

**LESSON PLAN**  
**SESSION 2018-2019**

**DEPARTMENT OF GEOGRAPHY**  
**GEOGRAPHY HONOURS**

**LESSON PLAN FOR 1<sup>st</sup> SEMESTER**  
**JULY-DECEMBER, 2018**

**DISTRIBUTION OF SYLLABUS FOR FIRST SEMESTER**

COURSE CODE	TITLE	CREDIT	MARKS	ALLOTTED CLASSES
GEOACOR01T	GEOTECTONICS AND GEOMORPHOLOGY	4	50	60
GEOACOR01P		2	25	60
GEOACOR02T	CARTOGRAPHIC TECHNIQUES	4	50	60
GEOACOR02P		2	25	60

**GEO-TECTONICS AND GEOMORPHOLOGY (GEOACOR01T)**

**Course outcome:**

1. Students will be able to distinguish between endogenic and exogenic forces
2. Students will realize the concept of Isostasy based on equilibrium concept. Students will be able to correlate between different types of geomorphic process and resultant landforms as a process response system.
3. Students will be able to identify the landforms as a geoheritage.
4. Students will be able to identify the appropriate landform for certain human activities.
5. Students will be able to interpret the landforms as a tourist guide.

**COURSE COORDINATOR: Dr. Rajat Halder (RH)**  
**Teachers: Dr. Aditi Matilal (AM), Dr. Rajat Halder**

GEOACOR01T				
MONTH	HOURS	TEACHER	TOPIC	REMARKS
<b>UNIT-1 (GEO-TECTONIC)</b>				
JULY	3	AM	Earth's tectonic structure	Mode of teaching: offline(PowerPoint presentations are used occasionally or wherever necessary)
	3		Structural evolution : concept and process	
	2		Geological time scale	
	2		Revision class	
AUGUST	3	AM	Study of earth's structural evolution in the perspective of geological time scale	
	3		Earth's interior structure	
	3		Layers of earth's interior in detail	
	1		INTERNAL ASSESSMENT	

	4	AM	Seismology: Concept and its association with earth's interior.
SEPTEMBER	6		Plate tectonic: Basic concept, characteristics, significance
	8		Classification of plate boundaries and associated landforms
OCTOBER	3		Hotspots and vulcanicity.
<b>UNIT-II (GEOMORPHOLOGY)</b>			
JULY	3	RH	Degradational Processes: Concept, causes and significance
	3		Weathering: Concept, Definition, classification and impact of landforms
	4		Mechanical Weathering: classification and impact of landforms
	4		Chemical Weathering: classification and impact of landforms
	1		REVISION
AUGUST	1		INTERNAL ASSESSMENT
	5		Mass-wasting: Concept, definition, categorization and impact of landforms
	6		Development of river network and landforms on folded structure
	2		Glacier: Conceptual framework, classification
	5		Glacier: erosional landforms
SEPTEMBER	5		Glacier: depositional landforms
	4		Glacio-fluvial processes and landforms
OCTOBER	9		Wind: Conceptual framework, classification, erosional and depositional landforms
JULY	14		Fluvial action: Conceptual framework with special reference to erosional landforms
AUGUST	7	Fluvial action: depositional landforms	
	7	Fluvio-aeolian processes and landforms	
	6	Cycle of erosion: Davis	
	5	Model of landscape evolution: Hack	
SEPTEMBER	3	Revision	
	1	INTERNAL ASSESSMENT	

### **GEO-TECTONICS AND GEOMORPHOLOGY (GEOACOR01P)**

#### **Course Outcome:**

1. Students will be able to identify the rocks and minerals.
2. Students will be able to use the rocks and minerals based on their character.
3. From the geological map, the students will be able to establish the correlation between the structure and landform
4. Students will be able to identify the appropriate landform for certain human activities and interpret the landforms as a tourist guide.
5. Know about the basic characteristics of rocks and minerals and method of identification.

**COURSE COORDINATOR: Dr. Rajat Halder**  
**Teachers: Dr. Rajat Halder & Susmita Halder (SH)**

<b>GEOACOR01P</b>				
MONTH	HOURS	TEACHER	TOPIC	REMARKS
NOVEMBER	8	RH	Interpretation of geological maps with unconformity and intrusions on uniclinal structure	Mode of teaching: offline(PowerPoint presentations are used occasionally or wherever necessary)
	4		PRACTICE CLASS	
	2		INTERNAL ASSESSMENT	
DECEMBER	9		Interpretation of geological maps with unconformity and intrusions On folded structure	

	2		PRACTICE CLASS	
	2		INTERNAL ASSESSMENT	
SEPTEMBER	7	SH	Megascopic identification: Rocks: Granite, basalt, laterite, sandstone, conglomerate, slate, phyllite, schist, gneiss, marble	
	7		Megascopic identification: Minerals: bauxite, calcite, chalcopyrite, galena, hematite, mica, quartz, tourmaline	
	1		Revision	
	2		INTERNAL ASSESSMENT	

### CARTOGRAPHIC TECHNIQUES (GEOACOR02T)

#### Course Outcome:

1. Students will get knowledge about projection, map and map making process.
2. Students will be able to apply the concept of scale according to their character.
3. Achieve hand hold knowledge about the scale, projection construction.
4. Understand about the differences among the scales as well as among the projections and also their applicability.
5. The concept of drainage basin delineation, relative relief, slope map, stream ordering, will help student for drainage basin management.

**COURSE COORDINATOR: Dr. Rajat Halder**  
**Teachers: Susmita Halder & Pinki Ghosh (PG)**

GEOACOR02T				
MONTH	HOURS	TEACHER	TOPIC	REMARKS
OCTOBER	5	SH	Maps: Concept and classification	Mode of teaching: offline(PowerPoint presentations are used occasionally or wherever necessary)
	5		Components of Map	
NOVEMBER	3	SH	Scale: Concept and application	
	1		Classification of scale	
	3		Plain scale : Concept, properties, advantages, uses, construction principles	
	2		Comparative scale: Concept, properties, advantages, uses, construction principles	
	3		Diagonal scale: Concept, properties, advantages, uses, construction principles	
	1		REVISION	
	1		INTERNAL ASSESSMENT	
JULY	3	PG	Survey of India topographical maps: concept, margin information	
	3		Reference scheme of old and open series	
AUGUST	2		Coordinate system: concept and classification	
	2		Polar coordinate system	
	2		Rectangular coordinate system	
	2		Concept of generating globe	
	1		INTERNAL ASSESSMENT	
	2		UTM projection: concept and characteristics	
	1		Map projection: Definition, classification, properties and uses.	
SEPTEMBER	8		Map projection: Definition, classification, properties and uses(continued)	
	1		Revision	
	1	INTERNAL ASSESSMENT		

## CARTOGRAPHIC TECHNIQUES (GEOACOR02P)

### Course Outcome:

1. Students will get hand hold knowledge about the scale, projection construction.
2. Students will understand about the differences among the scales as well as among the projections and also their applicability.
3. The concept of drainage basin delineation, relative relief, slope map, stream ordering, will help student for drainage basin management.
4. Know about map making process through different projection.
5. Student will be able inculcated aesthetic values within them themselves.

**COURSE COORDINATOR: Dr. Aditi Matilal**

**Teachers: Dr. Aditi Matilal & Susmita Halder**

<b>GEOACOR02P</b>					
MONTH	HOURS	TEACHER	TOPIC	REMARKS	
DECEMBER	4	SH	Graphical construction of Plain scale	Mode of teaching: offline(PowerPoint presentations are used occasionally or wherever necessary)	
	4		Graphical construction of Comparative scale		
	4		Graphical construction of Diagonal scale		
	2		Practice class		
OCTOBER	6		Polar-zenithal Stereographic Projection: calculation & graphical construction		
NOVEMBER	4		Bonne's cylindrical equal area projection: calculation & graphical construction		
DECEMBER	4		Mercator's projection: calculation & graphical construction		
	2		INTERNAL ASSESSMENT		
NOVEMBER	3		AM		Delineation of drainage basin from Survey of India topographical map
	3				Relative relief map: Calculation, diagrammatic representation & interpretation
	3	Average slope map: Calculation, diagrammatic representation & interpretation			
DECEMBER	3	Stream ordering (Strahler): Calculation, diagrammatic representation & interpretation			
	3	Transect Chart: correlation between physical and cultural features from Survey of India topographical maps.			
	3	Practice class			

**LESSON PLAN**  
**2<sup>nd</sup> SEMESTER (JAN-JUNE 2019)**

**HUMAN GEOGRAPHY (GEOACOR03T)**

**Course Outcome:**

1. Student will be able to interpret about the impact of environment on human society.
2. In future student will be able to plan of new urban site based on urban morphology.
3. Student will be able to scientific discussion about the heterogeneity of races, ethnicity etc.
4. Student will be able to realize about the evolution of human society therefore be able to show respect every human society.
5. Student will be able to find out the proper location for a new settlement.

**Course Coordinator: Dr. Aditi Matilal**  
**Teacher: Dr. Aditi Matilal, Dr. Susmita Halder**

**UNIT-1 (NATURE AND PRINCIPLES)**

MONTH	NO OF CLASSES	NAME OF TEACHER	TOPIC	REMARKS
January	3	AM	Human Geography: Concepts. Nature and scope	Mode of teaching: offline (PowerPoint presentations are used occasionally or wherever necessary)
	2		Recent trends in Human Geography	
	2		Elements of Human Geography	
	2		Approaches to human geography	
February	2		Resource and human geography	
	2		Locational approach in human geography	
	2		Landscape approach in human geography	
	2		Environmental approach in human geography	
	4		Concept of race: Definition, classification	
March	3		Races of India	
	2		Ethnicity: concept, definition, categorization	
	3		Space in human geography	
	3		Society: concept, nature and characteristics	
	4		Cultural regions of India	
April	3		Linguistic regions of India	
	5		Religion: Concept, origin, characteristics	

**UNIT- 2 (SOCIETY, DEMOGRAPHY AND EKISTICS)**

MONTH	NO OF CLASSES	NAME OF TEACHER	TOPIC	REMARKS
January	2	S.H	Evolution of human society	Mode of teaching: offline
	3		Hunting and food gathering: Characteristics, evolution	

	3		Pastoral nomadism: evolution, characteristics, locational attributes	(PowerPoint presentations are used occasionally or wherever necessary)
	1		Characteristics of subsistence farming	
	3		Nature of industrial society: evolution, nature and features	
February	3		Human adaptation to environment : Eskimo	
	3		Human adaptation to environment : Masai	
	3		Human adaptation to environment : Maori	
	3		Growth of population: Controlling factors	
	4		Distribution of population: nature and influencing factors	
March	3		Population composition	
	4		Demographic transition	
	3		Population resource regions: Concept and classification	
	3		Rural settlements: Types and patterns	
	7		Morphology or urban settlements: Critical analysis of settlement theories of Burgess, Hoyt and C.D. Harris and E. Ullman	
	1		Revision	
	1		Internal assessment	

### **CARTOGRAMS AND THEMATIC MAPPING (GEOACOR04T)**

#### **Course Outcome**

1. Students will get a clear concept about the cartograms and thematic mapping. And also be able to differentiate them.
2. Student will get a theoretical concept about the surveying and also survey equipments.
3. Know about representation the statistical data into a graphical picture. This multi dimensional creativity will create an aesthetic value in them.
4. Learn hand holds training about prismatic and Dumpy Level survey. These will help them in higher studies during the field work.
5. Students will learn to describe the land use and land cover pattern from different topographical maps.

**Course Coordinator: Dr. Rajat Halder**  
**Teachers: Dr. Rajat Halder, Pinki Ghosh**

MONTH	NO OF CLASSES	NAME OF TEACHER	TOPIC	REMARKS
January	3	RH	Concepts of rounding	Mode of teaching: offline (PowerPoint
	3		Concepts of scientific notation	
	4		Logarithm: concept and uses	
February	4		Anti-logarithm: concept and uses	

	5		Natural and log scales	presentations are used occasionally or wherever necessary)
	1		Revision and practice	
	1		Internal assessment	
January	7	PG	Diagrammatic data representation: Line graph: concept, uses, advantages and disadvantages, construction principles	
February	5		Bar graph: Concept, classification, uses, advantages and disadvantages	
	5		Isopleths: Concepts, construction principles, advantages and disadvantages	
March	6		Representation of area data- Dots and sphere: Concepts, construction principles, advantages and disadvantages	
	5		Proportional Circles: Concepts, construction principles, advantages and disadvantages	
April	5		Choropleth: Concepts, construction principles, advantages and disadvantages	
	1		Preparation and interpretation of land-use and land cover maps	
	1		Preparation and interpretation of socio-economic maps	
May	1		Revision	
	1		Internal Assessment	
March	4	R.H	Bearing: Magnetic and true	
	4		Whole-circle and reduced bearing	
	4		Basic concept of surveying and survey equipment	
	4		Prismatic Compass: Instrument parts and functioning, uses, significance	
	4		Dumpy level: Instrument parts and functioning, uses, significance	
	4		Theodolite: Instrument parts and functioning, uses, significance	

### **CARTOGRAMS AND THEMATIC MAPPING (GEOACOR04P)**

#### **Course Outcome**

1. Student will able to represent the statistical data into a graphical picture. This multi dimensional creativity will create an aesthetic value in them.
2. Students will get hand hold training about prismatic and Dumpy Level survey. These will help them in higher studies during the field work.
3. Know about representation the statistical data into a graphical picture. This multi dimensional creativity will create an aesthetic value in them.
4. Learn hand holds training about prismatic and Dumpy Level survey. These will help them in higher studies during the field work.
5. Students will learn to describe the land use and land cover pattern from different topographical maps.

**Course Coordinator: Dr. Aditi Matilal**

**Teachers: Dr. Aditi Matilal, Susmita Halder, Dr. Rajat Halder**

MONTH	NO OF CLASSES	NAME OF TEACHER	TOPIC	REMARKS
April	1	AM	Thematic mapping: Concept and principles	Mode of teaching: offline (PowerPoint presentations are used occasionally or wherever necessary)
	5		Choropleth map: Construction and interpretation	
	2		Practice	
May	4		Dots and spheres: Construction and interpretation	
May	4	S.H	Proportional pie-diagrams: Construction and interpretation	
	2		Internal Assessment	
April	8	R.H	Traverse survey using prismatic compass: Data collection, tabulation, calculation and diagrammatic representation	
	10		Profile survey using dumpy level: Data collection, tabulation, calculation and diagrammatic representation	
May	6		Practice class	

**LESSON PLAN**  
**GEOGRAPHY HONOURS (1+1+1 SYSTEM)**

**PART-11**

**PAPER-III**  
**CLIMATOLOGY, SOIL GEOGRAPHY & BIOGEOGRAPHY**

**Course Outcome**

1. Describe the nature, composition and layering of the atmosphere.
2. Identify the factors affecting insolation & heat budget of the atmosphere.
3. Identify the factors affecting horizontal and vertical distribution of temperature with emphasis on inversion of temperature
4. Describe greenhouse effect on global environment, importance of ozone layer.
5. Explain the planetary wind system with special reference to tri-cellular model, Rossby Waves, jet Streams
6. Understand the genesis of monsoon and its relationship with jet Stream, el Nino and la Nina.
7. Explain the processes of condensation and mechanism of precipitation in the light of Bergereon-Fiendison and Collision- Coalescence theories
8. Understand the tropical and mid latitude cyclones
9. Classify climate after Koppen and Thornthwaite
10. Understand the processes of formation of soil, concept of zonal, azonal and intra-zonal soils, profile development of podzols, chernozems and laterites under different conditions
11. Describe the physical and chemical properties of soil



12. Classify soil genetically and taxonomically and understand principles of land classification: USDA
13. Understand definitions of biosphere and biogeography along with the concept of ecosystem, basic ecological principles, ecotone, communities, niche, succession, and habitat, ecosystem and energy, energy sources, laws of energy exchange, food chains and food web.
14. Describe the concept of Biomes with special reference to tropical rainforest, taiga, savannah, Desert, tundra and temperate grasslands.
15. Explain the concept of biodiversity and wild life conservation in India, projects and their importance, project Tiger and Man and Biosphere Programme.

**COURSE COORDINATOR: Dr. Aditi Matilal**  
**Teachers: Dr. Rajat Halder, Dr. Aditi Matilal, Susmita Halder**

Phase	Teacher	No of classes	Topic	Remarks
<b>GROUP A: CLIMATOLOGY</b>				
<b>I</b>	<b>RH</b>	1	Nature, composition and layering of the atmosphere.	Lecture series with extensive use of black board. Occasional power-point presentations are given. Unit tests will be taken for evaluation
		1	Factors affecting insolation	
		1	Heat budget of the atmosphere	
		1	Horizontal vertical distribution of temperature	
		1	Vertical distribution of temperature	
		1	Inversion of temperature	
		1	Green house effect on global environment	
		1	Importance of ozone layer.	
		5	Planetary wind system with special reference to tri-cellular model, Rossby Waves, Jet Streams	
		2	Genesis of Monsoon and its relation with Jet Stream, El Nino and La Nina.	
		2	Genesis of Monsoon and its relation with El Nino and La Nina	
		2	Processes of condensation and mechanism of precipitation: Bergereon-Fiendison	
<b>II</b>	<b>RH</b>	2	Collision- Coalescence theories.	
		5	Tropical and mid latitude cyclones	
		3	Climatic classification after Koppen	
		2	Climatic classification after Thornthwaite.	
<b>GROUP B: SOIL GEOGRAPHY</b>				
<b>I</b>	<b>SH</b>	2	Soil: Definition, factors and processes of formation.	
		1	Physical properties of soil: texture	
		1	Physical properties of soil: structure.	
		1	Physical properties of soil: colour and moisture.	
		1	Chemical properties of soil: pH and organic matter	
		1	Soil erosion: types, factors and management	

		1	Principles of soil classification: Genetic and Taxonomical – with special reference to India
		1	Principles of land classification: USDA
		1	Concept of zonal soils
		1	Concept of azonal soils
		1	Concept of intra-zonal soils
		2	Profile development under different conditions-Podzols
		2	Profile development under different conditions-Chernozem
		2	Profile development under different conditions Laterites
<b>GROUP C: BIO-GEOGRAPHY</b>			
<b>1</b>	<b>AM</b>	1	Definitions of biosphere and biogeography: Concept of ecosystem
		1	Basic ecological principles
		1	Ecotone, Communities
		1	Ecological Niche, succession, and habitat
		1	Ecosystem and energy flow: laws of energy exchange
		2	Food chains and food web and concept of Biomes
		2	Study of Tropical rainforest
		2	Study of Taiga biome
		1	Study of Savannah biome
		1	Study of Desert biome
		1	Study of Tundra biome
		1	Study of Temperate grasslands. biome
		1	Spatial distribution of world fauna
		1	Concept of Biodiversity and wildlife conservation in India
		1	Wild-life Projects and their importance
		1	Project Tiger and Man and Biosphere Programme

#### PAPER-IV

#### APPLIED GEOGRAPHICAL TECHNIQUES (PRACTICAL)

##### Course Outcome

1. Compute and construct scales and perform enlargement and reduction of map
2. Perform megascopic analysis of minerals and rocks

3. Interpret physical and cultural parameters topographical maps of Plateau region with R.F 1: 50,000 and explain the man-nature interaction over the area.
4. Represent data through cartograms and thematic mapping
5. Understand the concept, classification, constructions and suitability of projections
6. Perform traverse Survey by Prismatic Compass and levelling by Dumpy Level.

**COURSE COORDINATOR: Dr. Aditi Matilal**

**Teachers: Dr. Aditi Matilal, Susmita Halder, Dr.Rajat Halder & Pinki Ghosh**

Phase	Teacher	No of classes	Topic	Remarks
I	SH	2	Scales: Introduction and, enlargement and reduction of map	Lecture series with extensive use of black board. Occasional power-point presentations are given. Unit tests will be taken for evaluation
		2	Linear scale: Computation, diagrammatic representation	
		3	Diagonal scale: Computation, diagrammatic representation	
		2	Vernier scale : Computation, diagrammatic representation	
II	RH	2	Megascopic analysis of Rocks – Granite, Basalt, Dolerite, Shale, Sandstone, Limestone, Conglomerate, Slate, Phyllite, Schist, Marble, Quartzite, Gneiss.	
		2	Megascopic analysis of Minerals and ores – Talc, Gypsum, Calcite, Mica, Feldspar, Quartz, Chalcopryrite, Hematite, Magnetite, Bauxite, Galena	
II	AM	1	Interpretation of topographical maps of Plateau region with R.F 1: 50,000	
		1	Demarcation of drainage basin (not more than 4 <sup>th</sup> order, based on Strahler)	
		3	Construction of profiles: superimposed, projected, composite and long profile of river (length of the river not more than 10 km)	
		2	Morphometric analysis (10 X 12cm grid) : Drainage density (to be shown by isopleth)	
		2	Morphometric analysis (10 X 12cm grid) : Average slope (Wentworth's method to be shown by isopleth)	
		2	Morphometric analysis (10 X 12cm grid) : Relative Relief (to be shown by isopleth)	
		1	Morphometric analysis (10 X 12cm grid): Road density (to be shown gridwise).	
		4	Interpretation of relief, drainage and vegetation characteristics	
		3	Interpretation of settlement, transport and	

			communication systems
III	AM	13	Revision ,practice etc
II	SH	1	Cartograms and thematic mapping :Introduction
		3	Choropleth map
		3	Dots and Spheres diagram showing distribution of rural and urban population
		3	Proportional pie-diagrams representing economic data and landuse data.
		4	Projections: Concept, classification, constructions and suitability
		3	Construction and properties of Zenithal Gnomonic and Stereographic (Polar Case),
		3	Construction and properties of Bonne's projection
		3	Construction and properties of Sinusoidal projection
III	SH	3	Construction and properties of Polyconic projection
		3	Construction and properties of Cylindrical Equal Area projection
		3	Construction and properties of Mercator's Projections
		5	Revision and practice
III	RH	2	Survey: Closed traverse survey by Prismatic Compass
		3	Levelling by Dumpy Level with at least one change point
		2	Drawing of profile and determination of gradient

## **PART-III (2018-19)**

### **PAPER-V**

### **SOCIAL, POLITICAL AND REGIONAL GEOGRAPHY**

#### **Course outcome:**

1. Understand the concept of culture and its components with special emphasis on India: language, religion and ethnicity.
2. Describe the social geography of rural and urban India with special reference to caste structure, social stratification, tribes, social ecology and social space
3. Identify the forms, pattern, types, features of rural and urban settlements

4. Understand the concept of political geography with emphasis on geo-politics, frontier and boundary, cold war, bi-polarisation and uni-polarisation.
5. Understand the regional disparities in India with emphasis on causes and implications
6. Elucidate the concepts of regions; basis of regionalization with reference to India physical, economic and planning

**COURSE COORDINATOR: Dr.Rajat Halder**  
**Teachers: Dr. Aditi Matilal, Susmita Halder, Dr.Rajat Halder**

Phase	Teacher	No of classes	Topic	Remarks
<b>GROUP A: SOCIAL AND CULTURAL GEOGRAPHY</b>				
I	RH	1	Concept of culture and its components with special emphasis on India	Lecture series with extensive use of black board. Occasional power-point presentations are given. Unit tests will be taken for evaluation
		1	Concept of language, linguistic diversity in India	
		1	Concept of religion, religious diversities of India	
		1	Concept of ethnicity with special emphasis on India	
		1	Social geography of rural India:	
		1	Caste structure and social stratification	
		1	Tribes of India: Santhals and Lepcha	
		1	Urban social Geography	
		1	Social ecology	
		1	Social space	
		2	Rural settlements – its forms, site and situations	
		3	Urban settlement – morphology and hierarchy.	
<b>GROUP B: POLITICAL GEOGRAPHY</b>				
I	AM	1	Concept of Political Geography	
		1	Concept of geo-politics	
		2	concept of frontier and boundary	
		2	Concept of cold war	
		1	Bi-polarisation and unipolarisation	
		1	Political geography of India: Administrative settings of India	
		1	Problem of border states	
		2	Partition and its geo-political implications	
<b>GROUP B: REGIONAL GEOGRAPHY</b>				
I	AM	2	Concepts of regions; basis of regionalization with reference to India physical, economic and planning	
II	SH	2	Physiographic Regions of India with special reference to Kashmir Himalaya	

		2	Agricultural Region of India of India with special reference to Punjab-Haryana	
		2	Industrial Region of India with special reference to Mumbai-Pune industrial belt	
		2	Regional disparities in India: causes and implications	

**PAPER-VI**  
**PHILOSOPHY OF GEOGRAPHY AND CONTEMPORARY ISSUES**

**Course Outcome:**

1. Understand the definition, nature and evolution of Geography in the perspective of changing paradigms viz. determinism, possibilism, positivism, quantitative revolution, behaviouralism, humanistic approach, structural approach.
2. Trace the evolution of geography across different space and time from the contribution of philosophers and geographers of different ages like Aristotle, Strabo, Humboldt, Ritter, Vidal de la Blache, Carl Sauer and David Harvey etc
3. Understand the trends of natural hazards and disasters and their occurrence, causes and management in the Indian Sub-continent
4. Classify hazards and disasters and describe their environmental impact and management
5. Describe the concept of third world, development and under development with special reference to basic indicators of economic, human and gender development
6. Understand the problems of third world Poverty, Population explosion, food security and hunger, unemployment, malnutrition and child labour with emphasis on globalization and sustainable development.

**COURSE COORDINATOR: Dr. Rajat Halder**  
**Teachers: Dr. Rajat Halder, Dr. Aditi Matilal, Susmita Halder, Pinki Ghosh**

Phase	Teacher	No of classes	Topic	Remarks
<b>GROUP A: PHILOSOPHY OF GEOGRAPHY</b>				
I	AM	1	Definition and nature of Geography.	Lecture series with extensive use of black board. Occasional
		1	Selected contributors in the evolution of geographical thought- Humboldt	
		1	Selected contributors in the evolution of geographical thought-Vidal de la Blache	
II	AM	1	Selected contributors in the evolution of geographical thought-Carl Sauer	Occasional
		1	Selected contributors in the evolution of geographical thought- David Harvey	

		2	Major postulates: Determinism	power-point presentations are given. Unit tests will be taken for evaluation
		2	Major postulates: Possibilism,	
II	RH	1	Major postulates: Regional differentiation	
		1	Major postulates: time and space.	
		2	Changing approaches and methodology: Positivism,	
		2	Changing approaches and methodology: Quantitative Revolution,	
		2	Changing approaches and methodology: Welfare-Behavioural approach,	
		2	Changing approaches and methodology: radical approach	
<b>GROUP B: CONTEMPORARY ISSUES IN GEOGRAPHY</b>				
<b>Section -1: Natural hazards and their management in the Indian Sub-continent</b>				
I	SH	1	Concept of hazards and disasters: Natural, quasi-natural and man-made hazards	
		1	Concept of hazards and disasters: different approaches in hazard management	
		2	Climatic hazards: Flood – environmental impact and management	
		2	Climatic hazards: drought– environmental impact and management	
		2	Climatic hazards: cyclone mechanism– environmental impact and management	
		2	Geomorphic hazards: landslide- environmental impact and management	
		2	Geomorphic hazards: river bank erosion- environmental impact and management	
		2	Geomorphic hazards: coastal erosion -environmental impact and management	
		2	Edaphic and biotic hazards: Deforestation— environmental impact and management.	
		2	Edaphic and biotic hazards: desertification— environmental impact and management.	
		2	Edaphic and biotic hazards: loss of bio-diversity — environmental impact and management.	
II	SH	1	Concept of third world: Basic indicators of economic development	
		1	Concept of third world: human and gender development	

		2	Concept of development and under development: Basic indicators of economic development	
		2	Concept of development and under development: Human and gender development	
		1	Problems of third world – Poverty	
		1	Problems of third world –Population explosion,	
		1	Problems of third world – food security and hunger	
		1	Problems of third world - unemployment	
		1	Problems of third world –malnutrition	
		1	Problems of third world –child labour.	
		1	Concept of Globalization	
		1	Sustainable development	
		1	Problem of urbanization	

## PAPER VII

### APPLIED GEOGRAPHICAL TECHNIQUES (PRACTICAL)

#### Course Outcome:

1. Ability to draw and interpret geological maps, weather Maps (monsoon and Post Monsoon)
2. Understand the basic concepts of remote sensing and Geographical information System.
3. Ability to interpret aerial photograph and prepare aerial photo mosaics
4. Ability to geo-reference scanned maps, ascribe projection (Polyconic/ UTM), perform digitisation of point, line and polygon layers and preparation of thematic maps from attached data.
5. Preparation of field report over a rural mouza or ward through proper field survey, data collection, tabulation, analysis, graphical representation and interpretation thereby depicting the man-nature interaction across space.

**COURSE COORDINATOR: Dr. Rajat Halder**

**Teachers: Dr.Rajat Halder, Dr. Aditi Matilal, Susmita Halder**

Phase	Teacher	No of classes	Topic	Remarks
<b>APPLIED GEOGRAPHICAL TECHNIQUES (PRACTICAL)</b>				
II	AM	4	Interpretation of geological maps and drawing of sections: Uniclinal with unconformity and igneous intrusions	Lecture series with extensiv
		4	Interpretation of geological maps and drawing of	



			sections: folds with unconformity and igneous intrusions	e use of black board. Occasional power-point presentations are given. Unit tests will be taken for evaluation
III	SH	2	Interpretation of Indian Daily Weather Maps – Monsoon	
III		2	Interpretation of Indian Daily Weather Maps –Post Monsoon.	
II	RH	1	Remote Sensing: Basic concept of remote sensing, EMR, Band	
		2	Types of satellites and sensors with special reference to IRS series of satellites;	
		2	Types of resolutions and their applicability	
		2	Principles of preparing standard false colour composite,	
		1	Landuse and land cover mapping from standard FCC with header information.	
III	AM	4	Interpretation of aerial photograph – basic principles of aerial photography, side lap, end lap, flight line, air base, fiducial marks, .Principle Point, Nadir Point, Conjugate Principal Point,	
		4	Preparation of aerial photo mosaics, demarcation of effective area, extraction of cultural and physiographic features within this area with preparation of interpretation key.	
<b>Geographical Information System (GIS)</b>				
III	SH	1	Concept of GIS and its applicability: Spatial and attribute data, raster and vector data structure	
		1	Concept of information layers in GIS.	
		2	Georeferencing of scanned maps and ascribing projection (Polyconic/ UTM)	
		2	Digitisation of point, line and polygon layers; Attachment of appropriate attribute tables.	
		2	Preparation of thematic maps from attached data: choropleth,	
		2	Preparation of thematic maps from attached data: pie chart	
		2	Preparation of thematic maps from attached data: bar graphs	
<b>Field Report:</b>				
II	AM	1	Field Report: concept and introduction	
		1	Landuse survey and preparation of landuse map	
		3	Classification and tabulation of socio-economic and physical data	

III	AM	8	Preparation of maps and diagrams showing broad Physiography, drainage, settlement, demographic characteristics etc	
		2	Preparation of report	

**PAPER-VIII**  
**STATISTICAL TECHNIQUES AND CONTEMPORARY ISSUES**  
**IN GEOGRAPHY (PRACTICAL)**

**Course Outcome:**

1. Perform basic statistical calculations, graphical representations (histogram, frequency polygon, ogive), with emphasis on measures of dispersion, correlation, regression and time series analysis.
2. Ability to represent and interpret climatic and hydrological data through climatic chart, Taylor's Climograph and Hythergraph, station models, rating curves, hydrographs and unit hydrographs of rivers
3. Ability to compute Human and Gender Development Index
4. Preparation of questionnaire schedule for assessment of development and for perception survey.
5. Ability to compute, graphically represent and interpret different measures of spatial and size-class distribution like dominant-distinctive function, rank-size rule and Lorenz curve.

**COURSE COORDINATOR:Dr. Aditi Matilal**  
**Teachers: Aditi Matilal, Susmita Halder, Dr.Rajat Halder**

Phase	Teacher	No of classes	Topic	Remarks
<b>GROUP-A: STATISTICAL TECHNIQUES</b>				
III	RH	1	Nature of statistical data: discrete, continuous, parametric and non-parametric data	Lecture series with extensive use of black board. Occasional power-point presentations are given. Unit
		1	Tabulation and classification of statistical data	
		2	Frequency distribution: histogram, frequency polygon	
		1	Ogive	
		1	Normal and skewed distribution, measures of skewness	
		5	Measures of central tendency: mean, median, mode, partition values: quartile, decile and percentile.	
		4	Measures of dispersion: mean deviation, quartile deviation, semi-quartile range, standard deviation and co-efficient of variation	
		1	Semi-quartile range,	
		2	Standard deviation and co-efficient of variation	
		3	Simple bivariate correlation and regression trend line	

		2	Time series analysis	tests will be taken for evaluation
<b>GROUP-B: CONTEMPORARY ISSUES IN GEOGRAPHY</b>				
<b>Section-A : Representation of climatic and hydrological data of the Indian Sub-continent</b>				
I	SH	4	Preparation and Interpretation of a climatic chart showing relationship between rainfall, temperature, pressure and relative humidity of a station for three months, preparation and interpretation of Taylor's Climograph and Hythergraph	Lecture series with extensive use of black board. Occasional power-point presentations are given. Unit tests will be taken for evaluation
		3	Preparation of station models for different meteorological stations of India with the help of Synoptic chart.	
III	AM	6	Preparation and interpretation of rating curves, hydrographs and unit hydrographs of rivers flowing through the Indian Sub-continent.	
<b>Section-B: Economic and Human Development in Third World</b>				
I	AM	3	Computation of Human and Gender Development Index and ranking of countries/states/districts based on HDI and GDI	
		1	Preparation of questionnaire schedule for assessment of development and for perception survey	
		3	Dominant-distinctive function	
		3	Rank-size rule	
		2	Lorenz curve	