Program B.A/ B.Sc Geography (CCF) Programme Objective

Sl No	On completing of B.Sc, Students will be able to
PO1	Critical Thinking: This outcome involves training students to think critically and independently. Critical thinking skills help graduates make informed decisions and solve problems effectively.
PO2	Problem-solving: BA programmes should equip students with problem-solving skills. Graduates should be capable of identifying complex issues, analysing root causes, and AAA effective solutions. This skill is valuable in both personal life and professional careers.
PO3	Employability: On graduating, the students will be eligible for employment in the field of education and other industries like tourism, media, hospitality, etc. Their skills in comprehension of general social phenomena around them place them in an ideal situation for such jobs. They will also be able to appear for competitive examinations conducted for public sector jobs.
PO4	Interdisciplinary Knowledge: Depending on their chosen major, minor and interdisciplinary subjects within the BA programme, students should develop expertise in their specific area of study, whether literature, history, geography, political science or another field. This specialised knowledge provides depth in their chosen discipline.

Program Specific Outcome (PSO) for Geography Major

Sl No.	On completing B.Sc Geography students will be able to
PSO 1	They will have an idea about the fundamental concepts of Geography and will have a general understanding about the geomorphologic and geo-tectonic process and formation.
PSO 2	Students can correlate the knowledge of physical geography with the human geography. They will analyze the problems of physical as well as cultural environments of both rural and urban settlements and possible measures, features of these settlements and related models.
PSO 3	They will be capable of conducting social survey project, which is needed for measuring the status of development of a particular group or section of the society. This will enable them to analyse the associated problems with the help of statistical techniques.
PSO 4	They will understand the functioning of global economies, politics of world resource, geopolitics, global geostrategic views and functioning of political systems. They will study the spatially uneven outcomes of political processes and the ways in which political processes are themselves affected by spatial structures. They will be aware of how resource utilisation and allocation leads to development, management and conflict. In Historical geography is the branch of geography that studies the ways in which geographic phenomena have changed over time. Students will develop the ability to critically analyze and interpret the interrelationships between physical geography, agricultural and industrial development, and regional economic structures in India, enabling them to apply geographic knowledge in research, planning, and policy-making for sustainable and balanced regional development.
PSO 5	Students will develop an idea on sustainable approach towards the soil management, ecosystem and the biosphere with a view to conserve natural systems and maintain ecological balance. They will have an idea about the global water cycle.
PSO 6	Inculcate a tolerant mindset and attitude towards the vast socio-cultural diversity of India by studying and discussing contemporary concepts of social and cultural geography. Explaining and analysing the regional diversity and regional problems of India and West Bengal through interpretation of natural and planning regions. The thrust is also on the relevant issue of regional development, including uniqueness, problems and prospects of different regions. They can evaluate industrial and demographic trends, and interpret spatial development patterns with a special focus on regions like Darjeeling, Sundarbans, and Haldia—preparing them for careers in regional planning, environmental management, and sustainable development.
PSO 7	The students will become aware of the present climatic condition of the world which will help them analyse the need for sustainable development. The various types of environmental hazards have been addressed so that students become aware of measures to protect the physical environment. They have a knowledge about the physical and chemical properties of water. They become aware of the global ocean resources.
PSO 8	They will be capable of analyzing the differential patterns of the human habitation of the Earth, through studies of human settlements and population dynamic s. Understanding and accounting for regional disparities, poverty, unemployment and the impacts of globalization with a thrust of population welfare is considered.

PSO 9	Understanding the history of the subject; over viewing ancient and contemporary geographical thought and its relationship with modern concepts of empiricism, positivism, radicalism, behaviouralism, idealism etc.
PSO 10	They get the knowledge in practical techniques like using instruments for survey, mapping, cartography, software, interpretation of maps, photographs and images etc; This makes them understand the spatial variation of phenomena on the Earth's surface. They will learn how to prepare map based on GIS by using the modern geographical map making techniques. They will also learn the use of satellit e imageries and mapping techniques using supervised image classification. They will learn to collect waypoints using GNSS and associated skills.
PSO 11	Students will learn various methods of field research, as field based knowledge are essential to understand the ground reality, spatial patterns and processes.
PSO 12	They will learn about watershed management involving the management of land, water, biota, and other resources in a defined area for ecological, social, and economic purposes. They will also learn about technical, applied ecological, legal, political, social, and policy issues relating to the use of coastal and ocean resources and environments.

Course Outcomes (CO) are mapped to the revised Bloom's Taxonomy using the following abbreviations
R- Remembering, U- Understanding, Ap- Applying, An- Analysing, E- Evaluating, C- Creating

Semester-3 (July to December)
Core Course 3 (Geotectonics)
Course Code –CC3

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
CC3	GEOTECTONICS
Year & Semester	2nd year 3rd Semester
Prerequisite Course	NIL
Course Objective	To make students learn basic ideas of Geotectonics

SL NO.	Course Outcome	On completing the Course the students will be able to	PO addressed	PSO addressed	Cognitive level
Topic 1, 2 Relative and absolute dating of rocks, The geological time scale with special reference to the events of the Pleistocene	CO1	Understand the relative & absolute dating of rocks. Gain knowledge about the geological time scale.	4	1	U, An
Topic 3, 4 Formation and structural differentiation of the earth, Isostasy	CO2	Acquire knowledge of formation & structural differentiation of the earth. Give an idea of isostasy	4	1	U, An
Topic 5, 6 Plate Tectonics, Processes and landforms at plate margins and hotspots, Genetic classification of mountains. Types of volcanic eruptions	CO3	To know about the Platetectonics & processes & landforms at plate margins & hotspots. To develop an idea of classification of mountains & types of volcanic eruptions.	4	1	U, An
Topic 7, 8, 9 Major relief features of the ocean floor, Folds, Faults	CO4	To give an idea of major relief features of ocean floor. Gain knowledge about folds. To develop an idea of faults.	4	1	U, An
Topic 10 Morphometric indices of tectonic activity: Basin asymmetry factor, transverse topographic symmetry factor, and mountain front sinuosity	CO5	Understand the morphometric indices of tectonic activities	4	1	U, An
Geotectonic s Lab	CO6	Learn to measure the dip & strike using clinometers. Learn to identify different rocks & minerals. Learn to analyse the tectonic activity. Learn the interpretation of geological maps.	2,3,4	10	R, Ap, An

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1				2	3											
CO2				2	3											
CO3				2	3											
CO4				2	3											
CO5				2	3											
CO6		3	3	3										3		
Average		**3**	**3**	**2.1**	**3**									**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-3 (July to December)
Core Course 4 (Economic Geography)
Course Code –CC4

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
CC3	ECONOMIC GEOGRAPHY
Year & Semester	2nd year 3rd Semester
Prerequisite Course	NIL
Course Objective	To make students learn basic ideas of Economic Geography

SL NO.	Course Outcome	On completing the course, the students will able to:	PO Addressed	PSO Addressed	Cognitive Level
Unit:1 Concepts	CO1	To know the scope & approaches of Economic Geography. To understand the concepts in Economic Geography.	3,4	4	U,R
Unit: II Economic Activities	CO2	Understand the classification of economic activities. Overview the idea of location of economic activities. Develop an idea of primary, secondary & tertiary activities. Acquire the knowledge of economic globalisation. Develop an idea of international trade. To know about the emergence of economic blocs.	3,4	4	U,R,E
Economic Geography Lab	CO3	Learn to construct the gender wise work participation rate. Learn to construct the proportional divided circles. Learn to prepare the crop calendar. Learn to prepare the time series analysis.	3,4	8,10	U,An

	PO 1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1			3	3				3								
CO2			3	3				3								
CO3			3	3								3		3		
Average			**3**	**3**				**3**				**3**		**3**		
Correlation level	1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)															

SEMESTER-3 (July to December)
Core Course- 3 (Environmental Impact Assessment & Environmental Management Planning)
Course Code- SEC 2

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
CC	ENVIRONMENTAL IMPACT ASSESSMENT & ENVIRONMENTAL MANAGEMENT PLANNING
Year & Semester	2nd year 3rd Semester
Prerequisite Course	NIL
Course Objective	To make students learn basic ideas of Environmental Impact Assessment & Environmental Management Planning

SL NO.	Course Outcome	On completing the course the students will be able to	PO Addressed	PSO Addressed	Cognitive level
UNIT1:Conceptual Framework	CO1	To know the definition & scope of EIA & EMP. To understand the legal & policy framework for management. To give an idea of structure of governance & implementation strategies	1,2,3,4	2,4	U, An,
UNIT II: Processes	CO2	To understand the environmental appraisal. To know the stages of conducting EIA. To give an idea of preparation of inventory & matrices	1,2,3,4	2,12	An,E
UNIT III: Methods	CO3	Gain knowledge for methodologies for EIA. To know about the stakeholders' participation. To understand prediction scenarios & mitigation, assessing alternatives. To acquire knowledge of environmental impact reporting. Develop an idea of EI monitoring & review. Overview the environmental audit. To learn environmental audit. To know the case study of a metro rail & highway project	1,2,3,4	2,4,12	An, E, C

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	3	3	2	3		2		3								
CO2	3	3	3	3		3										3
CO3	3	3	3	3		3		2								3
Average	**3**	**3**	**2.67**	**3**		**2.67**		**2.5**								**3**
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-4 (January to June)
Core Course 5 (Geomorphology)
Course Code – GEOG-H-CC05

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
CC5	GEOMORPHOLOGY
Year & Semester	2nd year 4th Semester
Prerequisite Course	NIL
Course Objective	To understand the origin, evolution, and dynamics of Earth's landforms through the study of surface processes and geological structures.

SL NO.	Course Outcome	On completing the course the students will be able to	PO Addressed	PSO Addressed	Cognitive level
Topic 1: Time and space in geomorphology	CO1	Students will learn how geomorphic processes operate over varying time and space scales, using Schumm and Lichty's model to understand the dynamic relationship between process, form, and time. They will also explore landform classification and analysis through Tricart and Haggett's scale-based models of geomorphic ordering.	3,4	1	R, U, An
Topic 2, 3 Degradational processes, entrainment, transportation, and deposition	CO2	Learn to classify various mass wasting processes and identify the landforms they create through degradation. They will also understand how geomorphic agents like water, wind, ice, and gravity entrain, transport, and deposit materials to shape the Earth's surface.	3,4	1	U, An
Topic 4, 5 Development of river network	CO3	Idea about how structural geology influences river networks and landform development, and how faults are expressed on the Earth's surface.	3,4	1,12	U, An
Topic 6,7,8 Processes and landforms	CO4	Students will learn how coastal, glacial, glacio-fluvial, aeolian, and fluvio-aeolian processes operate and interact to shape distinct landforms, influencing landscape evolution in different climatic and geological settings.	3,4	1	An
Topic 9 Models on landscape evolution	CO5	Get an idea about key theoretical models of landscape evolution proposed by Davis, Penck, King, and Hack, and understand the significance of the systems approach in analyzing dynamic interactions within geomorphic systems.	3,4	4	U, An

Topic 10 Role of humans in landform development	CO6	A knowledge about how human activities such as deforestation, mining, urbanization, agriculture, and construction alter natural geomorphic processes and contribute to the creation, modification, or destruction of landforms.	3,4	4, 7	U, An, Ap
Geomorphology Lab	CO7	Hands-on training on how to interpret topographical features using toposheets, analyze terrain characteristics and stages of landscape evolution through hypsometric curves, and assess river channel patterns and dynamics using the sinuosity index.	3,4	10,11,12	U, An, Ap

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1			3	3	3											
CO2			2	3	3											
CO3			2	3	3											3
CO4			2	3	3											
CO5			2	3				3								
CO6			2	3				3			3					
CO7			2	3							3			3	3	3
Average			**2.14**	**3**	**3**			**3**			**3**			**3**	**3**	**3**
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-4 (January to June)
Core Course 6 (Climatology)
Course Code – GEOG-H-CC06

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
GEOG-H-CC06	CLIMATOLOGY
Year & Semester	2nd year 4th Semester
Prerequisite Course	NIL
Course Objective	To provide students with a comprehensive understanding of the Earth's atmosphere, weather and climate systems, their spatial and temporal variations, and the fundamental processes driving atmospheric circulation, precipitation, and climate change, with an emphasis on their geographical implications for human and natural environments.

SL NO.	Course Outcome	On completing the course the students will be able to	PO Addressed	PSO Addressed	Cognitive level
Unit I: Elements of the Atmosphere	CO1	Students will learn about the composition, structure, and characteristics of the atmosphere, including key elements such as temperature, pressure, humidity, wind, and precipitation, and how these elements interact to influence weather and climate patterns.	4	7	R, U, An,
Unit II: Atmospheric Phenomena and Climatic Classification	CO2	Get an idea about key atmospheric phenomena such as cyclones, anticyclones, thunderstorms, and monsoons, as well as different climatic classification systems (like Köppen and Thornthwaite) used to categorize global climate types based on temperature and precipitation patterns.	1, 4	7	An,E
Unit III: Climatology Lab	CO3	Students will learn how to measure and interpret various weather elements (temperature, pressure, humidity, wind, rainfall) using analogue instruments, analyze daily weather maps of India, and construct and interpret graphical tools like rainfall dispersion diagrams, hythergraphs, and climographs to understand climatic trends and regional weather variations.	4	7, 10	An

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1				3							3					
CO2	3			3							3					
CO3				3							3			3		
Average	**3**			**3**							**3**			**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-4 (January to June)
Core Course 7 (Social Geography)
Course Code – GEOG-H-CC07

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
GEOG-H-CC07	SOCIAL GEOGRAPHY
Year & Semester	2nd year 4th Semester
Prerequisite Course	NIL
Course Objective	To examine the spatial dimensions of social processes and structures, exploring how society, culture, and identity interact with geographical space and place.

SL NO.	**Course Outcome**	**On completing the course the students will be able to**	**PO Addressed**	**PSO Addressed**	**Cognitive level**
Unit I: Concepts	CO1	Understand the core concepts, scope of social geography, and analyze how social processes such as migration, segregation, and urbanization influence spatial organization.	1,2,3	6	U,R,E
Unit II: Social Issues	CO2	Students will learn how social issues are shaped by and reflected in geographical spaces and how these issues can be studied and addressed through spatial thinking.	1,2,3	6,8	U,R,E
Unit III: Social Geography Lab	CO3	Students will gain practical experience in applying quantitative and qualitative methods to understand social development and inequality in geographic space.	1,2,3	6,8,10	U,R, An, C

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	3	3	3							3						
CO2	3	3	3							3		2				
CO3	3	3	3							3		3		3		
Average	**3**	**3**	**3**							**3**		**2.5**		**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-4 (January to June)
Core Course 8 (Cartographic Techniques)
Course Code – GEOG-H-CC08

Programme	B.Sc.Hons Geography
Course Code	COURSE NAME
GEOG-H-CC08	CARTOGRAPHIC TECHNIQUES
Year & Semester	2nd year 4th Semester
Prerequisite Course	NIL
Course Objective	To develop students' understanding of the principles, methods, and tools of cartography and to equip them with practical skills in map-making, symbolization, scale interpretation, and spatial data representation for effective geographic analysis and communication.

SL NO.	Course Outcome	On completing the course the students will be able to	PO Addressed	PSO Addressed	Cognitive level
Topic 1, 2, 3 Coordinate systems, Grid, Bearing	CO1	Understand the concepts used to locate positions on maps and the Earth's surface. Application of accurately determining location, direction, and movement in cartographic and navigational contexts. Students will gain foundational knowledge essential for precise spatial referencing and geographic orientation.	1,2,3,4	10	R,U,An
Topic 4 Geoid, Spheroid, WGS-84	CO2	Students will gain insight into how Earth's shape is modelled for precise geolocation and cartographic accuracy. Learn about WGS84 (World Geodetic System 1984) as the global reference system used in GPS and modern geospatial technologies.	1,2,3,4	10	R,U,An
Topic 5, 6, 7 Map projections, properties, limitations, UTM	CO3	Students will gain the ability to choose and apply appropriate projections based on mapping objectives and scale, essential for accurate geographic representation. Identify the limitations and distortions inherent in different projections. Learn about the Universal Transverse Mercator (UTM) system as a global coordinate system	1,2,3,4	11	An, E, C
Topic 8, 9 Representation of data	CO4	Understand the principles and techniques of thematic cartography for visualizing quantitative and qualitative geographic data. Represent variations	1,2,3,4	3,10	R,U,An,C

		in volume or frequency of spatial phenomena using dot, sphere, and divided proportional circle maps.			
Topic 10 Reference scheme of old and open series topographical maps	CO5	Students will gain foundational knowledge to navigate, access, and utilize Indian topographical maps effectively for geographic investigation.	1,2,3,4	2	R,U,An
Cartographic Techniques Lab	CO6	Students will build practical expertise in transforming spatial data into accurate and meaningful visual formats for geographic analysis and communication.	1,2,3,4	10	R,U,An,C

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	2	3	3	3										3		
CO2	2	3	3	3										3		
CO3	2	3	3	3												
CO4	2	3	3	3			3							3		
CO5	2	3	3	3		3								3		
CO6	2	3	3	3												
Average	**2**	**3**	**3**	**3**		**3**	**3**							**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester 5 (July-December)
Core Course 9 (Hydrology and Oceanography)
Course Code: GEOG-H-CC09

Programme	B.Sc. Hons., Geography
Course Code	Course Name
	HYDROLOGY AND OCEANOGRAPHY
Year and Semester	3rd year, 5th semester
Prerequisite Course	Nil
Course Objective	Study of the interrelationship between water and environment and to differentiate between underwater formations, seawater composition and qualities

Sl. No.	**Course Outcome**	**On completing the course, the student will be able to**	**PO Addressed**	**PSO Addressed**	**Cognitive level**
Unit I: Hydrology	CO1	Learn the concept of natural distribution and movement of water Learn the ideas of run off, drainage basin, water harvesting and watershed management Understand the impact of human activities on water quality and problems in water management	1,4	5,7	R, U
Unit II: Oceanography	CO2	Understand the chemical, physical, geological and biological processes that affect the surface of the ocean. Learn about the sustainable uses of ocean resources Know the issues related to pollution	1,4	5,7	R, U
Hydrology and Oceanography Lab	CO3	Measure the continuous records of stream or river discharge, rainfall amount over a long period of time Knowledge about water level information over time Construction and analysis the meteorological data	1,4	10	R, U, An

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	3			3					3		2					
CO2	3			3					2		3					
CO3	3			3										3		
Average	**3**			**3**					**2.5**		**2.5**			**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester 5

Core Course 10 (Cultural and Settlement Geography)

Course Code: GEOG-H-CC10

Programme	B.Sc. Hons., Geography
Course Code	Course Name
CC10	Cultural And Settlement Geography
Year and Semester	3rd year, 5th Semester
Prerequisite Course	Nil
Course Objective	Understand the scope and content of cultural geography and trace the development of cultural geography in relation to allied disciplines.

Sl. No.	Course Outcome	On completing the course, the student will be able to	PO Addressed	PSO Addressed	Cognitive level
Unit I: Cultural Geography	CO1	Conceptualise culture, its components and structure, cultural hearth and realms Develop an understanding of cultural diffusion, segregation and cultural diversity, technology and development Learn about the various races and racial groups of the world Identify the cultural regions of India	1,2,3,4	6, 8	R, U
Unit II: Settlement Geography	CO2	Acquire basic knowledge about rural and urban settlements- definition, evolution and characteristics Analyze the morphology of rural and urban settlements	1,2,3,4	6, 8	R, U
Cultural and Settlement Geography Lab	CO3	Develop the skill of mapping language distribution of India Prepare cartograms representing roof materials of rural houses Measure accessibility of settlements and making nearest neighbour analysis from topographical sheet	1,2,3,4	6, 10	An, Ap

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	2	2	2	2						3		3				
CO2	3	3	3	3						3		3				
CO3	3	3	3	3						2		2		3		
Average	**2.67**	**2.67**	**2.67**	**2.67**						**2.67**		**2.67**		**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester 5
Core Course 11 (Hazard Management)
Course Code: GEOG-H-CC11

Programme	B.Sc. Hons., Geography
Course Code	Course Name
GEOG-H-CC11-5	HAZARD MANAGEMENT
Year and Semester	3rd year, 5th Semester
Prerequisite Course	Nil
Course Objective	Gain knowledge about approaches to hazard study and develop an idea about factors, consequences and management of different types of hazards

Sl. No.	**Course Outcome**	**On completing the course, the student will be able to:**	**PO Addressed**	**PSO Addressed**	**Cognitive level**
Unit I: Concepts	CO1	Learn approaches to hazard study Develop an idea about responses to hazards: preparedness, trauma, and aftermath Know about the data and process of hazard mapping	1,2,3,4	6,7	R, U
Unit II: Hazard-specific Study with Focus on West Bengal and India	CO2	Develop an idea on the factors, vulnerability, consequences and management of earthquake, landslide, land subsidence, tropical cyclone, riverbank and coastal erosion, fire and biohazard, with focus on West Bengal and India	1,2,3,4	6,7	R, U
Hazard Management Lab	CO3	Prepare a group project report on any one case study among the hazards mentioned in the syllabus from India, incorporating a preparedness plan	1,2,3,4	6,7,10	An, Ap

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	3	3	3	2						3	3					
CO2	3	3	3	2						3	2					
CO3	3	3	3	2						2	2			3		
Average	**3**	**3**	**3**	**2**						**2.67**	**2.34**			**3**		
Correlation level	1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)															

Semester 5
Core Course 12 (Thematic Mapping and Surveying)
Course Code: GEOG-H-CC12

Programme	B.Sc. Hons., Geography
Course Code	COURSE NAME
GEOG-H-CC12-5	THEMATIC MAPPING AND SURVEYING
Year and Semester	3rd year 5th Semester
Prerequisite course	Nil
Course objective	To create basic ideas of thematic mapping and surveying

Sl. No.	Course Outcome	On completing the course the students will be able to	PO Addressed	PSO Addressed	Cognitive level
Topic 1, 2,3, 4 Concepts of rounding, scientific notation. Log, anti-log, diagrammatic representation, geological map	CO1	Learn the concepts of rounding, scientific notation; logarithm & anti-logarithm. Nature of log scale Prepare and interpret geological map Gain an idea on the preparation and interpretation of and used land cover map and socio-economic maps	1,2,3,4	10	U, Ap
Topic 5 weather maps, land use land cover maps, socio-economic maps	CO2	Gain knowledge about principle national agencies preparing thematic maps in India, like NATMO, GSI, NBSSLUP, NHO and NRSC/Bhuvan	1,2,3,4	10	U, Ap, An, E
Topic 6, 7, 8, 9, 10 Principal national agencies producing thematic maps in India, Prismatic compass, Dumpy level	CO3	Understand the basic concepts of surveying and survey equipment, like Prismatic Compass, Dumpy Level, Theodolite, Abney Level, Total Station and echosounder	1,2,3,4	10	U, Ap, An, E
Thematic Mapping & Surveying Lab	CO4	Learn Traverse survey using prismatic compass Learn Profile survey using Dumpy Level Determine height of an object by Theodolite Do profile survey using Abney Level	1,2,3,4	10	U, Ap, An, E

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	3	3	3	2										3		
CO2	3	3	2	2										3		
CO3	3	3	2	2										3		
CO4	2	3	3	2										3		
Average	**2.8**	**3**	**2.6**	**2**										**3**		
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-6 (January to June)
Core Course 13: Soil and Biogeography
Course code: GEOG-H-CC13

Programme	B.Sc. Hons Geography
Course Code	COURSE NAME
CC 13	SOIL AND BIOGEOGRAPHY
Year & Semester	3rd year 6th Semester
Prerequisite Course	Nil
Course Objective	To make students learn basic ideas of soil and biosphere

SL. No	Course Outcome	On completing the course, the student will be able to:	PO Addressed	PSO Addressed	Cognitive Level
Unit 1 Soil Geography	CO1	learn factors of soil formation; physical and chemical properties of soil; origin and characteristics of soil profiles; classification of soil	4	2, 5	U, Ap
Unit 2 Biogeography	CO2	gain knowledge on biosphere, ecosystem, ecology etc.; energy flow in ecosystem; concept of biome and bio-geochemical cycles; issues regarding deforestation and biodiversity	4	2, 5, 12	Ap, An, E, U
Soil and Biogeography Lab.	CO3	learn the methods of determining soil reaction (pH) and soil salinity using field kit; identification of textural type of soil; construction of plant species diversity matrix; time series analysis of bio-geographical data	3,4	2, 5, 10, 12	U, Ap, An

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1				3					2							
CO2				3		2			3							2
CO3			3	3										3		2
Average			**3**	**3**		**2**			**2.5**					**3**		**2**
Correlation level					1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)											

Semester-6 (January to June)
Core Course 14: India and West Bengal
Course code: GEOG-H-CC14

Programme	B.Sc. HONS Geography
Course Code	Course Name
CC 14	INDIA AND WEST BENGAL
Year and Semester	3rd year 6th Semester
Prerequisite Course	Basic Class 12 Geography
Course Objective	The course aims to provide a comprehensive understanding of the physical, cultural, economic, and political geography of India and West Bengal. It equips students with spatial and analytical skills to assess regional diversity, development issues, and planning strategies.

SL. No	**Course Outcome**	**On completing the course, the student will be able to:**	**PO Addressed**	**PSO Addressed**	**Cognitive Level**
Unit 1 India	CO1	By studying these topics, students will gain a comprehensive understanding of India's diverse physical and economic geography. They will learn how tectonic forces have shaped India's physiographic regions, and how climate, soil, and vegetation vary across the country. Students will understand the impacts of agricultural revolutions on food production and rural development. They will explore the growth and spatial patterns of key industries like automobiles and IT. Finally, they will grasp the concept of regionalisation and learn how economic regions are classified, particularly through P. Sengupta's framework, aiding balanced regional planning and development.	1,2,4	4, 6	U, Ap
Unit 2 West Bengal	CO2	Students will be able to understand the tectonic and geomorphic evolution of India's physiographic divisions and analyze the country's drainage systems and water resource challenges. They will gain insights into the changing patterns of industrialization in West Bengal, including the role of SEZs. Additionally, students will learn to interpret population dynamics and regional development by studying specific areas like the Darjiling Himalaya,	1,2,4	4, 5, 6	U, Ap

		Sundarbans, and Haldia.			
Unit 3 India and West Bengal Lab	CO3	Students will learn to analyze climatic variations using temperature and rainfall graphs from diverse physiographic regions of India. They will gain skills in visualizing industrial growth trends and evaluating regional development disparities using Kendall's Composite Index. Additionally, students will understand demographic shifts by mapping the change in the mean centre of population in West Bengal over time.	3,4	7, 10	U, Ap

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1	3	3		3				2		3						
CO2	3	3		3				3	2	3						
CO3			3	3							3			3		
Average	**3**	**3**	**3**	**3**				**2.5**	**2**	**3**	**3**			**3**		
Correlation level	1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)															

Semester-6 (January to June)
Core Course 15: Remote Sensing, GIS and GNSS
Course code: GEOG-H-CC15

Programme	B.Sc. HONS Geography
Course Code	Course Name
CC 12	REMOTE SENSING, GIS and GNSS
Year and Semester	3rd year 6th Semester
Prerequisite Course	Basic Class 12 Geography
Course Objective	To equip students with basic ideas and utilisation of remote sensing, GIS and GNSS

SL. No	**Course Outcome**	**On completing the course, the student will be able to:**	**PO Addressed**	**PSO Addressed**	**Cognitive Level**
Unit 1 Remote Sensing	CO1	Learn principles of remote sensing; image referencing scheme; preparation of FCC; Interpretation of image; acquisition and utilisation of DEM	2,3,4	10	U, Ap

Unit 2 GIS and GNSS	CO2	Learn GIS data structure and types; preparation of attribute table; data manipulation and overlay analysis; buffer preparation	2,3,4	10	U, Ap
Unit 3 GNSS	CO3	Understand principles of GNSS positioning and waypoint collection; transferring of GNSS waypoints to GIS; calculation of area and length	2,3,4	10	U, Ap
Remote Sensing, GIS and GNSS (Lab.)	CO4	Learn image georeferencing and enhancement, preparation of reflectance libraries; supervised image classification, class editing, and post-classification analysis; digitisation of features and administrative boundaries; data attachment, overlay, and preparation of annotated thematic maps; Waypoint collection from GNSS receivers and exporting to GIS database	2,3,4	10	U, Ap, An, C

	PO1	PO2	PO3	PO4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
CO1		3	3	3										3		
CO2		3	3	3										3		
CO3		3	3	3										3		
CO4		3	3	3										3		
Average		**3**	**3**	**3**										**3**		
Correlation level		1-Low(40%<Achievement<50%), 2- Medium (50%<Achievement<60%), 3- High (60%<Achievement)														