MAHARANI KASISWARI COLLEGE

LESSON PLAN FOR ODD SEMESTER

SEMESTER- I

SUBJECT: GEOGRAPHY (HONS.) PAPER: GEOG-H-CC01-TH

(PHYSICAL GEOGRAPHY)

UNIT-IV: CLIMATOLOGY

PREPARED BY DR. UTTAM KUMAR SARDAR

TOPIC	SUB-TOPIC (MODULE)	NO.OF HOURS ALLOTED	REMARKS
Nature and Composition of the atmosphere	Introduction Definition of atmosphere Origin of atmosphere Composition of atmosphere: i) Physical properties dry air (Different Gases) (N,O,Ar,CO2,Ne,He,Kr, Xe, O3,Ra,H) ii) Water Vapour iii) Ozone gases iv) Dust particles and salt Conclusion	One	Completed

Layering of Atmosphere	Introduction Classification of atmosphere layering : A. Heterosphere B. Homosphere Heterosphere: i. Molecular Nitrogen layer (80 k.m. to 200 k.m.) ii. Atomic Oxygen layer (200 k.m. to 1100 k.m.) iii. Helium layer (1100 k.m. to 3500 k.m.) iv. Atomic Hydrogen layer (3500 k.m. to 10000 k.m.) Homosphere: i. Troposphere ii. Stratosphere iii. Mesosphere iv. Thermosphere v. Ionosphere (D-layer, E-layer, F-layer) vi. Exosphere vii. Magnetosphere Conclusion	Two	Completed

General Circulation of Atmospheric Wind	Introduction Definition circulation of wind Controlling factors of the wind: 1. Pressure Gradient Force 2. Coriolis Force 3. Centrifugal Force 4. Frictional Force Conclusion	One	Completed
Classification of winds and Planetary wind system	Introduction Definition of wind Classification winds: i. Planetary winds ii. Periodical winds iii. Local winds iv. Irregular winds Planetary Winds: i. Trade winds (NE Trade wind & SE Trade wind) ii. Westerlies iii. Polar wind Pressure Belts of world: i. Equatorial low pressure belt ii. Sub tropical high pressure belts iii. Sub polar low pressure belts iv. Polar high pressure belts Conclusion	Two	Completed

MAHARANI KASISWARI COLLEGE

LESSON PLAN ODD SEMESTER

SEMESTER V (HONOURS UNDER CBCS SYSTEM)

SUBJECT: GEOGRAPHY

PAPER CODE: GEO-A-CC-5-12-TH & GEO-A-CC-5-12-P

PAPER NAME: REMOTE SENSING, GIS AND GNSS

FACULTY NAME: SHARMISTHA DHAR

UNIT	TOPIC	SUB TOPIC	NO. OF HOURS ALLOTED	REMARKS
UNIT :1 REMOTE SENSING	• Principles of Remote Sensing (RS): Types of RS Satellites and Sensors	• Definition of Remote Sensing • Methods and Steps of Remote Sensing • Principles of Remote Sensing • Concept of electromagnetic spectrum • Atmospheric interaction • Different types of reflectance • Types of satellite • Types of remote sensing • Types of sensor • Difference of different sensors	5	
	• Sensor resolutions and their applications with reference to IRS and Landsat missions.	• Definition of resolution • Types of resolution • Sensor resolution of IRS LISS 3 • Sensor resolution of Landsat TM • Concept of orbit calendar	5	

	• Image referencing schemes and acquisition procedure of free geospatial data from NRSC / Bhuvan and USGS	• Concept of Path and Row • Image referencing scheme and example of orbit calendar • Method and steps of free Image download from Bhuvan • Method and steps of free image download from USGS	5	
	• Preparation of False Colour Composites from IRS LISS-3 and Landsat TM / OLI data.	• Concept of false colour composition • Concept of bandset • Use of false colour composition	5	
	• Principles of image interpretation. Preparation of inventories of landuse landcover (LULC) features from satellite images.	• Concept and elements of image interpretation • Preparation of inventories of landuse landcover features from satellite images.	5	
	• Acquisition and utilization of free Digital Elevation Model data: CartoDEM, SRTM and ALOS.	• Concept of DEM • Concept of DTM • Difference between DEM & DTM • Process of acquisition of free DEM data • Utilization of DEM	5	
UNIT : 2 GEOGRAPHICAL INFORMATION SYSTEMS	• GIS data structures types: Spatial and Non-spatial , raster and vector.	• Concept of GIS • Method of GIS • GIS data • Different types of GIS data • Difference between raster and vector data • Difference between attribute and	5	

		spatial data		
	• Principles of preparing attribute tables, data manipulation and overlay analysis.	• Principles of preparing attribute table • Attribute table data manipulation • Concept of overlay • Overlay analysis	6	
	• Principles and significance of buffer preparation.	• Concept of buffer • Principles of buffer preparation • Significance of buffer • Spatial analysis by buffer	4	
	• Principles and significance of overlay analysis.	• Concept and principles of overlay analysis • Significance and importance of overlay analysis	5	

PAPER CODE: **GEO-A-CC-5-12-P**

PAPER NAME: REMOTE SENSING, GIS AND GNSS

TOPIC	SUB TOPIC	NO. OF CLASS ALOTTED	REMARK
PRACTICAL	• Image georeferencing and enhancement. • Preparation of reflectance libraries of LULC features across different image bands of IRS L3 or Landsat OLI data	15	
	• Supervised image classification • Class editing • Post classification analysis	15	

MAHARANI KASISWARI COLLEGE

LESSON PLAN FOR ODD SEMESTER

SEM III (HONOURS UNDER CBCS SYSTEM)

SUBJECT: GEOGRAPHY

PAPER NAME: HYDROLOGY & OCEANOGRAPHY

PAPER CODE: GEO-A-CC-3-06-TH & GEO-A-CC-3-06-P

PREPARED BY EMILY SAHA

TOPIC	SUB TOPIC (MODULE)	NO. OF HOURS ALLOTED	REMARKS
Topic 1: System approach in hydrology, Global hydrological cycle: its physical and biological role	• Introduction • Definition of hydrology • Concept of system approach • Relation between hydrology & system approach • Concept explanation of global hydrological cycle • Factors affecting global hydrological cycle • Physical and biological role of hydrological cycle	5	
Topic 2: Run off: controlling factors. Infiltration and evapotranspiration. Runoff cycle	• Definition and concept of run off • Types of run off • Physiographical, climatic and biological factors of runoff • Concept and definition of infiltration • Concept and definition of evapotranspiration • What is runoff cycle • Different phases of run off cycle	5	
Topic 3: Drainage basin as a	• Introduction • Definition of drainage basin		

hydrological unit, principles of water harvesting and watershed management	• Types • Characteristics • Drainage basin as a hydrological unit • What is water harvesting • Principles • Concept of water shed management • Principles • Advantages and utilization	5	
Topic 4: Groundwater: occurrence and storage. Factors controlling recharge, discharge and movement	• Concept and definition • Types • Occurrence • Storage • Processes • Aquifer and aquitard • Types of aquifers • Concept of recharge and discharge • Influent and effluent streams • Artesian wells • Spring and its types	5	
Topic 7: Water mass, T-S diagram	• Definition and concept • Types of water mass • Characteristics • Concept and interpretation of temperature- salinity diagrams • Features	4	
Topic 8: Air-sea interactions, ocean circulation, wave and tide	• Concept of air-sea interaction • Concept of oceanic circulation • Factors • Occurrence • Definition and classification of waves • Characteristics • Definition and classification of tides • Characteristics	8	
Topic 9: Ocean temperature and salinity: distribution and determinants	• Concept and definition • Factors and determinants • Occurrence and global distribution	4	

Topic 10: Coral reefs: formation, classification and threats	• Definition • Factors and determinants • Types • Occurrence • Threats • Case study	5	
Topic 11: Marine resources: Classification and sustainable utilization	• introduction • types of marine resources • utilization on sustainable way	4	
Topic 12: Sea level change: types and causes	• concept • occurrences of sea level change • types • causes of sea level change • case study	5	
Topic 1: Rating carve	• Introduction • Objectives • Calculation • methodology • Construction • Interpretation	10	
Topic 2: Annual hydrograph and unit hydrograph	• Introduction • Objectives • Calculation • methodology • Construction • Interpretation	15	

TEACHER : SOHA HOSSAIN

SEMESTER : 5

PAPER	UNIT	TOPICS	No. OF Hours Alloted
GEO-A-CC-5-12-P	3	Digitisation of features and administrative boundaries. Data attachment, overlay, and preparation of annotated thematic maps	22
GEO-A-DSE-B-5-05-TH	1	1. Definition, scope and content of cultural geography	5
		2. Development of cultural geography in relation to allied disciplines	2
		3. Cultural hearth and realm, cultural diffusion, diffusion of major world religions and languages	9
		4. Cultural segregation and cultural diversity, culture, technology and development	5
		5. Races and racial groups of the world	3
		6. Cultural regions of India	2
GEO-A-DSE-B-5-05-P	1	1. Mapping language distribution of India	4
	2	2. CD block-wise housing distribution in any district of West Bengal using proportional square	2

TEACHER : SOHA HOSSAIN

SEMESTER : 3

PAPER	UNIT	TOPICS	No. OF CLASSES
GEO-A-CC-3-05-P	1	1. Measurement of weather elements using analogue instruments: Mean daily temperature, air pressure, relative humidity, and rainfall	10
	2	2. Interpretation of a daily weather map of India (any two): Pre-Monsoon, Monsoon, and Post-Monsoon	15
	3	3. Construction and interpretation of hythergraph and climograph (G. Taylor)	8
	4	4. Construction and interpretation of wind rose	4

Lesson Plan

Soumi Mitra

	Paper	topic	Number of Hours Alloted
Sem 1	**GEOG-H-CC01/MD-CC01-1/3-Th – Physical Geography**	**2.** Seismic waves and internal structure of the earth	**3**
	GEOG-H-SEC01/MD-SEC01-1/2/3-Th – Methods in Geography	**4.** Data compilation into master table [4] **5.** Computer-assisted field data entry; tabulation of data into frequency distribution tables [4] **6.** Statistical analysis of data: measures of central tendency and dispersion [4] **8.** Textural analysis of grains using sieves [4] **9.** Mapping and extraction of flooded areas from satellite images and digital elevation models [5] **10.** Mapping areal and linear extents of riverbank and coastline shift from Survey of India 1:50k maps and/or satellite images [5]	**4+4+4+4+5+5**
Sem 3	**GEO-A-CC-3-06-P – Hydrology and Oceanography Lab**	**3.** Construction and interpretation of monthly rainfall dispersion diagram (Quartile method), Climatic water budget and Ergograph **4.** Construction of Theissen polygon from precipitation data	**4+4**

	GEO-A-CC-3-07-P – Statistical Methods in Geography Lab	**1.** Construction of data matrix with each row representing an areal unit (districts / blocks / *mouzas* / towns) and corresponding columns of relevant attributes [15] **2.** Based on the above, a frequency table, measures of central tendency, and dispersion would be computed and interpreted using histogram and frequency curve	**2+4**
Sem 5	**GEO-A-CC-5-12-TH – Remote Sensing, GIS and GNSS**	**11.** Principles of GNSS positioning and waypoint collection **12.** Principles of transferring of GNSS waypoints to GIS. Area and length calculations from GNSS data	**2+4**
	GEO-A-CC-5-12-P – Remote Sensing, GIS and GNSS Lab	**4.** Waypoint collection from GNSS receivers and exporting to GIS database	**5**
	GEO-A-DSE-A-5-02-TH – Climate Change: Vulnerability and Adaptations	**2.** Climate change with reference to the geological time scale **6.** Global climatic assessment: IPCC reports	**2+3**
	GEO-A-DSE-A-5-02-P – Climate Change: Vulnerability and Adaptations Lab	**4.** Preparation of an inventory of extreme climatic events and mitigation measure of any climatic region / country of South Asia for a period of one decade on the basis of secondary information	**6**

MAHARANI KASISWARI COLLEGE

LESSON PLAN

SEMESTER 6(HONS)

SUBJECT: GEOGRAPHY HONOURS **PAPER NAME: Geography of India**

PAPER CODE: GEO-A-DSE-B-6-08-TH

BY Avik kumar Bayen

UNIT NO	TOPIC	SUB-TOPIC	CLASSES	REMARKS
2	Resources of west Bengal	● Agriculture •Mining •Indusyry	6	
	Population of West Bengal	● Growth ● Distribution ● Human development	4	
2	Regional issues	● Problems of Darjeeling hills ● Problems of Sundarbans	4	

MAHARANI KASISWARI COLLEGE

LESSON PLAN

SEMESTER I (HONS)

SUBJECT: GEOGRAPHY (HONS)

PAPER CODE: GEOG-H-CC01/MD-CC01-1/3-TH

PAPER NAME: PHYSICAL GEOGRAPHY

PREPARED BY RIYANKA CHATTERJEE

Topic **(** Unit III- Geomorphology)	**Sub Topic**	**No of Hours Alloted**	**Remark**
Classification of weathering and agents of erosion	• Definion of weather • Concept of Weathering and denudation • Difference between weathering and erosion • Types of weathering • Process of physical weathering • Process of chemical weathering • Concept of biological weathering • Difference between physical and chemical weathering • Concept of Agents of erosion • Role of different agents of erosion in landform creation	2	Complete

Fluvial Process and landforms	• Concept of Fluvial geomorphology • Work of a river • Long and cross profile of a river • Classification of river based on Lithology, Availability of river, Relation to topography • Process of erosion, transportation. • Landforms created by river in Upper course • Landforms created by river in Middle course • Landforms created by river in Lower course • Sinousity index • Drainage pattern and channel forms.	6	Complete

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LESSON PLAN

SEMESTER I (HONS)

SUBJECT: GEOGRAPHY (HONS. UNDER CBCS SYSTEM)

PAPER CODE: GEO-A-CC-1-02-TH

PAPER NAME: CARTOGRAPHIC TECHNIQUES

PREPARED BY RIYANKA CHATTERJEE

Topic	**Sub Topic**	**No of Hours Alloted**	**Remark**
Maps: Component and classification	• Definition of map • History of map making • Components of maps • Classification of maps with example	4	Complete
Concept and application of scale: plain, comparative, diagonal, vernier	• Definition of Map scale • Utility, Uses of scale • Methods of Representation of Map scale • Definition, Characteristics, Merits and demerits of linear scale • Definition, Characteristics, Merits and demerits of Diagonal scale • Definition, Characteristics, Merits and demerits of Comparative scale • Definition, Characteristics, Merits and demerits of Vernier scale	4	Complete
Coordinate system: Rectangular and Polar	• Concept of coordinate system • Characteristics of coordinate system • Concept of Rectangular coordinate system • Determination of distance by rectangular coordinate system • Concept of Polar coordinate system	5	Complete

	• Determination of distance by Polar coordinate system • Conversion from rectangular coordinate system to Polar and vise versa • Difference between Rectangular and polar coordinate system		
Survey of India Topographical Maps	• Evolution of Indian topographical sheet • Layout of Indian Topographical scale on tge old scale, Metric scale, and OSM (after National Map policy 2005) • Indian topographical map: dimention and scale • Annotation uses on the margin on the Topographical maps	3	Complete

MAHARANI KASISWARI COLLEGE

LESSON PLAN

SEMESTER III (HONS)

SUBJECT: GEOGRAPHY (HONS UNDER CBCS SYSTEM)

PAPER CODE: GEO-A-CC-3-07-TH & GEO-A-CC-3-07-P

PAPER NAME: STATISTICAL METHODS IN GEOGRAPHY

PREPARED BY RIYANKA CHATTERJEE

Topic	**Sub Topic**	**No of Hour Alloted**	**Remark**
Importance and significance of statistics in Geography (Theory)	• Origin and growth of statistics • Meaning, Definition of statistics • Characteristics and importance of statistics • Limitations of statistics	2	Complete
Random, Stratified and Systematic method of Sampling	• Definition of sample and sampling • Essentials of sampling • Need of sampling • Sample design • Types of Sampling methods (Probability, Non-Probability) • Random Sampling- Definition, Characteristics • Methods of Random sampling • Stratified Random Sampling- Definition, Characteristics • Methods of representation of Stratified Random sampling • Systematic Sampling- Definition, Characteristics • Methods of representation of Systematic sampling	5	Complete
Scatter Diagram and Residual from Regression	• Regression Analysis – Definition, uses, types. • Methods of Simple regression analysis- Least Square method,	4	Complete

	Correlation method • Drawing of Linear regression line – By Least square method • Linear regression analysis • Residual Mapping- By Absolute residual method.		

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LESSON PLAN

SEMESTER V (HONS)

SUBJECT: GEOGRAPHY (HONS UNDER CBCS SYSTEM)

PAPER CODE: GEO-A-DSE-A-5-02-TH & GEO-A-DSE-A-5-02-P

PAPER NAME: CLIMATE CHANGE: VULNERABILITY AND ADAPTATIONS

PREPARED BY RIYANKA CHATTERJEE

Topic	**Sub Topic**	**No of Hours Alloted**	**Remark**
Science of Climate Change	• Origin, Nature and scope of climate change	2	Complete
Evidance and Factors of Climate change: Nature Man Dichotomy	• Different evidence of Climate change • Factors responsible or climate change: Natural and Anthropogenic • Nature vs Man contradictions	5	Complete
Greenhouse gases and global warming	• Grenn house effect • Factors responsible for global warming • Effects of global warming	4	Complete
Electromagnetic spectrum:Atmospheric window,Heat Budget of earth	• Electromagnetic radiation • Briefing of Particle theory and wave theory of EMR • Concept of Electromagnetic Spectrum • Different Wavelength of EMS • Concept of Atmospheric window • Importance of Atmospheric window • Preformation of Remote sensing in reference to EMS • Concept and significance of Heat Balance of Earth	5	Complete
National action Plan on Climate change	• Overview of National action Plan on Climate change • Principles, Approaches of NAPCC	3	Complete

	• Discussion about Eight National Mission		
Role of Urban Local Bodies, Panchayat, and educational institute on climate change mitigation	• Role of Urban local bodies • Awareness programme by different educational institure • Role of Panchayat on Climate change • Few examples of awareness programme conducted by Urban local bodies, educational institutes.	2	Complete

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LESSON PLAN

SEMESTER I (HONS)

SUBJECT : GEOGRAPHY (HONS) PAPER: **CC1- Physical Geography**

Topic **(** Unit III- Geomorphology)	**Sub Topic**	**No of Hours Alloted**	**Remark**
Classification of weathering and agents of erosion	• Definion of weather • Concept of Weathering and denudation • Difference between weathering and erosion • Types of weathering • Process of physical weathering • Process of chemical weathering • Concept of biological weathering • Difference between physical and chemical weathering • Concepot of Agents of erosion • Role of different agents of erosion in landform creation	2	Complete
Fluvial Process and landforms	• Concept of Fluvial geomorphology • Work of a river • Long and cross profile of a river • Classification of river based on Lithology, Availability of river, Relation to topography • Process of erosion, transportation. • Landforms created by river in Upper course • Landforms created by river in Middle course • Landforms created by river in Lower course • Sinousity index • Drainage pattern and channel forms.	6	Complete

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LESSON PLAN

SEMESTER III (HONS UNDER CBCS SYSTEM)

SUBJECT: GEOGRAPHY

PAPER NAME: COASTAL MANAGEMENT

PAPER CODE: GEO-A-SEC-A-3-01-TH

BY RITABRITA SAHA

UNIT NO	TOPIC	SUB-TOPIC	No of Hours Allotted	REMARKS
1	Components of coastal zone	• Definition of coastal zone • Components and their classification	2	
	Coastal Morphodynamic variables and their role in evolution of coastal forms	• Sediment • Waves • Wave induced currents • Storm-fair weather hydraulic regime • Tides • Winds • Gravitational processes	5	
2	Environmental Impacts and management	• Mining • Oil exploration • Salt manufacturing • Land reclamation • Tourism	8	
3	Coastal hazards and their management using structural and non-structural measures	• Erosion • Flood • Sand encroachment • Dune degeneration • Estuarine sedimentation • Pollution	8	

4	Principles of Coastal zone management	• Definition of coastal zone management • The principles	2	
	Exclusive Economic Zone	• Definition • Origin • Disputes	2	
	Coastal regulation zone	• Definition • Zonation • Objectives • Importance	2	