Term II		
23	Landform development factors on Folded structure	**MJ-1**
24	Development of drainage pattern over Folded structure	
25	Landform evolution over Folded structure	
26	Visualization of different Folded landforms by using ICT tool	
27	Doubt clearance on selective topics	
28	Concept development about Soil Geography	**MJ A1/B1T**
29	Factors or soil formation.	
30	Soil profile development in Lateritic, Podzol and Chernozem soils.	

31	Physical properties: soil texture, structure	
32	Doubt clearance on selective topics	
	Term III	
33	Landform development factors on Faulted structure	**MJ-1**
34	Development of drainage pattern over Faulted structure	
35	Landform evolution over Faulted structure	
36	Visualization of different Faulted landforms by using ICT tool	
37	Doubt clearance on selective topics	
38	End - Semester questions discussion on selective topic of MJ-1 & discussion about writing techniques	
39	Chemical properties: pH, organic matter and NPK	**MJ A1/B1T**
40	Principles of soil classification: Genetic	
41	Principles of soil classification: USDA	
42	End - Semester questions discussion on selective topic of MJ A1/B1T & discussion about writing techniques	
Syllabus allotted for practical classes	**MJ-1P: Geotectonics and Geomorphology (Practical)** 1. Characteristics of Rocks and minerals and their identification. **SEC 1: Computer Basics and Applications (Practical)** 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. Making a small presentation: MS PowerPoint.	
Lecture No.	**Term I**	**Paper**
01	Discuss about computer	**SEC 1**
02	Basic application of computer	
03	Computer memory, concepts of hardware and software	
04	Operating system; running an application	
05	Doubt clearance on selective topics	
	Term II	
06	Viewing of file, folders and directories,	**SEC 1**
07	Creating and renaming of files and folders	
08	Doubt clear of different problem and practice in computer.	
	Term III	
09	Characteristics of Rocks and identifications	**MJ-1P**
10	Characteristics of minerals and their identifications	
11	Rediscussing and identification of rocks and minerals	
12	Individually practices	
13	End - Semester questions discussion	

Semester-III		
No of Classes (Hour) allotted per week: 04 ***Each Lecture carried 01 Hour***		
Syllabus allotted for theory classes	**C5T: Climatology** 1. Condensation: Process and forms. Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence. Forms of precipitation. **2.** Air mass: Typology, origin, characteristics and modification. **3.** Circulation in the atmosphere: Planetary winds, jet stream, index cycle **C6T: Statistical Methods in Geography** 1. Importance and significance of Statistics in Geography. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio), sources of data 2. Collection of data and formation of statistical tables **C7T: Geography of India** 1. Industrial development: Automobile and information technology **SEC-1T: Coastal Management** 1. Environmental impacts and management of mining, oil exploration, salt manufacturing, land reclamation and tourism.	
Lecture No.	**Term I**	**Paper**
01	Condensation: Process and forms.	**C5T**
02	Mechanism of precipitation: Bergeron-Findeisen theory	
03	Mechanism of precipitation: collision and coalescence theory	
04	Forms of precipitation	
05	Industrial development: Automobile	**C7T**
06	Importance and significance of Statistics in Geography.	**C6T**
07	Discrete and continuous data	
08	Population and samples	
09	Environmental impacts and management of mining	**SEC-1T**
Term II		
11	Air mass: Typology, origin	**C5T**
12	Air mass: characteristics and modification	
13	Scales of measurement (nominal, ordinal, interval and ratio)	**C6T**
14	Sources of data	
15	Environmental impacts and management of oil exploration	**SEC-1T**
16	Environmental impacts and management of salt manufacturing,	
17	Industrial development: information technology	**C7T**
Term III		
18	Circulation in the atmosphere: Planetary winds	**C5T**
19	Pressure Belt	
20	Jet stream	
21	Index cycle	
22	Revision class over C5T and doubt clearance	
23	Collection of data	**C6T**
24	Formation of statistical tables	
25	Environmental impacts and management of land reclamation	**SEC-1T**
26	End - Semester questions discussion on selective topic of C5T, C6T, C7T, SEC1T	**C5T, C6T, C7T & SEC1T**

Syllabus allotted for practical classes	**C6 P – Statistical Methods in Geography** 1. From the data matrix a sample set (20%) would be drawn using, random, systematic and stratified methods of sampling and locate the samples on a map with a short note on methods used.	
Lecture No.	**Term I**	**Paper**
01	Preparation of matrix table	
02	Calculation of random sampling	
03	Practice of random sampling	**C6P**
	Term II	
04	Calculation of systematic sampling	
05	Practice of systematic sampling	**C6P**
	Term III	
06	Calculation of stratified sampling	
07	Practice of stratified sampling	
08	End - Semester questions discussion on selective topic	**C6P**

Semester-V		
No of Classes (Hour) allotted per week: 04 ***Each Lecture carried 01 Hour***		
Syllabus allotted for theory classes	**C11T: Field Work and Research Methodology** 1. Defining research problem, objectives and hypothesis. Research materials and methods 2. Techniques of writing scientific reports: Preparing notes, references, bibliography, abstract and keywords **C12T: Remote Sensing and GIS** 1. Principles of GNSS positioning and waypoint collection **DSE1T: Hydrology and Oceanography** 1. Major relief features of the ocean floor: characteristics and origin according to plate tectonics. 2. Physical and chemical properties of ocean water **DSE2T: Resource Geography** 1. Sustainable Resource Development 2. Limits to Growth and Sustainable Use of Resources; Concept of Resource sharing	
Lecture No.	**Term I**	**Paper**
01	Defining research and research problem	**C11T**
02	Research objectives	
03	Research hypothesis	
04	Research materials and methods	
05	Concept about Hydrology and Oceanography	**DSE1T**
06	Major relief features of the ocean floor	
07	Characteristics and origin of major relief according to plate tectonics.	
08	Visualization of different ocean landforms by using ICT tool	
09	Sustainable Resource Development	**DSE2T**
10	Principles of GNSS	**C12T**
11	GNSS positioning and waypoint collection	
12	Doubt clearance on selective topics	
Term II		
13	Techniques of writing scientific reports	**C11T**
14	Preparing notes, references, bibliography	
15	Physical properties of ocean water	**DSE 1T**
16	Chemical properties of ocean water	
17	Limits to Growth and Sustainable Use of Resources	**DSE 2T**
18	Concept of Resource sharing	
19	Class test on selective topic	**DSE1T, C11T, DSE2T & C12T**
Term III		
20	Abstract and keywords	**C11T**
21	GNSS positioning and waypoint collection	**C12T**
22	Class test on evolution of selective topic.	**C11T, C12T, DSE1T & DSE2T**
23	Doubt clearance on selective topics and revision	
24	End - Semester questions discussion on selective topic of C11T, C12T & discussion about writing techniques	
25	End - Semester questions discussion on selective topic of DSE1T, DSE2T & discussion about writing techniques	**DSE1T & DSE2T**

Syllabus allotted for practical classes	**C12 P: Remote Sensing and GIS Lab** 1. Georeferencing of maps and images 2. Image enhancement. Preparation of reflectance libraries of LULC features across different image bands of IRS L3 or Landsat OLI data	
Lecture No.	**Term I**	**Paper**
01	Discussion about function of software QGIS	**C12P**
02	Georeferencing of maps	
03	Georeferencing of images	
04	Practice	
05	Practice	
Term II		
06	Image enhancement	**C12P**
07	Preparation of reflectance libraries of LULC features across different image bands of IRS L3 or Landsat OLI data	
08	Practice	
Term III		
09	Practice	**C12P**
10	Practice	
11	Instruction for arrangement of practical work book	

Teaching Plan

Department of Geography

Session: 2023-24

Odd Semester

Term I: From commencement of class to 1st Internal Assessment

Term II: 1st Internal Assessment to 2nd Internal Assessment

Term III: 2nd Internal Assessment to End Semester Exam

Teaching Plan: 2023-24(Odd Semester)
Dinabandhu Patra
Dept. of Geography

Semester-I		
No of Classes (Hour) allotted per week: 02 *****Each lecture carried 01 Hour*****		
Syllabus allotted for theory classes	**MJ-1T: Geotectonics and Geomorphology (Theory)** 1. Models of landscape evolution: Views of Davis, Penck, King and Hack **MJ A1/B1: Fundamentals of Earth System Science** Geomorphology: Working of processes and landforms developed by weathering, mass wasting, river, glacier and wind. Landscape evolution models of Davis, Penck, King and Hack	
Lecture No.	**Term I**	**Paper**
01	Introduction about normal cycle of erosion, Davis's assumption, principle	**MJ1T**
02	Discuss about Davis's Model of landform evolution with criticism	
03	Discuss about Penck's Model of landform evolution with criticism	
04	Weathering process and types	**MJ A1**
05	Process of Mass wasting	
06	Morphological process and erosional landform by river	
07	Morphological process and depositional landform by river	
08	Discuss about Davis's Model of landform evolution with criticism	
09	Discuss about Penck's Model of landform evolution with criticism	
Term II		
10	Discuss about King's Model of landform evolution with criticism	**MJ1T**
11	Morphological process and erosional landform by Glacier	**MJ A1**
12	Morphological process and depositional landform by Glacier	
13	Morphological process and erosional landform by wind	
14	Morphological process and depositional landform by wind	
15	Discuss about King's Model of landform evolution with criticism	
Term III		
16	Discuss about Hack's Model of landform evolution with criticism	**MJ1T**
17	Discuss about Hack's Model of landform evolution with criticism	**MJ A1**
18	Doubt clearance on selective topics	**MJ1T**
19	Doubt clearance on selective topics	**MJ A1**
20	End - Semester questions discussion on selective topic of MJ1T & Discussion about writing techniques	**MJ1T**
21	End - Semester questions discussion on selective topic of MJ A1 & Discussion about writing techniques	**MJ A1**
22	Class test on selective topics to prepare final exam	**MJ1T & MJ A1**
Syllabus allotted for practical classes	**MJ-1P: Geotectonics and Geomorphology (Practical)** 1. Geological Maps: Understanding topography, structure, relation between topography and structure, geological succession and geological history through construction of geological section on faulted Structure **SEC 1: Computer Basics and Applications (Practical)** 1. Understanding word processing.	

	2. Using spreadsheet: basics of spreadsheet; manipulation of cells; formulas and functions; editing of spreadsheet, printing of spreadsheet. 3. Concept of internet; application of internet; World Wide Web; email.	
Lecture No.	**Term I**	**Paper**
01	Basic discussion about the concept of Geological map	**MJ-1P**
02	Detail discussion about the topography, structure, relation between topography and structure	
03	Understanding geological succession and geological history	
04	Drawing Geological map on faulted Structure	
05	Understanding basic word processing	**SEC 1**
06	Word processing and different trick and techniques	
07	Basics of spreadsheet and manipulation of cells editing of spreadsheet, printing of spreadsheet.	
08	Use of formulas and functions in Spreadsheet, use of Pivot Table and AI	
Term II		
09	Practice of Geological map on faulted Structure	**MJ-1P**
10	Editing of spreadsheet and Printing of spreadsheet	
11	Giving the concept of internet and about its application	**SEC 1**
12	Discussion on World Wide Web	
13	Discuss the email process	
Term III		
14	Revision class over SEC-1 and doubt clearance	**MJ-1P**
15	Revision class over SEC-1 and doubt clearance	**SEC 1**

Semester-III		
No of Classes (Hour) allotted per week: 01 (C5T+C6T+C7T+SEC1T+C6P) ***Each lecture carried 01 Hour***		
Syllabus allotted for theory classes	**C5T: Climatology** 1. Fronts: warm and cold; frontogenesis and frontolysis. 2. Weather: stability and instability; barotropic and baroclinic conditions. 3. Climatic classification after Oliver **C6T: Statistical Methods in Geography** 1. Sampling: Need, types, and significance and methods of random sampling 2. Theoretical distribution: frequency, cumulative frequency, normal and probability **C7T: Geography of West Bengal** 1. Physical perspectives: Physiographic divisions, forest and water resources 2. Population: Growth, distribution and human development 3. Regional Problem: Jangalmahal and Sundarban **SEC1T: Coastal Management** 1. Principles of Coastal Zone Management.Exclusive Economic Zone and Coastal Regulation Zones with reference to India.	
Lecture No.	**Term I**	**Paper**
01	Providing the concepts of Weather fronts and basic concepts of Air masses	**C5T**
02	Discuss about the types of Air masses, Characteristics, and formation factors	
03	Discussion about the mechanism of frontogenesis and frontolysis	
04	Discussion about warm and cold fronts	
05	Give an idea about Sampling with its necessity and significance and inform about types of Probability and Non probability sampling	**C6T**
06	Discussion the characteristics and method of different Sampling in Geographical research	
07	Detail discussion of methods of all types of random sampling	
08	Discuss about West Bengal's Physiographic divisions: Northern Mountain, Rarh Region and western plateau	**C7T**
09	Discuss about West Bengal's Plain region and delta	
10	Talk on West Bengal's Forest division and forest resources	
11	Talk on West Bengal's Water resources	
12	Introduction to Indian and West Bengal Coast, basic coastal morphodynamic and its importance from different angle	**SEC-1T**
13	Exclusive Economic Zone and different coastal regulation for India and other foreign countries also other principles of Management	
14	Doubt clearance on selected topics	**C5T, C6T, C7T & SEC-1**
Term II		
15	Detail discussion about the science behind atmospheric stability and instability	**C5T**
16	Discussion on barotropic and baroclinic conditions	
17	Concept of Theoretical distribution, basic concept frequency	**C6T**
18	Discussion about different parts of frequency distribution table and example	
19	Cumulative frequency and graphical representation	
20	Concept of probability and frequency	
21	West Bengal's population growth asper last census and Population distribution of different districts and its determinants	**C7T**
22	Concept of different HDI indicators and discussion about West Bengal's human development	
23	Importance of Coastal regulation zone (CRZ), principle of CRZ, violation of	

	CRZ rules in India, Changes in CRZ rule by different commission	**SEC-1**
24	Characteristics of different Coastal regulation Zone with forbidden and permissible work	
	Term III	
25	Discussion on Climatic classification after Oliver	**C5T**
26	Practice of frequency distribution normally and by probability with various example	**C6T**
27	Addressing Jangalmahal as Problematic region	**C7T**
28	Addressing Sundarban as Problematic region	
29	Revision class over SEC-1 and doubt clearance	**SEC-1**
30	End - Semester questions discussion on selective topic and discussion about writing techniques	**C5T, C6T, C7T, SEC-1**
Syllabus allotted for practical classes	**C6 P – Statistical Methods in Geography** 1. Construction of data matrix with each row representing an aerial unit (districts / blocks / *mouzas* / towns) and corresponding columns of relevant attributes.	
Lecture No.	**Term I**	**Paper**
01	Concept of variable, choose of relevant attribute, data collection procedure and use for matrix table	
	Term II	
02	Construct a data matrix where row representing an aerial unit and corresponding columns of relevant attributes	**C6P**
	Term III	
03	Construct data matrix table on various data	**C6P**
	Semester-V	
	No of Classes (Hour) allotted per week: 07 ***(*C11T+C12T+DSE1T+DSE2T+C11P+C12P)*** *****Each lecture carried 01 Hour*****	
Syllabus allotted for theory classes	**C11T: Field Work and Research Methodology** 1. Literature review and formulation of research design 2. Positioning and collection of samples. Preparation of inventory from field data. Post-field tasks. **C12T: Remote Sensing and GIS** 1. Transferring of waypoints to GIS. Area and length calculations from GNSS data. **DSE-1: Hydrology and Oceanography** 1. Systems approach in hydrology. Global hydrological cycle: Its physical and biological Role. 2. Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement. 3. Water mass, T–S diagram **DSE-2: Resource Geography** 1. Distribution, Utilisation, Problems and Management of Non-Metallic Mineral Resources: Limestone, Mica, Gypsum	
Lecture No.	**Term I**	**Paper**
01	Basic concept, method of Literature review	**C11T**
02	Caution about Literature review, Characteristics of good literature review, Concept of Systematic review and Meta analysis	
03	Practical demonstration of Literature review from various research article	
04	Discuss about different types of research design	
05	Formulation of research design with example	
06	Give idea about GNSS and handheld GPS	
07	Field book preparation and way point collection by GPS device	

08	Transferring of waypoints from GPS device to computer that installed with a GIS software	**C12T**
09	Calculation of Area and Length by the help GNSS data	
10	Discuss about systems approach in hydrology	**DSE1T**
11	Discussion on Global hydrological cycle	
12	Global hydrological cycle and its physical and biological role	
13	Water mass	
14	T–S diagram	
15	Distribution, utilization of Limestone mineral	**DSE2T**
16	Problems and management of Limestone mineral	
17	Class test on selective topic	**C11T & DSE1T**
18	Class test on selective topic	**C12T & DSE2T**
Lecture No.	**Term II**	**Paper**
19	Concept of Sample, Filed positioning and step for data collection	**C11T**
20	Talking about different sample collection techniques	
21	Giving idea about inventories and its different parts.	
22	Preparation of sample inventory on existed data	
23	Preparation of inventory on field data	
24	Plotting of waypoints data on paper	**C12T**
25	Plotting of waypoints data on GIS and layout	
26	Basic idea about groundwater occurrence and storage	**DSE1T**
27	Factors controlling ground water recharge, discharge	
28	Factors controlling of ground water movement.	
29	Distribution, utilization of Mica, mineral	**DSE2T**
31	Problems and management of Mica mineral	
32	Doubt clearance on selected topics	**C11T, C12T, DSE1T & DSE2T**
33	Class test on selective topic	**C11T & DSE1T**
34	Class test on selective topic	**C12T & DSE2T**
Lecture No.	**Term III**	**Paper**
35	Discussion about different techniques of data processing and analysis	**C11T**
36	Different process related to post-field tasks	
37	Revision class over C11T and doubt clearance	
38	Revision class over C12T and doubt clearance	**C12T**
39	Revision class over DSE1T and doubt clearance	**DSE1T**
40	Distribution, utilization of Gypsum, mineral	**DSE2T**
41	Problems and management of Gypsum mineral	
42	Revision class over DSE2T and doubt clearance	
43	Doubt clearance on selected topics	**C11T, C12T, DSE1T & DSE2T**
44	End - Semester questions discussion on selective topic of C11T, C12T & Discussion about writing techniques	**C11T & C12T**
45	End - Semester questions discussion on selective topic of DSE1T, DSE2T & discussion about writing techniques	**DSE1T & DSE2T**
Syllabus	**C11P: Research Methodology and Field Work Lab**	

allotted for practical classes	**C12 P: Remote Sensing and GIS Lab** 1. Image classification, post-classification analysis and class editing 2. Digitisation of features. Data attachment, overlay and preparation ofthematic map	
Lecture No.	**Term I**	**Paper**
01	Pre field work	**C11P**
02	Preparation of questionnaire	
03	Instruction for physical survey	
04	Field work and data collection	
05	Data sorting and tabulation	
06	Data tabulation	
07	Giving idea about digital image and collection of LANDSAT & LISS-III data	**C12P**
08	Image classification in Supervised and unsupervised method in QGIS software	
09	Class Editing and layout	
10	LULC map preparation and area calculation of under each class	
Lecture No.	**Term II**	**Paper**
11	Tabulation and calculation	**C11P**
12	Graphical representation of field data	
13	Map making depends on field survey data	
14	Map making based on GIS	
15	Digitisation of images and maps by point and line	**C12P**
16	Digitisation of images and maps by polygon	
17	Data attachment with attribute table and editing of attribute table	
18	Data representation (single data choropleth and cartogram)	
19	Data representation (bivariate data)	
20	Overlay analysis and preparation of thematic map	
Lecture No.	**Term III**	**Paper**
21	Analysis and interpretation	**C11P**
22	Analysis and interpretation	
23	Instruction for field book arrangement	
24	Practice class for Digitisation	**C12P**
25	Practice class for Image classification	
26	Practice class for Overlay analysis and thematic map preparation	