GOLAGHAT COMMERCE COLLEGE (AUTONOMUS)

PROGRAMME STRUCTURE OF FYUGP(Single Major)

Table 1 : Credit Distribution matrix of FYUGP (Single Major)										
Year	**Semester**	**Core**	**Minor**	**GEC**	**AEC**	**SEC**	**Internship/ Community Engagement/ Project**	**VAC**	**Research/ Dissertation/**	**Total**
1	I	4	4	3	4	3		2		20
	II	4	4	3	4	3		2		20
UG Certificate										**40**
2	III	4+4	4	3		3		2		20
	IV	4+4+4+4	4							20
UG Diploma		**32**	**16**	**09**	**08**	**09**		**06**		**80**
3	V	4+4+4	4				2 +2 (I + CE) OR 4 (I) / 4 (CE)			20
	VI	4+4+4+4	4							20
UG Degree		**60**	**24**	**-**	**-**	**-**	**04**	**-**	**-**	**120**
4	VII	4+4+4	4						4 (RM)	20
	VIII	4+4	4						8 (D)/4+4 (DSE)	20
Honours Degree		**80**	**32**	**-**	**-**	**-**	**-**	**-**	**12**	**160**
5	IX	4+4+4	4						4(P)/ 4 (DSE)	20
	X	4+4	4						8/4+4 (DSE)	20
PG Degree		**100**	**40**	**-**	**-**	**-**	**-**	**-**	**24**	**200**

FOUR YEAR GRADUATE PROGRAMME (FYUGP) IN GEOGRAPHY GOLAGHAT COMMERCE COLLEGE AUTONOMOUS

THE PREMBLE:

Geography introduces the discipline as a holistic study of the Earth, encompassing both physically and humans aspects. It is a vital discipline that helps as understand and appreciate the world we live in .

In the present day context, the significance of geography cannot be overstated . As the world become increasingly globalised, interdependent, and rapidly changing, Geography provides us with essential tool to analyse and interpret the challenges and opportunities that arise. For instance geospatial technology such as geography information system (GIS) , Remote sensing, and satellite imagery and extensively used in diverse fields, including urban planning, natural resources management, disaster response climate change adaptation, and public health. In summary geography is a discipline that contributes to our

knowledge and understanding of the world and helps us make informed decisions about our planet and future.

INTRODUCTION

The national education policy NEP of 2020 has introduced a revised syllabus for geography particularly of the undergraduate level. This syllabus aims to provide students with a holistic understanding of the subject, encompassing both physically and humans dimensions of geography. The NEP syllabus emphasis a balance approach. Integrating theoretical knowledge with practical application and field work.

AIMS OF FOUR YEAR UNDER GRADUATE PROGRAMME (FYUGP) IN EDUCATION

The aims of the four year undergraduate program in geography are:

(1) The FYUGP in geography aims students to gain a broad base knowledge of the natural and humans system that shape the Earth's landscapes and environments, as well as the social and cultural processes that influence them.

(2) It aims to introduce students to the breath and depth of the fields of geography including its sub-discipline theories, methods and application.

(3) It aims to provide students with opportunities to experiential learning and research, though field trips, internships, research project, and collaboration with faculty and peer.

(4) It aims to prepare graduate will be equipped with a range of transferable skill, including communication. Teamwork, leadership, and problem solving ,that will enable them to adapt to changing professional and social contexts.

GRADUATE ATTRIBUTES OF THE FYUGP IN GEOGRAPHY

(1) **Disciplinary knowledge**: Students will passes a deep and comprehensive understanding of the principals, theories and methodologies of the field of geography, including its sub-discipline. They will have a strong foundation in the theatrical and empirical understanding of geography.

(2) **Global and cultural competence**: Students have an understanding of the diverse cultural, social and economic context in which environments and social issues occur.

(3) **Ethical and professional practice**: Students will be committed to ethical and professional practice with an understanding of the ethical and legal issues involved in environmental and social problem solving .

(4) **Geopolitical literacy:** Students will have a thorough understanding of the principal of cartography spatial statistics and be able to apply these principles to real world problem with strong foundation in geospatial literacy, including the ability to analyse and interpret geospatial data use geographic information system (GIS) and apply remote sensing techniques.

(5)**CRITICAL THINKING AND PROBLEM SOLVING**: The NEP syllabus aims to develop students critical thinking and problem solving abilities, which are essential for navigating complex issue in the field.

Flexibility and exit options :

The NEP allows for flexibility in course structure, with multiple exit options at the end of the each year, providing students with different pathways bassed on their aspirations and careers goal .

Curriculum credit system (CBCS)

The NEP-2020 syllabus for geography is designed under the CBCS framework ,allowing students to choose course that align with their interests and academic goals.

- **PROGRAMME LEARNING OUTCOMES**
- PLO 1. Demonstrate a comprehensive understanding of the principles, concepts, and theories of geography, including its sub-disciplines such as physical geography, human geography, and geomatics.
- PLO 2. Conduct fieldwork and research projects, utilizing both qualitative and quantitative methods, to collect and analyze data on environmental and social phenomena.
- PLO 3. Communicate effectively in written, oral, and visual forms, to diverse audiences, including academic and non-academic audiences, using appropriate technologies and media.
- PLO 4. Work effectively in diverse teams, demonstrating leadership, communication, and collaboration skills, to solve complex environmental and social problems.

- PLO 5. Develop an interdisciplinary and holistic perspective on environmental and social issues, drawing on knowledge and methods from diverse fields such as ecology, economics, sociology, and political science.
- PLO 6. Demonstrate global and cultural competence, with an understanding of the diverse cultural, social, and economic contexts in which environmental and social issues occur.
- PLO 7. Apply ethical and professional standards, demonstrating a commitment to responsible and sustainable environmental and social practices.
- PLO 8. Engage in lifelong learning and professional development, staying abreast of current trends and advances in the field of geography, and contributing to the advancement of the discipline through research and practice.
- PLO 9. Apply critical thinking and problem-solving skills to analyze and interpret geospatial data and phenomena, and develop innovative and sustainable solutions to environmental and social issues.
- PLO 10. Utilize a range of geospatial technologies, including geographic information systems (GIS), remote sensing, and spatial statistics, to collect, manage, and analyze geospatial data.

4. Teaching Learning Process

The programme allows to use varied pedagogical methods and techniques both within classroom and beyond.

- Lecture
- Tutorial
- Power point presentation
- Documentary film on related topic
- Project Work/Dissertation
- Group Discussion and debate
- Seminars/workshops/conferences
- Field visits and Report/Excursions
- Laboratory Work
- Mentor/Mentee

5. Teaching Learning Tools

- Projector
- Smart Television for Documentary related topic
- LCD Monitor
- WLAN
- White/Green/Black Board
- Computer Lab with GIS and Remote Sensing tools
- Soil and Water Testing Lab
- UAV (Drones)
- Tracing Table

- Dumpy's Level, Theodolite
- GPS,
- Toposheets and Satellite Image
- Globes, Charts, Maps
- Plane Table Set, Prismatic Compass,
- Levelling Staff, Rotameter

6. Assessment

- Home assignment
- Project Report
- Class Presentation: Oral/Poster/Power point
- Group Discussions
- Seminars
- Laboratory work
- Peer review
- Quizzes
- Other participatory learning activities
- In semester examinations
- End Semester examinations

GOLAGHAT COMMERCE COLLEGE(AUTONOMOUS) , JYOTI NAGAR,GOLAGHAT-785621
FYUGP STRUCTURE AS PER UGC CREDIT FRAMEWORK

YEAR	SEMESTER	COURSE	TITLE OF THE COURSE	TOTAL CREDIT
Year 01	1st SEMESTER	GEOMAJ1	GEOMORPHOLOGY	4
		GEOMIN1	GEOMORPHOLOGY AND OCEANOGRAPHY	4
		GEOGEC1	PHYSICAL GEOGRAPHY	3
		SEC-1	DISASTER MANAGEMENT	3
	2nd SEMESTER	GEOMAJ2	CLIMATOLOGY	4
		GEOMIN2	CLIMATOLOGY AND BIOGEOGRAPHY	4
		GEOGEC2	FUNDAMENTALS OF GEOMORPHOLOGY	3
		VAC2	ENVIRONMENTAL SCIENCE	2
		SEC2	METHODS AND TECHNIQUES OF FIELD STUDY	3

Year 02	**3rd SEMESTER**	**GEOMAJ3 A**	**ENVIRONMENTAL GEOGRAPHY**	**4**
		GEOMAJ3 B	**REMOTE SENSING AND GIS IN GEOGRAPHY**	**4**
		GEOMIN3	**HUMAN SOCIAL AND CULTURAL GEOGRAPHY**	**4**
		GEOGEC3	**SETTLEMENT GEOGRAPHY**	**3**
		SEC3	**CARTOGRAPHIC TECHNIQUES**	**3**
	4th SEMESTER	**GEOMAJ4 A**	**HUMAN POPULATION AND SETTLEMENT GEOGRAPHY**	**4**
		GEOMAJ4 B	**POLITICAL GEOGRAPHY**	**4**
		GEOMAJ4 C	**STATISTICAL METHODS IN GEOGRAPHY**	**4**
		GEOMAJ4 D	**BIOGEOGRAPHY AND OCEANOGRAPHY**	**4**
		GEOMIN4	**GEOGRAPHY OF RESOURCES AND ECONOMY**	**4**

Grand Total (Semester I, II, III and IV)				**80**
The students on exit shall be awarded Undergraduate Diploma (in the Field of Study/Discipline) after securing the requisite 88 Credits on completion of Semester IV provided, they secure additional 4 credit in skill based vocational courses offered during First Year or Second Year summer term				
Year 03	5th Semester	C – 9	Regional Geography of World	4
		C – 10	Cartographic techniques and Map Projection	4
		C – 11	Economic Geography	4
		Minor 5	Population and Settlement Geography	4
			Internship+ Community Engagement (NCC /NSS /Adult Education /Student mentoring / NGO /Govt. Institutions, etc) or Internship/CE	2+2 Or 4/4
				20

Year 03	6th Semester	C – 12	Geographic Thought	4
		C – 13	Surveying techniques	4
		C – 14	Geography of India	4
		C – 15	Geography of North East India and Assam	4
		Minor – 6	Environmental Geography	4
			Total	**20**
Grand Total (Semester I, II, III and IV, V and VI)				**120**
The students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) Honours (3 years) after securing the requisite 132 Credits on completion of Semester 6				

SEMESTER-I

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 1st SEMESTER

TITLE OF COURSE : GEOMORPHOLOGY

COURSE CODE : GEOMAJ1

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

COURES OBJECTIVES:

- To enhance the learner's understanding of the branch of Geomorphology and its fundamental concepts.
- To acquire knowledge about the interior of the earth and its interior movements.
- To have an understanding of diverse geomorphic processes acting on the earth and their role on the development of different landform under different geo-climatic conditions.

To make the students comprehend the various processes responsible for the development of diverse landforms on the earth's surface.

UNITS	NAMES	CONTENT	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	a. Geomorphology: Meaning, Definition,Nature and Scope. b. Fundamental Geomorphic Concepts. c. Recent trend of development of Geomorphology	12	2		14

2 (15 marks)	Geomorphic processes (Endogenetic)	a. Earth: Interior structure and Isostasy b. continental Drift Theory c. Earth Movement Types of Fold and Fault, Plate Tectonic, concept of Geosyncline, Earthquake and volcanoes	13	2		15
3 (15 marks)	Geomorphic processes **(**Exogenetic) Evolution of landforms	a. Exogenetic processes - Weathering, Mass wasting , gradation. b. cycle of Erosion (Davis and penck) c. Evolution of landform (Erosional and depositional) Fluvial, karst, Aeolian, Glacial and coastal.	14	2		16
4 (15 marks)	PRACTICAL	a. Topographical Map - Interpretation of topographical Map. Profile Drawing (serial, superimposed, projected And composite) b. Interpretation of Transact charts. c. Morphometric Analysis Drainage ordering basin area demarcation drainage density. Bifurcation Ratio.		2	28	30
		TOTAL	39	8	28	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment- 5 marks**

LEARNIMG OUTCOMES: By the end of this course, students will have a solid understanding of the fundamental principles of geomorphology and the tools necessary to analyze and interpret landscapes and landforms. This knowledge will be valuable in a range of careers, including environmental management, land-use planning, and resource management.

Suggested Readings:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company

4. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
7. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
9. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
10. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut 11. Tikkaa, R N (1989): BhautikBhugol ka Swaroop, Kedarnath Ram Nath, Meerut

Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 1st SEMESTER

TITLE OF COURSE : GEOMORPHOLOGY AND OCEANOGRAPHY

COURSE CODE : GEOMIN1

NATURE OF COURSE : MINOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

COURSE OBJECTIVES:

- The objective of this minor course in Geomorphology and Oceanography is to introduce undergraduate students to the fundamental principles, theories, and applications of the two fields.
- The course aims to equip students with the knowledge and skills necessary to understand the interactions between the Earth's surface processes and the ocean, and the dynamic nature of coastal and marine environments.
- To enhance the learner's understanding of the branch of Geomorphology and Oceanography and its fundamental concepts.
- To acquire knowledge about the interior of the earth and its interior movements.
- To have an understanding of diverse geomorphic processes acting on the earth and their role on the development of different landform under different geo-climatic conditions.
- To make the students comprehend the various processes responsible for the development of diverse landforms on the earth's surface.
- Develop practical skills in fieldwork, laboratory analysis, and data interpretation in both geomorphology and oceanography.

UNITS	NAME	CONTENT	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	a. Meaning and scope of Geography b. Geomorphology : Meaning and Definition , nature and scope c. Fundamental concept of Geomorphology.	12	2		14
2 (15 marks)	Geomorphic processes (Endogenetic and Exogenetic)	a. Earth: Interior structure and Isostasy. b. Earth Movement: Types of Fold and Fault, Plate Tectonic, Earthquake and volcanoes. c. Exogenetic process -Weathering, Mass Wasting d. Cycle of Erosion Davis and penck.	15	2		17
3 (15 marks)	Introduction to oceanography	a. Meaning nature and scope of Oceanography. b. ocean floor Topography and oceanic movement - Waves, currents and Tides. c. Ocean salinity and Temperature Distribution and determinats.	12	2		14
4 (15 marks)	PRACTICAL	a. Topographical Map - Interpretation of topographical Map, Profile Drawing (serial, superimposed, projected amd composite) b. Stream ordering Bathymetric and hypsometric curve.	8	2	20	30
		TOTAL	47	8	20	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment- 5 marks**

LEARNIMG OUTCOMES: Upon completion of this minor course in Geomorphology and Oceanography, students will be able to:

1. Identify and explain the fundamental principles and processes that shape the Earth's surface, such as plate tectonics, weathering, erosion, and sediment transport.
2. Analyze the physical, chemical, and biological processes that govern the ocean's behaviour, including the factors that control circulation patterns, waves, tides, and marine life.
3. Describe the relationships between coastal geomorphology and oceanography, and the impact of wave action, tides, and sea-level change on coastal landforms.
4. Assess the impact of human activities on coastal and marine environments, including pollution, coastal erosion, and sea-level rise.

5. Evaluate and synthesize scientific literature related to the fields of geomorphology and oceanography, and communicate scientific ideas effectively through written and oral presentations.
6. Demonstrate practical skills in fieldwork, laboratory analysis, and data interpretation in both geomorphology and oceanography.

Overall, the learning outcomes of this minor course are to equip students with a solid understanding of the principles and applications of geomorphology and oceanography, and to develop the skills necessary to analyze and interpret data in order to solve real-world problems related to coastal and marine environments.

Suggested Readings:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
5. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
6. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
7. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
8. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
9. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
10. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut 11. Tikkaa, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
11. Singh, S (2009):BhautikBhugol ka Swaroop, Prayag Pustak,Allahabad
12. Alan P. Trujillo , Harold V. Thurman (2016):Essentials of Oceanography, 12th Edition, Pearson
13. K. Siddhartha (2018): Oceanography: A Brief Introduction, Kitab Mahal

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 1st SEMESTER

TITLE OF COURSE : PHYSICAL GEOGRAPHY

COURSE CODE : GEOGEC1

NATURE OF COURSE : GENERIC ELECTIVE COURSE (GEC)

TOTAL CREDITS : 3 CREDITS

DISTRIBUTION OF MARKS : 45(End sem) +30(In sem)

COURSE OBJECTIVES:

- To explain the concept, definition and scope of earth systems.
- To understand the atmospheric composition and structure.
- To acquire knowledge about the interior of the earth and its interior movements.

UNITS	NAMES	CONTENT	L	T	P	Total Hours
1 (15 marks)	Introduction to Physical Geography	a. physical Geography Meaning and scope. b. Earth Movement: orogenic and c. Epeirogenic ; Earth's Interior and structure d. c)Earthquakes and Volcanoes(distribution, causes effects)	14	1		15
2 (15 marks)	Atmosphere	a. Definition, composition and structure of Atmosphere b. Temperature: Factors and distribution of Insolation and heat a. Budget c. Atmosphere moisture - Evaporation, condensation, Humidity, precipitation and its type d. Atmosphere pressure and winds, types of planetary winds.	14	1		15
3 (15 marks)	Hydrosphere	a. Concept of Hydrological cycle b. Meaning and scope of oceanography c. Ocean floor Topography and oceanic Movement - waves, current, tides d. Ocean salinity and Temperature Distribution and Determinates.	14	1		15
		TOTAL	42	3		45

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 30 marks

- **Two internal examination - 20 Marks**

- **Attendance -- 5 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOMES: The programme learning outcomes for the "Physical Geography" Multi-Disciplinary Generic Elective course include:

1. Demonstrate a deep understanding of the physical processes that shape the Earth's surface, including landforms, climates, soils, water, and natural hazards.
2. Analyze and evaluate complex information related to physical geography, drawing on a range of different sources and perspectives to develop informed conclusions.
3. Apply knowledge and skills related to physical geography to real-world problems, such as natural hazards and land-use planning.
4. Communicate ideas and findings effectively, both orally and in writing, to different audiences, including academic, professional, and public audiences.
5. Apply an interdisciplinary perspective to the study of physical geography, drawing on insights from different disciplines, such as geology, meteorology, and hydrology, to develop a comprehensive understanding of the field.
6. Demonstrate proficiency in fieldwork and laboratory exercises related to physical geography, including data collection and analysis.

Overall, the programme learning outcomes for the "Physical Geography" Multi-Disciplinary Generic Elective course would reflect a range of skills and knowledge that would be valuable to students pursuing careers in fields such as environmental science, resource management, and geography. Graduates would be equipped with a deep understanding of the physical processes that shape our planet, as well as the skills and expertise necessary to address real-world problems related to physical geography.

Suggested Readings:

1. Barry,R.G.andChorley,R.J.(1998).Atmosphere,WeatherandClimate.Routledge, London.
2. Bryant,H.Richard(2001).PhysicalGeographyMadeSimple.RupaandCo.,NewDe lhi.
3. Bunnett,R.B.(2003).PhysicalGeographyinDiagrams,FourthGCSEeditio n,PearsonEducation(Singapore)PvtLtd.
4. GarrisonT(1998).Oceanography.WordsworthCp,Bedmont.
5. Lake,P.(1979).PhysicalGeography(English&HindiEdition)Cambridge Univ.Press,Cambridge.
6. Monkhouse,FI(1979).PhysicalGeography,Methuen,London.
7. Singh,S.(2003).PhysicalGeography(EnglishandHindiEditions)PrayagP ustakBhawan,Allahabad.
8. Singh,M.B.(2001)BhoutikBhoogol,TaraBookAgency,Varanasi.
9. Strahler,A.N.andStrahlerA.M.(1992).ModernPhysicalGeography,JohnW ileyandSons,NewYork

Wooldridge,S.W.andMorgan,R.S.(1959).ThePhysicalBasisofGeography:AnOutlineofGe omorphology.Longman,London.

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 1st SEMESTER

TITLE OF COURSE : DISASTER MANEGEMENT

COURSE CODE : SEC1

NATURE OF COURSE : SKILL ENHANCEMENT COURSE(SEC)

TOTAL CREDITS : 3 CREDITS(2+1=3)

DISTRIBUTION OF MARKS : 45(End sem) (30 T+15P)+30(In sem)

COURSE OBJECTIVES:

- The main objective of this course is to make the students aware about the concepts of hazards, disasters, risk and vulnerability.
- In this course an attempt has been made to prepare the students about the Do's and Don'ts during and post disaster

UNITS	NAME	CONTENTS	L	T	P	Total Hours

1 [10 marks]	Disasters	a. Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification b. Manmade disasters: Causes, Impact and Distribution	9	1		10
2 [10 marks]	Disasters in India	a. Disasters in India :Earthquake, Tsunami, Drought- Causes, impact and distribution. b. Disasters in India : Flood, cyclone, landslide; Causes impact and distribution	9	1		10
3 [10 marks]	Response and Mitigation to Disasters	a. Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During and Post Disaster.	9	1		10
4 [15 marks]	Field Work (Practical)	a. Field Work (Flood, Landslide, Drought, Earthquake, Cyclone and Manmade Disaster)		2	13	15
		TOTAL	27	5	13	45

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 30 marks

- **Two internal examination - 10 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOMES:

The learning outcomes of this course in Disaster Management is aimed to equip students with the knowledge, skills, and attitudes necessary to understand and effectively respond to disasters. Here are some common learning outcomes for such a course:

1. Knowledge of Disaster Types and Causes:
    - Understand the different types of disasters, such as natural disasters (e.g., earthquakes, floods, hurricanes) and human-made disasters (e.g., industrial accidents, terrorist attacks).
    - Comprehend the underlying causes and factors that contribute to the occurrence and severity of disasters, including geological, climatic, environmental, and socio-economic factors.
2. Understanding Disaster Risk Reduction:
    - Gain knowledge about the principles and practices of disaster risk reduction, including vulnerability assessment, hazard mapping, and early warning systems.
    - Understand the importance of community resilience and capacity building in reducing the impact of disasters.

- Learn about disaster risk management frameworks, policies, and international agreements.

3. Emergency Response and Preparedness:
    - Develop an understanding of emergency response systems, including the roles and responsibilities of different stakeholders (e.g., government agencies, NGOs, communities).
    - Acquire knowledge of emergency planning, coordination, and communication strategies.
    - Learn about the importance of preparedness measures, such as evacuation planning, emergency shelters, and resource management during disasters.
4. Disaster Impact Assessment and Recovery:
    - Learn methods and techniques for assessing the social, economic, and environmental impacts of disasters.
    - Understand the principles and processes involved in post-disaster recovery and reconstruction.
    - Explore the challenges and strategies associated with restoring livelihoods, infrastructure, and community well-being after a disaster.
5. Risk Communication and Public Awareness:
    - Develop skills in effective risk communication, including the ability to disseminate accurate and timely information to the public during emergencies.
    - Understand the role of media and technology in disaster communication.
    - Recognize the importance of public awareness campaigns in promoting a culture of safety and preparedness.
6. Ethical and Professional Considerations:
    - Reflect on the ethical dimensions of disaster management, including issues of equity, social justice, and human rights.
    - Understand professional responsibilities and ethical guidelines for practitioners in the field of disaster management.
    - Develop critical thinking skills to assess and address ethical dilemmas that may arise during disaster response and recovery efforts.

By achieving these learning outcomes, students will be equipped with the necessary knowledge and skills to contribute to effective disaster management, both in terms of preparedness and response. They will also be better prepared to address the social, economic, and environmental challenges that arise in the aftermath of disasters.

Suggested Readings:

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi.
4. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3
5. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi.

7. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht.
8. Singh Jagbir (2007) "Disaster Management Future Challenges and Oppurtunities", 2007.PublisherI.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 2nd SEMESTER

TITLE OF COURSE : CLIMATOLOGY

COURSE CODE : GEOMAJ2

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objective: The objectives of this Course are:

1. To scientific understanding of the physical aspects of Earth's climate system and the factors that influence climate change.
2. To explore the global balance of energy and transfer of radiation in the atmosphere through in-depth quantitative analysis and the general circulation of winds.
3. To highlight important atmospheric phenomena and their direct bearing on man. It emphasis is on understanding the weather phenomena and its impact on day to day life.

UNITS	NAME	CONTENT	L	T	P	Total Hours
1 (15 marks)	Composition Structure and Temperature of Atmosphere	a. Climatology: Meaning, Nature and Scope. b. Atmospheric Composition and Structure. c. Temperature Distribution, Insolation, Heat Budget, Temperature Inversion	10	2		12
2 (15 marks)	Atmospheric Pressure and Winds	a. Planetary winds, forces affecting planetary wind, Global circulation of permanent wind system and jet streams. b. Concept of Airmass and Fronts, cyclones and Anticyclones, Local winds.	13	3		16
3 (15 marks)	Atmospheric Moisture, Weather and Climate	a. Evaporation, Humidity Condensation, Fog and Clouds, Precipitation and its types. b. Elements and factors of weather and climate.	15	2		17

		c. Climatic classification: Koeppen and Thornthwaite.				
4 (15 marks)	Practical	a. Study of weather symbols and Interpretation of weather map. b. Representation of climatic data: [i] Preparation Of Climograph, Hythergraph and Ergograph and their interpretation [ii] Rainfall distribution map of Assam		2	28	30
		TOTAL	38	9	28	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment- 5 marks**

Learning Outcomes: *On completion of this Course, a student will be able to –*

(1) understand the mean global atmospheric circulations and disturbances,
(2) world climate systems, climatic variability and change,
(3) impact of human activities

Suggested Readings:

1. Anthes R. A., Panofsky H. A., Cahir J. J. and Rango A., 1978: The Atmosphere, Columbus.

2. Barry R. G. and Carleton A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.

3. Barry R. G. and Corley R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York.

4. Batten L. J., 1979: Fundamentals of Meteorology, Prentice-Hall Inc., Englewood Cliffs, New Jersey. 5. Boucher K., 1975: Global Climates, Halstead Press, New York.

5. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi

6. Das, P.K.,1968: The Monsoon, National Book Trust, New Delhi.

7. Hobbs, J.E.,1980: Applied Climatology, Butterworth.

8. Lal, D.S.,1998: Climatology, Sharda Pustak Bhawan, Allahabad.

9. Lockwood, J.G.,1976: World Climatology-Environmental Approach, Ed. Arnold Ltd.

10. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey

11. Menon,P.A.,: Our Weather, National Book Trust

12. Miller, A.A.,1953: Climatology, Dutton.

13.Oliver J. E. and Hidore J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.

14. Stringer, E.N., 1982: An Introduction to Climate, International Studies.

15. Thompson D. R. and Perry A. (eds.), 1997: Applied Climatology: Principles and Practice, Routledge, USA and Canada.

16. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 2nd SEMESTER

TITLE OF COURSE : CLIMATOLOGY AND BIOGEOGRAPHY

COURSE CODE : GEOMIN2

NATURE OF COURSE : MINOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The instructional objectives of this Course are:

1. To scientific understanding of the physical aspects of Earth's climate system and the factors that influence climate change.
2. To explore the global balance of energy and transfer of radiation in the atmosphere through in-depth quantitative analysis and the general circulation of winds.
3. To highlight important atmospheric phenomena and their direct bearing on man. It emphasis is on understanding the weather phenomena and its impact on day to day life.

UNITS	NAME	CONTENT	L	T	P	Total Hours

1 [15 marks]	Introduction to Climatology	a. Meaning, Nature and scope of climatology. b. Composition and structure of Atmosphere c. Temperature distribution, Insolation, Temperature inversion.	12	1		13
2 [15 marks]	Atmospheric Pressure and Wind	a. Atmospheric Pressure and wind: Planetary wind, Forces affecting winds, General circulation, Jet Streams. b. Concept of Airmass and Fronts, Cyclones and Anticyclones, Local winds c. Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation and its types d. Koeppen's climatic classification	14	1		15
3 [15 marks]	Biogeography	a. Bio-geography: Meaning, Scope and Significance. b. World distribution of plants and its relation to soil, climate and Human activities. c. Soil: Soil forming processes, classification and distribution of soil, soil horizon and profile, Major soil type of India.	15	2		17
4 [15 marks]	Practical	a. Interpretation of various weather symbols depicted on maps b. Preparation of rainfall-temperature graphs; Hythergraph and Climograph C. Mapping of protected areas (National Park, biosphere reserve and wildlife sanctuary) of India. Mapping of Biodiversity hotspots of the world and India.	7	3	20	30
		TOTAL	48	7	20	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

Learning Outcomes: On completion of this Course, a student will be able to –

(1) understand the mean global atmospheric circulations and disturbances,

(2) world climate systems, climatic variability and change, impact on human activities

Suggested Readings:

1. Anthes R. A., Panofsky H. A., Cahir J. J. and Rango A., 1978: The Atmosphere, Columbus.

2. Barry R. G. and Carleton A. M., 2001: Synoptic and Dynamic Climatology, Routledge, UK.
3. Barry R. G. and Corley R. J., 1998: Atmosphere, Weather and Climate, Routledge, New York.
4. Batten L. J., 1979: Fundamentals of Meteorology, Prentice-Hall Inc., Englewood Cliffs, New Jersey. 5. Boucher K., 1975: Global Climates, Halstead Press, New York.
5. Critchfield H. J., 1987: General Climatology, Prentice-Hall of India, New Delhi
6. Das, P.K.,1968: The Monsoon, National Book Trust, New Delhi.
7. Hobbs, J.E.,1980: Applied Climatology, Butterworth.
8. Lal, D.S.,1998: Climatology, Sharda Pustak Bhawan, Allahabad.
9. Lockwood, J.G.,1976: World Climatology-Environmental Approach, Ed. Arnold Ltd.
10. Lutgens F. K., Tarbuck E. J. and Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, Prentice-Hall, Englewood Cliffs, New Jersey
11. Menon,P.A., : Our Weather, National Book Trust
12. Miller, A.A.,1953: Climatology, Dutton.
13.Oliver J. E. and Hidore J. J., 2002: Climatology: An Atmospheric Science, Pearson Education, New Delhi.
14. Stringer, E.N., 1982: An Introduction to Climate, International Studies.
15. Thompson D. R. and Perry A. (eds.), 1997: Applied Climatology: Principles and Practice, Routledge, USA and Canada.
16. Trewartha G. T. and Horne L. H., 1980: An Introduction to Climate, McGraw-Hill.
17. Cox, C. B., R. Ladle, and P. D. Moore. 2016. Biogeography: An Ecological and Evolutionary Approach. John Wiley & Sons.
18. Darwin, C. 1859. The Origin of Species. P. F. Collier & Son.
19. Flannery, T. 2015. The Eternal Frontier: An Ecological History of North America and Its Peoples. Grove/Atlantic, Inc.
20. Gavin, D. G. 2012. Biogeography. Pages 77-89 in J. P. Stoltman, editor. 21st Century Geography: A Reference Handbook. SAGE Publications, Thousand Oaks, CA.
21. Jackson, S. T. 2004. Quaternary biogeography: Linking biotic responses to environmental variability across timescales. Pages 47-65 in M. V. Lomolino and L. R. Heaney, editors. Frontiers of Biogeography: New Directions in the Geography of Nature. Sinauer, Sunderland, MA.

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 2nd SEMESTER

TITLE OF COURSE : FUNDAMENTALS OF GEOMORPHOLOGY

COURSE CODE : GEOGEC2

NATURE OF COURSE : GENERIC ELECTIVE COURSE (GEC)

TOTAL CREDITS : 3 CREDITS

DISTRIBUTION OF MARKS : 45 (End Sem) + 30 (In-sem)

COURSE OBJECTIVES:

1. To introduce the meaning, nature, scope and concepts in Geomorphology in adequate manner, many facets of surface relief features.
2. To understand various aspects of their growth and evolution on the Earth.
3. To understand the work of running water, Underground water, moving ice, wind and sea waves, Weathering and Mass Wasting–Concept

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 [15) marks]	Principles of Geomorphology	a. Meaning, nature and scope. b. Fundamental concepts in Geomorphology. c. The place of Geomorphology in Physical Geography.	12	3		15

2 [15 marks]	Interior of The Earth	a. Earth's Interior: Wegener's continental drift theory. b. Earthquake and Volcanoes. c. Plate tectonics: types of plates and plate boundaries.	12	3		15
3 [15 marks]	Evolution of Landforms due to Endogenetic & Exogenetic Forces	a. Earth movement: orogenic and epeirogenic and Folds and Faults. b. Weathering and Mass-wasting: concept and types.	12	3		15
		TOTAL	36	9		45

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 30 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOMES:

After the completion of this course, the learner will be able to: provide an understanding of the conceptual and dynamic aspects of landform development. Students will also learn the relevance of Geomorphology in various fields.

SUGGESTED READINGS:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.

2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.

3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company

4. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut

5. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.

6. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.

7. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.

8. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP

9. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons

10. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 2nd SEMESTER

TITLE OF COURSE : ENVIRONMENTAL SCIENCE

COURSE CODE : VAC-2

NATURE OF COURSE : VALUE ADDED COURSE

TOTAL CREDITS : 2 CREDITS

DISTRIBUTION OF MARKS : 30(End sem) + 20 (In Sem)

Course Objectives: The course triggers to

1. Understand the concept, nature and scope, concepts and developments of environmental education;
2. Learn concept of ecosystem, its structure and function, ecology, types and components of ecology;
3. Understand the Human-Environment relationship in different biomes and human adaptations;
4. Learn about environmental degradation and restoration.

UNITS	NAMES	CONTENT	L	T	P	Total Hours
1 [10 marks]	Introduction Of Environmental Science	a. Nature, meaning and scope of environmental science. b. B. Climate change :- its cause and consequences.	8	1		9
2 [10 marks]	Natural resources	a. Concept, Meaning and Nature of resources. b. Renewable and non-renewable resources and its types. c. Land degradation, man induced landslide, soil erosion, deforestation, global warming.	8	1		9
3 [10 marks]	Ecosystem	a. Concept of ecosystem its structure and functions. b. Energy flow in the ecosystem, Food Chain, Food Webs and ecological pyramids.	10			10

		c. Threads to biodiversity and conservation of biodiversity .				
		TOTAL	26	2		28

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 20 marks

- **Two internal examination - 10 Marks**
- **Group discursion / seminar/ home assignment -- 10 Marks**

LEARNING OUTCOMES: After successful completion of this course students will be able to understand: to come up with using ethical reasoning for decision making and frame ethical issues as well as operationalize ethical choices. The course integrates various facets of human values and environment.

SUGGESSTED READINGS:

1. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
2. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
3. Mckinney, M.L. & School, R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p.
4. Mhaskar A.K., Matter Hazardous, Techno-Science Publication (TB) n) Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
5. Odum, E.P., Odum, H.T., and Andrews, J. (1971). Fundamentals of Ecology. Saunders, Philadelphia, USA
6. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y., and Berg, L.R. (2015). Environment, 8thEdition. Wiley Publishing, USA.
7. Singh, J.S., Singh, S.P., and Gupta, S.R. (2017). Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi. Chapter 1 (Page: 3-28)

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 2nd SEMESTER

TITLE OF COURSE : METHODS AND TECHINQUIS OF FIELD STUDY

COURSE CODE : SEC2

NATURE OF COURSE : SKILL ENHANCEMENT COURSE(SEC)

TOTAL CREDITS : 3 CREDITS(2+1=3)

DISTRIBUTION OF MARKS : 45(End sem) (30T+15P)+30(In sem)

Course objectives: The objective of the course is

1. to enhance the learner with the concept of field study, the different types of data collected from the field and its importance in the geographical studies.
2. to make the students understand the different techniques involved in the process collection of primary data, the preparation of questionnaire and schedule and the systematic representation of data through tabulation, processing and analysis.
3. to develop the conceptual and theoretical ideas on how to prepare a field report and the use of different quantitative techniques, diagrams, maps, photograph essential for a meaningful research.
4. to develop the practical knowledge and skill of the learners in conducting the field study, collection of data and its preparation.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 [10 marks]	Introduction	a. Field study and its importance in Geography b. Types of data	5	1		6
2 [10 marks]	Techniques of data collection	a. Techniques of data collection: Primary and Secondary b. Preparation of questionnaire and schedule c. Data tabulation, processing and analysis	10	2		12
3 [10 marks]	Designing the field report	a. Designing the field study report: Aims and objectives, methodology and interpretation. b. Use of Tables, Charts, Diagrams, Maps and Photographs in the report	10	2		12
4 [15 marks]	Practical	a. Field study and data collection b. Preparation and presentation of report		2	13	15

		TOTAL	25	7	13	45

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 30 marks

- **Two internal examination - 10 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

Learning outcome:

1. understanding the need and importance of fieldwork in the geographical studies and the collection of different data
2. The students will develop the idea of the methods of collection of primary data, preparation of questionnaire and schedule and its application. The students will be able to represent the complex data in a simpler form through tabulation for systematic analysis and logical representation of data.
3. The students will understand the structure of preparing a field report and the use of different qualitative and quantitative techniques for easy comprehension of data.

Reference books:

1. Archeer, J.E. and Dalton, T.H. (1968). *Fieldwork in Geography*, London.
2. Jones, P.A. (1968). *Fieldwork in Geography*, London.
3. Gloodard, R.H., (1982). *Field Techniques and Research Methods in Geography*, Dubuque.
4. Wheeleso, K.S. and Harding, M., (1965).*Geographical Fieldwork*, London.

SEMESTER-III

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 3rd SEMESTER

TITLE OF COURSE : ENVIRONMENTAL GEOGRAPHY

COURSE CODE : GEOMAJ3 A

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The course triggers to

1. Understand the concept, nature and scope, concepts and developments of environmental geography;
2. Learn concept of ecosystem, its structure and function, ecology, types and components of ecology;
3. Understand the Human-Environment relationship in different biomes and human adaptations;

4. Learn about environmental degradation and restoration.

UNITS	NAME	CONTENT	L	T	P	Total Hours
4 [15 marks]	Environment Geography	a. concept nature and scope of Environmental Geography. b. b. Ecology: Meaning, Nature ,types and principle of ecology.	12	3		15
4 [15 marks]	Ecosystem	a. Ecosystem: concept, types, structure and functions. b. concept of Biodiversity and relevance of its preservation . c. c. Biomes: concept and types .	12	3		15
4 [15 marks]	Environmental problems	a. Environmental Degradation : pollution ,its causes and types. b. Environmental Hazards: Meaning and types. c. Policies of Environmental protection and conservation , concept of EIA.	12	3		15
4 [15 marks]	Practical	Field observation and Data collection a. Conduct a field trip to a nearby ecosystem such as a forest, wetland etc) and observe the physical features of the environment and problems faced there in. b. Collect data on various environmental parameters like temperature, humidity, wind speed/soil composition using appropriate instrument c. Identify and document different species of plants and animals found in the area.		2	43	45
		TOTAL	36	11	43	90

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOMES: After successful completion of this course students will be able to understand: to come up with using ethical reasoning for decision making and frame ethical issues as well as operationalize ethical choices. The course integrates various facets of human values and environment.

SUGGESSTED READINGS:

1. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
2. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
3. Mckinney, M.L. & School, R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition. 639p.
4. Mhaskar A.K., Matter Hazardous, Techno-Science Publication (TB) n) Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
5. Odum, E.P., Odum, H.T., and Andrews, J. (1971). Fundamentals of Ecology. Saunders, Philadelphia, USA
6. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y., and Berg, L.R. (2015). Environment, 8thEdition. Wiley Publishing, USA.
7. Singh, J.S., Singh, S.P., and Gupta, S.R. (2017). Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi. Chapter 1 (Page: 3-28)

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 3rd SEMESTER

TITLE OF COURSE : REMOTE SENSING AND GIS IN GEOGRAPHY

COURSE CODE : GEOMAJ3 B

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The course triggers to

1. Understand the principles of remote sensing, including the properties of electromagnetic radiation, sensors, and platforms.
2. Analyse remote sensing data using image processing techniques such as image enhancement, classification, and interpretation.
3. Understand the principles of GIS, including data management, spatial analysis, and cartography.
4. Use GIS software to create, manage, and analyse spatial data, including data from remote sensing sources.
5. Apply remote sensing and GIS techniques to solve real-world problems in the field of Geography, such as land-use change detection, natural resource management, and urban planning.
6. Critically evaluate remote sensing and GIS research literature, including understanding the strengths and limitations of different approaches and methods.
7. Communicate effectively about remote sensing and GIS research and applications, both in written and oral forms.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 [15 marks]	Remote Sensing	a. Meaning and definition of Remote Sensing, Principles of Remote sensing, Historical Development of Remote sensing. b. Types of Remote sensing (Air born, space borne) Platforms and Types of Satellites, sensors. c. Electromagnetic Spectrum, EMR Interactions with Atmosphere and earth surface.	12	3		15
2 [15 marks]	GIS	a. Meaning and definition of GIS, Components, Historical development. b. Spatial and non-spatial data, Raster and Vector data Structure c. Collection of Spatial Data: Point, Line, Polygon.	12	3		15
3 [15 marks]	Fundamentals of Digital Image	a. Digital image and its types b. Characteristics: Spectral, Spatial, Radiometric and Temporal resolution c. Elements of Image Interpretation d. Digital Image Processing: Components and Steps.	12	3		15

4 [15 marks]	Practical	a. Satellite Image interpretation; Delineation of landforms, river basin, land use/land cover. b. GPS: Ground verification c. Concept of visual and digital images processing, Geo-Referencing, radiometric and geometric Correction, filtering, editing and output using GIS Software		2	28	30
		TOTAL	36	11	28	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNIMG OUTCOMES:

After the completion of this course, students should be able to:

1. Practical knowledge on use of artificial intelligence and machine learning in Geography
2. Remote sensing and GIS would open up the technical ability for further research
3. Could relate geography to real world problems and capacity building for its investigation and management though artificial intelligence.

SUGGESTED READINGS:

1. Campbell J. B., 2007: *Introduction to Remote Sensing*, Guildford Press.
2. Jensen, J.R., 2004: *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice Hall.
3. Joseph, G. 2005: *Fundamentals of Remote Sensing*, United Press India.
4. Lillesand, T.M., Kiefer, R.W. and ChipmanJ.W.,2004: *Remote Sensing and Image Interpretation*, Wiley.(Wiley Student Edition).
5. Nag, P. and Kudra, M.,1998:*Digital Remote Sensing*, Concept, New Delhi.
6. Rees, W.G., 2001:*Physical Principles of Remote Sensing*, Cambridge University Press.
7. Singh, R.B.and Murai, S.,1998: *Space-informatics for Sustainable Development*, Oxford and IBHPub.
8. Wolf, P.R. and Dewitt, B.A.,2000: *Elements of Photogrammetry: With Applications in GIS*, McGraw-Hill.

9. Sarkar, A.(2015): Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi
10. Chauniyal, D.D. (2010) Sudur Samvedanevam Bhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 3rd SEMESTER

TITLE OF COURSE : HUMAN,SOCIAL AND CULTURAL GEOGRAPHY

COURSE CODE : GEOMIN3

NATURE OF COURSE : MINOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The course triggers to

1. Introduction to Human, Social and Cultural Geography
2. To know different approaches of geographical studies and its importance
3. Understand the spatial distribution, social problems related to the subject components
4. Develop practical skilled to use statistics and graphical techniques in geography

UNITS	NAME	CONTENT	L	T	P	Total Hours
1 [15 marks]	HUMAN GEOGRAPHY	a. Definition, Nature, major Branches of Human Geography b. Schools: Determinism, possibilism and Neo-Determinism; c. Human Groups(races) : Classification and their spatial distribution	12	3		15

2 [15 marks]	SOCIAL GEOGRAPHY	a. Definition, nature and scope of social Geography b. Concept and types of space in social Geography c. Social problem in India: Education, health, Houshing and crime d. Social categories: caste, religion, race and their spatial distribution	12	3		15
3 [15 marks]	SETTLEMENT GEOGRAPHY	a. Settlement: concept, origin and classification b. Rural settlement: evolution, site and situation factors, patterns and types c. Urban settlement Growth, functional classification of town d. Hierachy of settlement, primate city and urban fringe, christaller's central place theory	12	3		15
4 [15 marks]	PRACTICAL	a. Preparation of population growth Curve - Assam and India b. Preparation of population distribution and density maps of Assam and India c. Age sex pyramid for developed and developing countries d. Histogram, line graph pie diagram	8	2	20	30
		TOTAL	44	11	20	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNIMG OUTCOMES:

After the completion of this course, students should be able to:

1. Understand the human, social and cultural aspect in geography
2. Evaluate the potential social and cultural problems and prospects
3. Aware of social and cultural conservation plan of India

4. Development technical skill of spatial data interpretation in practical

SUGGESTED READINGS:

1. Smith, David M. (1977): Human Geography- A Welfare approach, Arnold-Hinmann, London. 11.
2. Hussain, Majid (1994): Human Geography, Rawat Publications, Jaipur.
3. Ahmed, A, (1999) Social Geography, Rawat publications, Jaipur.
4. Registrar General of India, (1972) , Economic and Socio cultural Dimensions of
5. Regionalization of India, Census Centenary Monograph No 7, New Delhi.
6. Ahmad ,A, (1993) (ed) Social Structure and regional Development: A Social Geography
7. Perspective, Rawat Publications, Jaipur.
8. Sen, J,(2012) Social and Cultural Geography, Kalyani Publishers, New Delhi.
9. Subba Rao B. (1958), 'Personality of India', MS University Press, Baroda.
10. Pain R, M. Barke, D Fuller, J Gough, R MacFarlane, G Mowl, (2001), Introducing Social
11. Geographies, Arnold Publishers, London.
12. 8. Dutt NK.,(1986), Origin and Growth of Caste in India, Firma Kin, Calcutta.
13. 9. Taher, M,(2017), Social Geography, Ashok Book Stall, Guwahati.
14. Sopher D. (1980) (ed) 'An Exploration of India: Geographical Perspectives on Society and Culture', Cornell Press, New York.

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 3rd SEMESTER

TITLE OF COURSE : SETTLEMENT GEOGRAPHY

COURSE CODE : GEOGEC3

NATURE OF COURSE : GENERIC ELECTIVE COURSE (GEC)

TOTAL CREDITS : 3 CREDITS(2+1=3)

DISTRIBUTION OF MARKS : 45(End sem) +30(In sem)

Course Objectives: The course triggers to

1. To introduce settlement geography, nature, scope and classification
2. To understand concept of rural and urban settlement and development
3. To learn the basics of settlement theory

UNITS	NAMES	CONTENTS	L	T	P	Total Hours
1 [15 marks]	Introduction to Settlement Geography	a. Definition, nature and scope of settlement Geography b. Settlement: Definition and Types c. Factors affecting settlement distribution	8	4		12
2 [15 marks]	Rural Settlement	a. Origin and growth of rural settlement b. Types and Patterns of Rural Settlement c. Evolution of rural settlement and problems of rural settlement in India	8	4		12
3 [15 marks]	Urban Settlement	a. Origin and growth of Urban settlement b. Basis of Classification and Functional classification of town, problems of urban settlement in India c. Trend of urbanization and problems of urbanization in India	8	4		12
		TOTAL	24	12		36

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 30 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNIMG OUTCOMES:

After the completion of this course, students should be able to:

1. Understand the basic concept of settlement geography and its components
2. Learn the criteria of rural and urban settlement and their growth
3. Evaluate theoretical concept of settlement on other geographic variables.

SUGGESTED READINGS:

1. Chorley, R.J. and Haggett, P.,1967: Models in Geography, Methuen, London.
2. Gregory,D.,1978:Ideology,ScienceandHumanGeography,Hutchin,Londan
3. Huntington, E,1951 Principles in Human Geography, John Wiley & Sons, Lnc, New York
4. Johnstone, R.J.et. (eds)1981,DictionaryofHumanGeography,BasilBlackwellOxford.
5. Johnston, R.J.1983: Philosophy and Human Geography, Edward Arnold, London.
6. Chandana,R.C.1986,AGeographyofPopulation,KakaniPublishers,NewDelhi
7. Ahmed, A,et,al (eds) 1997,Demographic Transition, The Third world Scenario, Rawat Publications, Jaipur and New Delhi
8. ClarkeJ.I.1972PopulationGeography,PergamonPress,Oxford
9. Carter.H.1972,TheStoryofUrbanGeography,EdwardArnold,London

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 3rd SEMESTER

- **TITLE OF COURSE : CARTOGRAPHIC TECHNIQUES**
- **COURSE CODE : SEC3**
- **NATURE OF COURSE : SKILL ENHANCEMENT COURSE(SEC)**
- **TOTAL CREDITS : 3 CREDITS(2+1=3)**
- **DISTRIBUTION OF MARKS : 45(End sem) (30 T+15P)+30(In sem)**

Course Objectives: The course triggers to

- Understand the importance of various Cartographic Techniques in the field geographical study.
- To focus on various types of map scale and their construction;
- To learn about principles of Map Projection and techniques of construction

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 [10 marks]	Introduction to Cartography	a. Definition, Representation of scale, Notation of Scale (Representative Fraction, Verbal notation, [Graphical]. Types of scale: plain, comparative, Diagonal and Vernier. b. Maps: Concept and types	9	1		10
2 [10 marks]	Map Projection	a. Map Projection: concept, classification, Principles of construction (Zenithal , Conical, and Cylindrical). b. Choice of map projection (World or any part).	9	1		10
3 [10 marks]	Surveying	a. Basic principles of surveying and their necessity in geography; b. Surveying and Levelling i. Plane table surveying different method.	8	2		10

		ii. Prismatic compass surveying - close and open traverse. **iii.** Theodolite traversing measurement of height				
4 [15 marks]	Practical	a. Construction of comparative and Diagonal scale b. Use of Prismatic Compass (measuring the length of, angle of the roads) c. Use of theodolite, measuring the height of (tree, town , building etc) near our college campus.		2	28	30
		TOTAL	26	6	28	60

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 30 marks

- **Two internal examination - 10 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOME:

After the completion of this course, students should be able to:

1. Know the importance of various cartographic techniques in geographical study.
2. Have a general understanding of co-ordinate system of earth, Map Projection, scale and its type, map and its type
3. Learn the method of enlargement and reduction of scale and map and method of construction of map projection.

Suggested Reading:

1. Campbell, J.,1984: Introductory Cartography, Prentice Hall Inc.
2. Mishra, R.P. and Ramesh,A. 1995: Fundamentals of Cartography, Concept Publishing Company.
3.
4. Monkhouse F.J. and Wilkinson, H.R. 1971: Maps and Diagrams: Their Compilation and Construction; B.I.Publications Private Ltd. New Delhi.
5. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York.

Sarkar A. 1997, Practical Geography: A Systematic Approach, Orient Longman. Ltd. Hyderabad

SEMESTER-IV

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 4^{th} SEMESTER

TITLE OF COURSE : HUMAN,POPULATION AND SETTLEMENT GEOGRAPHY

COURSE CODE : GEOMAJ4 A

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives-

The objectives of this course are:

1. To acquaint the students with distinctiveness of Geography as a field of learning in social science as well as natural science.
2. To introduce the major themes of Human Geography and its importance in present days.
3. To enhance the learner with basic ideas of population size, composition, growth & distribution of population and also the contemporary issues related with population.
4. To develop understanding of the learner about the concept, type & classification of settlements.
5. The philosophy & methodology of the subject is discussed in such a way that the students develop a keen interest in the subject & pursue it for higher studies.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 [15 marks]	Human Geography	a. Human geography: definition, nature, scope and different branches. b. Approaches to the study of human geography. c. Human adaption to various geographical condition (polar, desert and equatorial region) d. Human groups (races): Classification and their spatial distribution.	14	2		16
2	Population Geography	a. Definition, Nature and scope	14	2		16

[15 marks]		b. Population Growth, Factors affecting distribution and density of population. c. Population Growth theory of Malthusian, Demographic Transition Theory d. Population Dynamics: Measure of fertility, mortality and migration- measures and determinants.				
3 [15 marks]	Settlement Geography	a. Settlement: concept, origine and classification b. Rural settlement: Evolution, site and situational factors, patterns and types. c. Urban settlement: Growth, functional classification of town. d. Hierarchy of settlement, Primate City and Urban fringe, Christaller's central place theory.	12	1		13
4 [15 marks]	Practical	a. Age-Sex Pyramid (Developed and Developing), sex disparity map (India and North East India) b. Human development index: developed, developing and Under-developed countries (through histogram, line graph and pie diagram)		10	20	30
		TOTAL	40	15	20	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOMES

After the completion of this course students will be able to :

1. Identify and analyse the key concepts and theories related to human geography including population and settlement.
2. Analyse the complex relationships between humans and their physical and social environments.
3. Design and implement Research Projects related to human geography .
4. Apply interdisciplinary thinking skills to address real world problems.

SUGGESTED READINGS:

1.Singh,L.R. : Fundamentals of Human Geography. Sharda Pustak Bhawan, Allahabad
2. Hussain , M. : Human Geography. Rawat Publication, Jaipur
3. Singh, Y.I. : Human Geography, Global Net Publication, New Delhi
4. Negi, B.S. : Human Geography , Kedar Nath Ram Nath Publications, Meerut
5. Maurya, S.D.: Human Geography, Pravalika Publications, Allahabad
6. Chandna, R.C.: Population Geography, Kalyani Publisher, New Delhi
7. Clarke,J.I. : Population Geography, Pergamon Press, Oxford

8. Johnstone , R.J. :Dictionary of Human Geography, Basil Blackwell, Oxford
9. Hassan,M.I. : Population Geography, Rawat Publications, Jaipur
10. Daniel, P.A.& Hopkinson,M,F.: The Geography of Settlement, Oliver & Boyd, London

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 4th SEMESTER

TITLE OF COURSE : POLITICAL GEOGRAPHY

COURSE CODE : GEOMAJ4 B

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The course triggers to

- To conceptualize the learner in the field of political geography, origin of nations, states and gerrymandering.
- To learn about international boundary, frontiers, ecumene, capitals.
- To understand Geopolitics, Global strategic views of Heartland, Rimland etc and their relevance in present day situation.

To know about the Electoral Geography and voting pattern .

UNITS	NAMES	CONTENTS	L	T	P	Total Hours
1 [15 marks]	Conceptual Basis of Political Geography	a. Concept, Nature, Scope and approaches to Political Geography. b. State: Concept, elements; Geographical attributes of state: size, shape, location. c. Nation: Concept, nation building factors, nation state	12	2		14
2 [15 marks]	Geopolitical Theories	a. Frontier: Concept and types; Boundary: Concept, functions b. Geopolitics : Concept and its evolution. c. Geostrategic Theories of Mahan, Mackinder and Spykman.	12	2		14
3 [15 marks]	Electoral Studies in Geography and Resource Disputes	a. Electoral Geography: Concept and its importance in geography. b. Factors influencing voting behaviour c. Water Sharing Disputes: International (India, Pakistan and Bangladesh)	15	2		17
4 [15 marks]	Practical	a. Map of reorganization of North East India (1951, 1971, 1991) b. Shape Index by Chorley and Haggett method: India (Pre-Independent and Post-Independent), Chile and France. c. Map showing the territory of the major Autonomous Councils of Assam.		4	26	30
		TOTAL	39	10	26	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

Learning outcome:

*Understanding the importance of political geography .

* General understanding of the geopolitical situation of the world, India and North East India.

* The paper will be useful for preparing different competitive examinations.

Suggested Reading:

1. Adhikari, Sudipta: Political Geography , Rawat Publication, New Delhi.

2. Adhikari, Sudipta: Political Geography of India , Sarda Pushtak Bhawan,
3. Cox,K.,2002: Political Geography, Wiley Blackwell
4. Dikshit, R.D.(1999): Political Geography, A Contemporary Perspectives, Tata McGrow, Hill, New Delhi.
5. Hazarika, Joysankar,(1996) Geopolitics of North East India- A Strategical Study.Gyan Publishing House, New Delhi.
6. Muir,R.(1976): Modern Political Geography, MacMillan, London.
7. Taylor, Peter (1985): Political Geography

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 4rd SEMESTER

TITLE OF COURSE : STATISTICAL METHODS IN GEOGRAPHY

COURSE CODE : GEOMAJ4 C

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The course triggers to

- Focus on importance of data in Geography.
- Focus on methods and techniques of data collection, data tabulation, interpretation and analysis.
- Focus on application of some basic statistical measures.

UNITS	NAMES	CONTENTS	L	T	P	Total Hours
1 [15 marks]	Introduction to Statistical Methods	a. Statistical methods in Geography-its significance and limitations. b. Geographical Data: Nature, types and sources. c. Scale of measurement- Nominal, Ordinal ,Interval and Ratio.	10	3		13
2 [15 marks]	Measures of Central Tendency and Dispersion	a. Central tendency: Mean, median (partitioned values) and mode. b. Dispersion: Range, quartile deviation, mean deviation, standard deviation	13	3		16

		c. coefficient of variation- their application in geographical data analysis.				
3 [15 marks]	Data collection techniques and analysis	a. Sampling and its types: Purposive, random, systematic and stratified. b. Correlation: Meaning, coefficient of correlation (Spearman's rank correlation, Pearson's product moment correlation. c. Regression analysis: Simple regression and Residuals from regression.	13	3		16
4 [15 marks]	Practical on statistical methods	a. Tabulation/Grouping of data for preparing frequency distribution table, preparation of Histogram, Frequency Polygon and Frequency Curve. b. Computation of mean, median and mode (grouped and ungrouped data) and their graphical representation. c. Lorenz curve. d. Variability map using co-efficient of variation.		2	28	30
		TOTAL	36	11	28	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOME:

After the completion of this course, students should be able to:

1. Know the importance of various statistical techniques in geographical study.
2. Understand the tabulation, analysis and interpretation of geographical data.

Suggested Reading:

6. Mahmood A.,1999, Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi.
7. Berry B.J.L. and Marble D.F. (eds): Spatial Analysis-A Reader in Geography.
8. Hammond P. and McCullagh P.S., 1978: Quantitative Techniques in Geography: An Introduction, Oxford University Press.
9. Sarkar, A.,(2013) Quantitative Geography. Techniques and Presentations. Orient Black Swan Private Ltd., New Delhi.
10. Elhance, D.N., 1972: Fundamentals of Statistics, Kitab Mahal, Allahabad.
11. King L,S,,1969: Statistical Analysis in Geography, Prentice Hall.
12. Yeates M.,1974: An Introduction to Quantitative Analysis in Human Geography, McGraw Hills, New York.

13. Gregory, S., 1963: Statistical Methods and Geographers, Longman , London.

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 4rd SEMESTER

TITLE OF COURSE : BIOGEOGRAPHY AND OCEANOGRAPHY

COURSE CODE : GEOMAJ4 D

NATURE OF COURSE : MAJOR

TOTAL CREDITS : 4 CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives:

- To introduce and enhance the learner's understanding of the branch of Biogeography and Oceanography and its fundamental concepts.
- To introduce undergraduate students to the fundamental principles, theories, and applications of the two fields.
- To equip students with the knowledge and skills necessary to understand the interactions between the distribution of plants and animals and human activities.

To acquaint the students and enable them to develop skills necessary to understand the ocean, and the dynamic nature of coastal and marine environments.

UNITS	NAME	CONTENT	L	T	P	Total Hours
1 [20 marks]	Biogeography	a. Definition, scope and significance b. World distribution of plants and its relation to climate, soil and human activities c. World distribution of animal and its relation to climate, vegetation and human activities d. Soil- soil forming processes, classification and distribution of soil, soil horizon and profile, soil erosion and conservation ; importance of soil Major soil types of India and Assam	20	2		22

2 [25 marks]	Oceanography	a. Oceanography: Meaning and significance. b. Configuration of ocean floor topography c. Salinity and temperature of ocean water. d. Ocean currents of the Atlantic, Pacific and Indian oceans. Importance of oceans as store house of resources.	20	3		23
3 [15 marks]	Practical	a. Mapping of Phytogeographic and Zoogeographic regions of the world. b. Mapping of protected areas (National Park, Biosphere reserve and wildlife sanctuary) of Assam/ North East India/ India. Drawing of Hypsometric and Bathymetric curve		2	28	30
			40	7	28	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOMES:

After the completion of this course, students should be able to:

1. Define the fields of Biogeography and Oceanography and to explain the essential principles of it.
2. Illustrate and explain the distribution of plant and animal life and the symbiotic relationship with human beings.
3. Explain the importance of soil, its conservation and distribution in world, national and regional level.
4. Illustrate the dynamic ocean bottom topography and appreciate the circulation of cold and warm Ocean currents.
5. Discuss the salinity and temperature distribution of ocean water on a three dimensional spatial perspective.
6. Elaborate the marine ecosystems as well as explain the problems and address the policies to resolve them.

Suggested Readings:

1. Singh.S.,: Geomorphology
2. Gataum.A.,:Geomorphology
3. Ahmed .E.1985: Geomorphology, Kalyani Publisher, New Delhi
4. Steers.J.A. : Unstable Earth
5. Bhattacharyya.N.N. : Biogeography
6. Mahanta.A.P. : Biogeography

7. Mahanta.A.P. : Snatakar Jibo Bhugul
8. Lal.D.S. : Oceanography and climatology
9. Chorley, Water, Earth and Man, Methum and Co. London.
10. Leopold. L.B. , Wolman.M.G., Miller.J.P., 1964 : luvial processes in geomorphology, Freeman , Snfransisco.
11. Penck.W., 1924 : Morphological Analysis of Landforms, Mc Millan, London.
12. Hussain H(ed), 1994: Bio-geography(Part I&II), Anmol Publications,New Delhi
13. Robinson, H.,1982: Bio-geography, ELBS, Mc Donald& Evans. London.
14. Simmons.I.G.,1974: Bio-geography : Natural and Cultural, London.
15. Tiby,1982 : Bio-geography. Longman.
16. King.CAM (1972) : Oceanography of Geographers .E. Arnold, London
17. Sharma.R.C. et al (1970) : Oceanography for Geographers, Chetnya Publ. House, Allahabad

B.A/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)

DETAILED SYLLABUS OF 4rd SEMESTER

TITLE OF COURSE : GEOGRAPHY OF RESOURCES AND ECONOMY

COURSE CODE : GEOMIN4

NATURE OF COURSE : MINOR

TOTAL CREDITS : 4CREDITS(3+1=4)

DISTRIBUTION OF MARKS : 60(End sem) (45 T+15P)+40(In sem)

Course Objectives: The course triggers to

- Develop the concept of recourse, utilization pattern, classification and its distribution over the earth.
- Focus on significances of resource management and sustainable development.

UNITS	NAMES	CONTENTS	L	T	P	Total Hours
1 [15 marks]	Geography of Resources	a. Resources: Meaning, definition and classification. b. Man and resources: Concept related with resources utilization, conservative and management etc. c. Fundamental theory of resources.	12	2		14
2 [15 marks]	Natural resources and economic development	a. World Distribution and Utilization, problem and management of land, water, forest resources. b. Distribution of coal, petroleum, Iron-ore and energy resources and its contribution to economic development in India. c. Appraisal and Conservation of Natural Resources	14	2		16
3 [15 marks]	Economic Development and Resource use	a. Pattern of development : Developed and Developing Country b. Sustainable resources development. c. Use of technology in resource utilization and management.	12	3		15
4 [15 marks]	Practical on Resource And Economic Development	a. Determination of levels of development in India/North-East India/Assam based on few development indicators using simple/mean ranking method. b. Mapping of spatial variation of category-wise forest cover (very dense, moderate dense and open forest) in Assam/ North East India using a suitable cartographic technique c. Preparation of thematic map of Assam/North East India (e.g. Wildlife sanctuaries/national parks, mineral and power resources,)		2	28	30
		TOTAL	38	9	28	75

Where l:lectures T: tutorials p: Practical

MODES OF IN SEMESTER ASSESSMENT: 40 marks

- **Two internal examination - 20 Marks**
- **Attendance -- 5 Marks**
- **Practical -- 10 Marks**
- **Group discursion / seminar/ home assignment -- 5 Marks**

LEARNING OUTCOME:

- This paper will be useful to students in developing ideas on different aspects of resources, and the linkages with development issues that geographers usually address.
- This paper will also be useful for students preparing for different competitive Examinations

Suggested Reading:

1. Cutter S. N., Renwick H. L. and Renwick W., 1991: Exploitation, Conservation and Preservation: A Geographical Perspective on Natural Resources Use, John Wiley and Sons, New York.
2. Gadgil M. and Guha R., 2005: The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity, Oxford University Press. USA.
3. Holechek J. L. C., Richard A., Fisher J. T. and Valdez R., 2003: Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.
4. Jones G. and Hollier G., 1997: Resources, Society and Environmental Management, Paul Chapman, London.
5. Klee G., 1991: Conservation of Natural Resources, Prentice Hall, Englewood.
6. Mather A. S. and Chapman K., 1995: Environmental Resources, John Wiley and Sons, New York.
7. Mitchell B., 1997: Resource and Environmental Management, Longman Harlow, England.
8. Owen S. and Owen P. L., 1991: Environment, Resources and Conservation, Cambridge University Press, New York.
9. Rees J., 1990: Natural Resources: Allocation, Economics and Policy, Routledge. London.
10. Gilg A. W., 1985: An Introduction to Rural Geography, Edwin Arnold, London.
11. Krishnamurthy, J. 2000: Rural Development - Problems and Prospects, Rawat Publish., Jaipur
12. Lee D. A. and Chaudhri D. P. (eds.), 1983: Rural Development and State, Methuen, London.
13. Misra R. P. and Sundaram, K. V. (eds.), 1979: Rural Area Development: Perspectives and Approaches, Sterling, New Delhi.
14. 7. Ramachandran H. and Guimaraes J.P.C., 1991: Integrated Rural Development in Asia – Leaning from Recent Experience, Concept Publishing, New Delhi.
15. Robb P. (ed.), 1983: Rural South Asia: Linkages, Change and Development, Curzon Press.
16. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) Just Sustainability's: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.).

17. Ayers, Jessica and David Dodman (2010) “Climate change adaptation and development I: the state of the debate”. Progress in Development Studies 10 (2): 161-168.
18. Baker, Susan (2006) Sustainable Development. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, “The concept of sustainable development”).
19. Brosius, Peter (1997) “Endangered Forest, endangered people: Environmentalist representations of indigenous knowledge”, Human Ecology 25: 47-69.

SEMESTER V

B.A./B.SC. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 5TH SEMESTER

Title of the Course	**:**	**REGIONAL GEOGRAPHY OF WORLD**
Course Code	**:**	**GEOMAJ5A**
Nature of the Course	**:**	**MAJOR**
Total Credits	**:**	**4 Credits**
Distribution of Marks	**:**	**60 (End-Sem.) 40 (In-Sem.)**

Objectives: The main objective of this course to develop understanding of the learner about climate, soil and topography in different continents of the world. The course also familiarize learner with industrialization and population distribution in developed, developing and underdeveloped nations of the world.

Unit	Name	Contents	L	T	P	Total hours
1 (15 marks)	Introduction to Region and Regional Geography	a. Meaning and scope of Regional Geography- Concept of Regions, Realms, United Nation's geoscheme. b. Bases of classifying geographic regions of the world- Formal & Functional. c. Regionalization , Hierarchy of region	12	2	-	14
2 (15 marks)	Physiography and climate of the continents	Physiography and climate of – a. Asia and Europe b. North America and South America c. Africa and Oceania.	12	2	-	14
3 (15 marks)	Resource base and industries	a. Mineral resource base (Coal, Petroleum and Natural Gas) of the world b. Industrial development (Iron and Steel, Textile and Engineering) of the world.	14	2	-	16
2 (15 marks)	World population and regional studies	a. Distribution of population of the World; issues of Population growth in Developed and Developing countries. b. Regional studies of Middle East, South East Asia and the Mediterranean region with special reference to their resource base.	14	2		16
	Total		52	8	0	60

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

- **Two Internal Examination - 30 Marks**
- **Others (Any one) - 10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
  - Home Assignment

Reading Lists:

1. Manku, D.S. : A Regional Geography of World, Kalyani Publishers
2. Gautam, A : World Geography, Sarda Pushtak Bhawan, Allahabad
3. Bradshaw, M : World Regional Geography
4. Gourou, P. (1980) : The Tropical World, Longman, London
5. Cole, J. (1996) : A Geography of World's Major Regions, Routledge, London

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 5th SEMESTER

Title of the Course : CARTOGRAPHIC TECHNIQUES AND MAP PROJECTION
Course Code : GEOMAJ5B
Nature of Course : MAJOR (Core)

Total Credits : 4Credits (3+1=4)
Distribution of Marks : 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

Course Objectives: The course triggers to

- Understand the importance of various Cartographic Techniques in the field geographical study.
- To focus on various types of map scale and their construction;
- To learn about principles of Map Projection and techniques of construction

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction to Cartography	a. Meaning and its importance in Geography; Nature and Development of Cartography. b. Maps: Concept, types, methods of representation of point, line and area. c. Thematic mapping- concept and types	10	2	-	12
2 (15 Marks)	Scales and their Functions	a. Definition, Representation of scale, Notation of Scale (Representative Fraction, Verbal notation, Graphical). b. Types of scale- plain, comparative, Diagonal and Vernier scale.	14	2	-	16
3 (15 Marks)	Map Projection	a. Map Projection: concept, classification, properties and uses b. Principles of construction, uses, merits and demerits of map projections (Polar Zenithal Gnomonic, Simple Conical with one standard parallel, Bonne's Projection and Simple Cylindrical). Universal Transverse Mercator's Projection c. Choice of map projection (World or any part).	15	2	-	17
4 (15 Marks)	Practical (Construction of Scale and Graticule)	a. Construction of comparative scale (kilometers to miles, time scales) b. Construction of Diagonal scale c. Construction of Map projection: Polar Zenithal Gnomonic, Simple Conical with one Standard parallel and Bonne's Projection and Mercator's Projection.		8	22	30
	TOTAL		39	14	22	75

. **MODES OF IN-SEMESTER ASSESSMENT**: **40 Marks**

- **Two Internal Examination -** **20 Marks**
- **Others (Any one) -** **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- Practical **10 Marks**

Learning outcome:

*Understanding the importance of various cartographic techniques in geographical study.

* General understanding of, Map Projection, scale and its type, map and its type, Thematic map.

*Understanding the method of construction of scale and method of construction of map projection.

Suggested Reading:

14. Campbell, J.,1984: Introductory Cartography, Prentice Hall Inc.
15. Mishra, R.P. and Ramesh,A. 1995: Fundamentals of Cartography, Concept Publishing Company.
16. Monkhouse F.J. and Wilkinson, H.R. 1971: Maps and Diagrams: Their Compilation and Construction; B.I.Publications Private Ltd. New Delhi.
17. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York.
18. Sarkar A. 1997, Practical Geography: A Systematic Approach, Orient Longman. Ltd. Hyderabad.
19. Singh, R.L; Sing , Rana P.B.: Elements of Practical Geography, Kalyani Publishers

B.A / B. Sc IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 5TH SEMESTER

Title of the Course : ECONOMIC GEOGRAPHY

Course Code : GEOMAJ5C
Nature of Course : MAJOR
Total Credits : 4 Credits (3+1=4)
Distribution of Marks : 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

COURSE OBJECTIVES

- To enhance the learner's understanding of the branch of Economic Geography.
- To acquire knowledge about primary, secondary and tertiary activities and its spatio-temporal pattern.
- To acquire knowledge about spatio- temporal pattern of distribution of major mineral resources.
- To acquaint with nature manufacturing industries and their location model.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (10 Marks)	**Introduction to Economic Geography**	a. Meaning, nature and scope of Economic Geography. b. Resource: Concept, nature and types. c. Fundamental concepts and recent trends of Economic Geography.	6	2		8
2 (12 Marks)	**Economic Activities**	a. Primary: Subsistence, Commercial and Plantation agriculture, Forestry, Fishing and Mining b. Secondary: Iron and steel and cotton textile c. Tertiary, quaternary activities	10	2		12
3 (12 Marks)	**Mineral resources & Industry**	a. Distributional pattern and production of major mineral resources – coal, petroleum and iron ore. b. Industry: Factors of location; types of industries; industrial location theory of Losch and Weber. c. Special Economic Zones;	13	2		15
4 (11 Marks)	**Transport and International trade**	a. Transport as a factor of resource utilisation b. World Major Ocean Routes, c. International trade: Factors and major trade zones.	8	2		10
5 (15 Marks)	**Practical**	a. Representation of economic data of India/ North-East India/ Assam by using Pie Diagram, Proportionate Circle/ Sphere, Block Piling. b. Traffic Flow Cartogram c. Network Analysis.		2	28	30

		Total	37	10	28	75

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination -** **20 Marks**
- **Others (Any one) -** **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- Practical **10 Marks**

SUGGESTED READINGS:

Combes P., Mayer T and Thisse F J (2008) : Economic Geography: The Intergation of Regions Nations, Princeton University Press

Guha, J L and Chattoraj, P R (20002) : A New Approach to Economic Geography: A Study of Resources

Leong G C and Morgan G C (1982) : Human and Economic Geography, Oxford University Press, New York

Roy, P (2005) : Economic Geography : A Study of Resources, New Central Book Agency (P) Ltd, 8/1 Chintamoni Das Lane, Kolkata

Wheeler J O (1998) : Economic Geography, Wiley International

Willington D E (2008) : Economic Geography, Husband Press

B.A / B. Sc IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 5TH SEMESTER

Title of the Course **: POPULATION AND SETTLEMENT GEOGRAPHY**

Course Code **: GEOMIN5**
Nature of Course **: MINOR**
Total Credits **: 4 Credits (3+1=4)**
Distribution of Marks **: 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Objectives:

1. To introduce the major themes of Population Geography and its importance in present days.

2. To enhance the learner with basic ideas of population size, composition, growth and distribution of population and also the contemporary issues related with population.

3. To develop understanding of the learner about the concept, type and classification of settlements.

UNITS	NAMES	COURSE CONTENTS	L	T	P	TOTAL HOURS
1 (15 marks)	Population Geography	a. Definition, nature and scope b. Determinants of population growth c. Factors affecting distribution and density of population d. Migration of population (types, causes and consequences)	13	2		15
2. (15marks)	Settlement Geography	a. Settlement geography: Meaning and scope. b. Types and patterns of settlement c. Rural settlement: Evolution, siting factors, types and morphology. d. Urban settlement: Evolution and morphology; functional classification of towns.	13	2		15
3. (15 marks)	Theories and contemporary issues	a. Demographic Transition Theory b. Central Place Theory of Christaller c. Contemporary issues : Ageing of population, urban slum and urban sprawl.	13	2		15
4. (15 marks)	Practical	a. Preparation of population growth curves of Assam and India b. Preparation of population distribution and density maps of Assam and India c. Age Sex Pyramid for developed and developing countries.		5	25	30
	TOTAL		39	11	25	75

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination -** **20 Marks**
- **Others (Any one)** - **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- Practical **10 Marks**

LEARNING OUTCOMES

After the completion of this course students will be able to:

1. Identify and analyse the key concepts and theories related to population and settlement geography

2. Design and implement Research Projects related to population, urbanization and ruralisation

3. Prepare themselves for a range of careers including fields of urban planning and rural development

. SUGGESTED READINGS:

1.Singh,L.R. : Fundamentals of Human Geography. Sharda Pustak Bhawan, Allahabad

2. Hussain , M. : Human Geography. Rawat Publication, Jaipur

3. Singh, Y.I. : Human Geography, Global Net Publication, New Delhi

4. Negi, B.S. : Human Geography , Kedar Nath Ram Nath Publications, Meerut

5. Maurya, S.D.: Human Geography, Pravalika Publications, Allahabad

6. Chandna, R.C.: Population Geography, Kalyani Publisher, New Delhi

7. Clarke,J.I. : Population Geography, Pergamon Press, Oxford

8. Johnstone , R.J. :Dictionary of Human Geography, Basil Blackwell, Oxford

9. Hassan,M.I. : Population Geography, Rawat Publications, Jaipur

10. Daniel, P.A.& Hopkinson,M,F.: The Geography of Settlement, Oliver & Boyd, London

SEMESTER VI

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 6TH SEMESTER

Title of the Course	:	**GEOGRAPHICAL THOUGHT**
Course Code	**:**	**GEOMAJ6A**
Nature of The Course	**:**	**MAJOR**
Total Credits	**:**	**4 Credits**
Distribution of Marks	**:**	**60 (End Sem) + 40 (In-Sem)**

COURES OBJECTIVES:

- To enhance the learner's understanding of the development of geographic ideas
- To acquaint the students to the evolution to geographical thought through the course of time
- To explore the recent trends and technique of the geographic thought

UNITS	NAME	CONTENTS	L	T	P	Total hours
1 (15 marks)	Evolution of Geographical Thought	a. Paradigms in Geography b. Pre-Modern periods: Early Origins of Geographical Thinking with reference to the Classical and Medieval Philosophies c. Modern periods: Evolution of Geography in Germany, France, Britain, United States of America.	18	2		20
2 (15 marks)	Dichotomy And Dualism	a. Environmental Determinism and possibilism b. Systematic and regional c. Idiographic and nomothetic d. Qualitative and quantitative e. Physical and Human Geography	16	2		18
3 (15 marks)	Modern Approaches	a. Neo-determinism b. Systems Approach c. Radicalism d. Feminism e. Quantitative Revolution and its Impact f. Behaviouralism	16	2		18
4 (15 marks)	Post Modern Development of Geography	a. Development of post modernism in Geography b. Changing Concept of Space in Geography c. Recent trends in Geography d. Future of Geography	17	2		19
		TOTAL	67	8	0	75

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination - 30 Marks**
- **Others (Any one) - 10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

LEARNING OUTCOMES:

- The paper will be useful for students in understanding perspectives on the development and contemporary trends in Geography and its systematic study.
- The paper will be useful for students preparing for NTA NET/SLET exams and other competitive exams including the civil services.

Suggested Readings:

1. Husain Majid (2012) "Evolution of Geographical Thought", Rawat Publication, Jawahar Nagar, Jaipur
2. Maurya, S.D.(2013) "History of Geographical Thought",Sarda Pustok Bhawan, Allahabad
3. Adhikari Sudeepta (2011) "Fundamentals of Geographical Thought" Chaitanya Publishing House, Allahabad
4. Dikshit R.D(1997) "Geographical Thought: A Contextual History of ideas, Prentic Hall, India

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 6th SEMESTER

Title of the Course	**:**	**SURVEYING TECHNIQUES**
Course Code	**:**	**GEOMAJ6B**
Nature of Course	**:**	**MAJOR**
Total Credits	**:**	**4 Credits (3+1=4)**
Distribution of Marks	**:**	**60 (End-Sem.) (45T+15P) + 40(In-Sem)**

Course Objectives: The course triggers to

- Understand the concept of using modern survey tools to enhance knowledge and skill for field-based geographical study.

- Understand various types of field survey instruments; principles of different types of ground surveying and methods of carrying out survey for the preparation of maps/plans for different geographical context.
- Learn about different surveying principles and techniques to be adopted in different surface topographies.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction and principle of Surveying	a. Field Surveying: meaning, types and significance in geography. b. Principles of surveying: plane and geodetic surveying, vertical and horizontal control, principle of triangulation.	12	3	-	15
2 (15 Marks)	Techniques of Surveying	a. Techniques of surveying by Plane Table, Prismatic compass, Dumpy's Level and Theodolite.	12	3	-	15
3 (15 Marks)	Methods of Surveying	a. Radiation and intersection. b. Open and closed traverse. c. Contouring. d. Leveling..	12	3	-	15
4 (15 Marks)	Practical	a. Conduct a plane table survey by intersection/radial method and prepare a map. b. Survey a suitable area by prismatic compass (open and close traverse) and adjust the closing error. c. Draw a contour map by using Dumpy's level. d. Measure the height of an object: base is approachable and not approachable.		2	28	30
	TOTAL		36	11	28	75

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination -** **20 Marks**
- **Others (Any one) -** **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- Practical **10 Marks**

LEARNING OUTCOMES:

- Understaning the importance of various surveying techniques in greographical study.
- General understanding of preparation of different types of plan and map.
- An acquaintance of different surveying techniques for representation of various objects of earth's surface.

Suggested Reading:

20. Kanetkar, T.P. and Kulkarni, S.U.: Surveying and Leveling Part-l and ll, Vidyarthi Gritha Prakashan, Pune.
21. Mishra, R.P. and Ramesh,A. 1995: Fundamentals of Cartography, Concept Publishing Company.
22. Campbell, J.,1984: Introductory Cartography, Prentice Hall Inc.
23. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York.
24. Das, A,K. 2021: Pocket Size Handbook on Handling of GPS for Field Studies, GTAD and Aranyak, Guwahati (in PDF Format).

B.A. /B.Sc. INGEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 6th SEMESTER

Title of the course	**: GEOGRAPHY OF INDIA**
Course Code	**: GEOMAJ6C**
Nature of Course	**: Major (Core)**
Total Credits	**: 4 Credits (3+1=4)**
Distribution of Marks	**: 60(End-Sem.) (45T+15P) +40 (In-Sem.)**

COURSE OBJECTIVES:

- The objective of this paper is to make the students familiar with the various aspects of India.

- The students will learn about the physical, anthropogenic and economic diversity of India and the factors responsible for such diversities.

UNIT	NAME	COURSE CONTENT	L	T	P	TOTAL HOURS
1 (10 marks)	Physical setting	a. Physiographic division, b. Drainage system. c. Climate, d. Soil e. Vegetation.	9	1		10
2 (10 marks)	Agriculture	a. Major crops-Rice, Wheat, Cotton, jute, Sugarcane, Tea. b. Agricultural revolutions: Green revolution; Concepts of White revolution, Pink revolution, Blue revolution.	9	1		10
3 (15 marks)	Mineral, power resources, industry and transport	a. Major Minerals: Metallic (Iron, Aluminium, Copper) & Non- Metallic (Limestone and Mica) - Production and spatial distribution. b. Power Resources: i. Conventional-Coal, Petroleum and Hydro power. ii. Non-Conventional –Solar energy, Wind energy and atomic energy. c. Industry: Iron and steel, and Cotton textile d. Transport: Rail, Road and Air	14	2		16
4 (10 marks)	Population	a. Growth, Distribution and density b. Composition-Age, Sex, Race, Language and religion. c. Population problems and prospects	8	1		9
5 (15marks)	Excursion / Field study	Excursion: Visit to place of geographical importance and preparation of report; OR Field study: Visit a local area and preparation a report on settlement, land use pattern, Socio-economic condition, Environmental issues and Natural hazards.	2		28	30
		Total	**42**	**5**	**28**	**75**

Where, L: Lectures T: Tutorials P: Practical

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination - 20 Marks**
- **Others (Any one) - 10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- Practical **10 Marks**

Learning Outcome:

- To make the students aware and provide knowledge about the concept of population, geology, physiographic division, soil, climate, vegetation of India and its agriculture, mineral resources, industry, transport and communication.
- The last unit of the paper provides the scope of the excursion and basic knowledge of the field study and report writing.

Suggested Readings:

1. Singh, R.L(ed)A Regional Geography of India,1967
2. Tiwari, R.C.:Geography of India, Prayag Pushtak Bhawan
3. Khullar:India A Comprehensive Geography, Kalyani Publishers
4. Sutta, A.K.India:Resources,Potentialities and Planning,1973
5. Barry R.G. and Corley R.J., 1998Atmosphere, Weather and Climate, Routledge, New York
6. Miller, A.A., 1953: Climatology

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B.A./B.SC. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 6TH SEMESTER

Title of the Course	**:**	**GEOGRAPHY OF NORTH EAST INDIA AND ASSAM**
Course Code	**:**	**GEOMAJ6D**
Nature of the Course	**:**	**MAJOR**
Total Credits	**:**	**4 (3+1)**
Distribution of Marks	**:**	**60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course an Objectives: The course triggers to

1. The objective of this paper is to give an insight into the regional geography of northeast India.
2. The students will learn about the physical, economic and anthropogenic details of northeast India.
3. To make the students familiar with the factors responsible for such diversities.

Unit	Name	Contents	L	T	P	Total hours
1 (15 marks)	North East India: Physical and socio-cultural background.	a). Physical: physiographic divisions, soil and vegetation, climate and drainage system. b).Socio-cultural background of North-East India- language and religion, cultural diversity.	13	2	-	15
2 (15 marks)	North East India : Resource base and population	a). Resource: agriculture, forest, mineral and power resources of North East India b).Industries of North East India; problems and prospects. c).Population: growth, distribution and density.	13	2	-	15
3 (15 marks)	Assam: Physical and economic background.	a).Physiographic divisions, climate, drainage, soil and natural vegetation. b).Resource: agriculture, forest, mineral and power c).Population: growth, distribution and density. d).Industries of Assam	13	2	-	15
4 (15 marks)	Practical	a. Thematic mapping of North-East India/Assam- showing geographical themes- agriculture, minerals, industries, forest and soil. b. Distribution and density of population- (i) North-east India and (ii) Assam using different methods.		2	28	30
	Total		39	8	28	75

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination -** **20 Marks**
- **Others (Any one)** - **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- Practical **10 Marks**

Learning outcome:

After successful completion of this curse students will be able to understand:

1. The importance and basics concepts of regional geography in the field of geography
2. The physical, economics and population details of north-east and assam.
3. The cultural diversities of north- east India.

Suggested reading:

1. Mandal R.B. (ed), 1990: patterns of regional geography-an international perspective.

2. Tiwari R.C. (2007): geography of India. Prayag pustak bhawan, Allahabad.

3. Sharma T.C. (2013): economic geography of India. Rawat publication, Jaipur.

4. Singh R.L. (1971): India: a regional geography, national geographical society of India.

5. Deshpande C.D. (1992): India: a regional interpretation, ICSSR, new Delhi.

BA/B.BC IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 6TH SEMESTER

TITLE OF THE COURSE : **ENVIRONMENTAL GEOGRAPHY**
COURSE CODE : **GEOMIN6**
TOTAL CREDITS : **4 (3+1)**
DISTRIBUTION OF MARKS : **60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Objectives : The instructional objectives of the course are

- This paper intends to introduce students to geography and environment interface.
- It seeks to development new insights among students on the relevance of environmental studies from a spatial perspective.
- This paper is to make the students understand the basic concept and history of development of sustainable development.
- The students will also know about the role of various agencies in sustainable development.

UNITS	NAME	COURSE CONTENTS	L	T	P	TOTAL HOURS
1 (15 marks)	**Introduction to Environmental Geography**	a) Environmental Geography – Concept , Scope and significance b) Human Environment Relationship – Historical Progression, Adaptation in tropical, temperate and polar Biomes	14	1		15
2 (15 Marks)	Ecosystem	a. Ecosystem: Concept, Types, Structure and Functions, b. Concept of biodiversity and relevance of its preservation .	14	1		15
3 (15 Marks)	**Environmental problems and Programmes**	a) Major Environmental Problems – Pollution, Deforestation, Desertification, Global Warming b.Environmental Programmes and Policies- Global, National and Local level.	14	1		15
4 (15 Marks)	**Practical**	Field observation and Data collection: • Conduct field trip to a locality for data collection (To know local biodiversity, forest, wet land, fertile land, pollution, etc.) • Preparation of report	2	8	20	30
		Total	**50**	**5**	**20**	**75**

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- **Two Internal Examination -** **20 Marks**
- **Others (Any one)** - **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics

- Debate/Home assignment
- Practical **10 Marks**

LEARNING OUTCOMES: After successful completion of this activity students will able to understand:

1) This paper will be useful for students in developing ideas on environmental issues including different policies to protect it.
2) Understand about sustainable development for eco-friendly environment.
3) This paper will be useful for students preparing for different competitive examination including the civil services.

Suggested readings:

1. Gautam A., 2016-17: *Environmental Geography*, Sharda Pustak Bhawan, Allahabad
2. Singh S., 2020: *Environmental Geography*, Pravalika Publications, Allahabad
3. Saxena H. M., 2021: *Environmental Geography*, Rawat Publication, Jaipur
4. Goudie A., 2001: *The Nature of the Environment*, Blackwell, Oxford
5. MoEF, 2006: *National Environmental Policy-2006*, Ministry of Environment and Forests, Government of India
6. UNEP, 2007: *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme
7. Tripathi S., 2019: *Sustainable Development and Environment*, Ankit Publications, Varanasi
8. Sharma H. S., Chattopadhyaya S., 1998: *Sustainable Development-Issues and case Studies*, Concept Publishing Company Pvt. Ltd., Delhi
9. Mungekar P. R., *Introduction to Sustainable Development Goals*, Nitya Publication, Bhopal
10. Choudhury S. P., 2023: *Environment Ecology and Sustainable Development*, BFC Publications, Lucknow
11. Sharma H., Sobti T., 2018: *An Introduction to Sustainable Development Goals*, Independently Published,
12. UNEP's Annual Reports.