

## **FOUR YEAR UNDER-GRADUATE PROGRAMME (FYUGP) IN GEOGRAPHY, DIBRUGARH UNIVERSITY**

- **THE PREAMBLE**

Geography is a vast and diverse field of study that examines the earth's physical and human features and their interrelationships. It is a vital discipline that helps us understand and appreciate the world we live in. Geography is not only about learning the names of countries and their capital cities; it is about comprehending the complexities of the natural and cultural landscapes and the processes that shape them.

In the present-day context, the significance of geography cannot be overstated. As the world becomes increasingly globalized, interdependent, and rapidly changing, geography provides us with essential tools to analyze and interpret the challenges and opportunities that arise. For instance, geospatial technologies such as geographic information systems (GIS), remote sensing, and satellite imagery are extensively used in diverse fields, including urban planning, natural resource management, disaster response, climate change adaptation, and public health. Geography also plays a vital role in understanding social and cultural phenomena, such as migration patterns, language distribution, and ethnic diversity. 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's present and future.

Change is the unchangeable law of nature and therefore, society is not a static entity. With the continuous changes taking place in the society, the nature and scope of geography also changes and enlarges.

The main purpose of the Undergraduate Programme in Geography is to develop and disseminate knowledge, skills and values through education, field-based training and research relevant for promoting, maintaining and improving the functioning of individuals, families, groups, organizations and communities existing in the society.

The curriculum for Geography at undergraduate level therefore, has incorporated certain new components of learning in order to make it relevant to the contemporary society and modern practices. It is expected that the prepared LOCF for Education at undergraduate level and FYUGP will be of immense relevance to the prospective graduates having interest in education and practice. It will be very advantageous to make students of Geography more dynamic and adaptable by enhancing their skills leading to their increased employability. The

discipline will also help in shaping the students' overall personalities to take on the challenges of an emerging competitive society. It has incremental learning experiences that will enhance the abilities of students who come from diverse backgrounds. It will also provide opportunities to develop individual potentialities and to produce a pool of better professionals each year.

- **INTRODUCTION:**

Higher Education in India is considered as a critical core in the development and growth strategy of the nation. According to NEP 2020, Higher Education should put an emphasis on recognising, identifying, and fostering each student's unique strengths by educating teachers and parents about the need of encouraging each student's holistic development in both curricular and co-curricular areas. It must be flexible enough to allow students to select their learning paths and programmes and, in turn, pick their own life choices based on their talents and interests. For a pluralistic world, there should be a focus on multidisciplinary and a comprehensive education in the sciences, social sciences, arts, humanities, and sports to ensure the unity and integrity of all knowledge.

Geography is a multifaceted discipline that explores the interactions between the natural and human worlds, and the spatial patterns and processes that shape our planet. It encompasses a broad range of sub-disciplines, including physical geography, human geography, environmental geography, and geospatial sciences, each with their unique perspectives and methodologies. The Four Year Undergraduate Programme (FYUGP) in Geography provides students with a comprehensive understanding of this dynamic field through a balanced mix of theoretical and practical courses.

The Bachelor of Arts/Science in Geography degree of Dibrugarh University adapted as per the recommendations of NEP 2020 will also be of either three or four year duration, with multiple exit options within the period with appropriate certification. After completion of one year a UG certificate, after completion of two years a UG diploma, after completion of three years a Bachelor's degree in the programme will be provided to the students. The four year undergraduate programme in Geography will allow the student an opportunity to experience the full range of holistic and multidisciplinary education, along with the chosen Major and Minor choices of the students.

- **AIMS OF FOUR YEAR UNDER-GRADUATE PROGRAMME (FYUGP) IN GEOGRAPHY:**

The aims of Four Year Under-Graduate Programme (FYUGP) in Geography are:

1. Provide a comprehensive understanding of the discipline of geography: The FYUGP in Geography aims to introduce students to the breadth and depth of the field of geography, including its sub-disciplines, theories, methods, and applications. Students will gain a broad-based knowledge of the natural and human systems that shape the earth's landscapes and environments, as well as the social and cultural processes that influence them.
2. Develop critical thinking and analytical skills: The FYUGP in Geography aims to develop students' ability to analyze and interpret geospatial data and phenomena using a range of tools and technologies. Students will learn how to identify and evaluate spatial patterns, relationships, and trends, and apply critical thinking and problem-solving skills to real-world scenarios.
3. Foster an interdisciplinary and holistic approach to problem-solving: The FYUGP in Geography aims to cultivate an interdisciplinary and holistic approach to understanding and addressing complex issues that affect the environment, society, and economy. Students will learn how to integrate knowledge and methods from different disciplines, such as biology, geology, economics, sociology, and political science, to develop innovative and sustainable solutions to environmental and social problems.
4. Provide opportunities for experiential learning and research: The FYUGP in Geography aims to provide students with opportunities for experiential learning and research, through field trips, internships, research projects, and collaborations with faculty and peers. Students will gain hands-on experience in using geospatial technologies, conducting fieldwork, collecting and analyzing data, and communicating their findings to diverse audiences.
5. Prepare graduates for diverse career paths and lifelong learning: The FYUGP in Geography aims to prepare graduates for diverse career paths in the public, private, and non-profit sectors, as well as for further education and lifelong learning. Graduates will be equipped with a range of transferrable skills, including communication, teamwork, leadership, and problem-solving, that will enable them to adapt to changing professional and societal contexts.

- **GRADUATE ATTRIBUTES OF THE FYUGP IN GEOGRAPHY:**

1. **Disciplinary knowledge:** Graduates of the FYUGP in Geography will possess a deep and comprehensive understanding of the principles, theories, and methodologies of the field of geography, including its sub-disciplines such as physical geography, human geography, and geomatics. They will have a strong foundation in the theoretical and empirical underpinnings of geography, and be able to apply this knowledge to analyze and interpret environmental and social phenomena. They will also be able to articulate the relevance and significance of geography to contemporary environmental and social issues.
2. **Geospatial literacy:** Graduates of the FYUGP in Geography will possess a strong foundation in geospatial literacy, including the ability to analyze and interpret geospatial data, use geographic information systems (GIS), and apply remote sensing techniques. They will have a thorough understanding of the principles of cartography, geodesy, and spatial statistics, and be able to apply these principles to real-world problems.
3. **Critical thinking and problem-solving:** Graduates of the FYUGP in Geography will be skilled critical thinkers and problem-solvers, able to identify and analyze complex environmental, social, and economic issues, and develop innovative and sustainable solutions. They will have experience in using qualitative and quantitative methods to collect and analyze data, and be able to communicate their findings effectively to diverse audiences.
4. **Interdisciplinary perspective:** Graduates of the FYUGP in Geography will have an interdisciplinary perspective on complex issues, drawing on knowledge and methods from diverse fields such as ecology, economics, sociology, and political science. They will be able to integrate this knowledge to develop holistic and nuanced understandings of complex issues, and develop innovative and sustainable solutions.
5. **Global and cultural competence:** Graduates of the FYUGP in Geography will have a global and cultural competence, with an understanding of the diverse cultural, social, and economic contexts in which environmental and social issues occur. They will be able to work effectively with people from different cultural backgrounds, and have a nuanced understanding of the implications of cultural differences for environmental and social problem-solving.

6. **Ethical and professional practice:** Graduates of the FYUGP in Geography will be committed to ethical and professional practice, with an understanding of the ethical and legal issues involved in environmental and social problem-solving. They will be able to work collaboratively and responsibly with colleagues and stakeholders, and have a commitment to lifelong learning and continuous professional development.

- **PROGRAMME LEARNING OUTCOMES**

**An undergraduate student of Geography should be able to:**

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. 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 3. Utilize a range of geospatial technologies, including geographic information systems (GIS), remote sensing, and spatial statistics, to collect, manage, and analyze geospatial data.

PLO 4. Conduct fieldwork and research projects, utilizing both qualitative and quantitative methods, to collect and analyze data on environmental and social phenomena.

PLO 5. Communicate effectively in written, oral, and visual forms, to diverse audiences, including academic and non-academic audiences, using appropriate technologies and media.

PLO 6. Work effectively in diverse teams, demonstrating leadership, communication, and collaboration skills, to solve complex environmental and social problems.

PLO 7. 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 8. Demonstrate global and cultural competence, with an understanding of the diverse cultural, social, and economic contexts in which environmental and social issues occur.

PLO 9. Apply ethical and professional standards, demonstrating a commitment to responsible and sustainable environmental and social practices.

PLO 10. 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.

#### **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
- In semester examinations
- End Semester examinations

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**DIBRUGARH UNIVERSITY, RAJABHETA, DIBRUGARH – 786004**

**FYUGP Structure as per UGC Credit Framework of December, 2022**

Year	Semester	Course	Title of the Course	Total Credit	
<b>Year 01</b>	1 <sup>st</sup> Semester	C - 1	Geomorphology	4	
		Minor 1	Geomorphology and Oceanography	4	
		GEC - 1	(A) Physical Geography (B) Human Geography	3	
		AEC 1	Modern Indian Language	4	
		VAC 1	Understanding India	2	
		VAC 2	Health and Wellness	2	
		SEC 1	Practicals in Morphometric Techniques and Surveying	3	
					<b>22</b>
	2 <sup>nd</sup> Semester	C - 2	Climatology	4	
		Minor 2	Climatology and Biogeography	4	
		GEC 2	(A) Fundamentals of Geomorphology (B) Fundamentals of Economic Geography	3	
		AEC 2	English Language and Communication Skills	4	
		VAC 3	Environmental Science	2	
		VAC 4	Yoga Education	2	
SEC 2		Map Projection and Cartographic Techniques	3		
				<b>22</b>	
<b>The students on exit shall be awarded Undergraduate Certificate (in the Field of Study/Discipline) after securing the requisite 44 Credits in Semester 1 and 2 provided they secure 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship in addition to 6 credits from skill based courses earned during 1<sup>st</sup> and 2<sup>nd</sup> Semester</b>					
<b>Year 02</b>	3 <sup>rd</sup> Semester	C - 3	Environmental Geography	4	
		C - 4	Social Geography	4	
		Minor 3	Human, Social and Cultural Geography	4	
		GEC – 3	(A) Climatology (B) Settlement Geography	3	
		VAC 3	Digital and Technological Solutions / Digital Fluency	2	
		AEC – 3	Communicative English / Mathematical Ability	2	
		SEC – 3	Application of GIS and Remote Sensing in Geography (Practical)	3	
					<b>22</b>
	4 <sup>th</sup> Semester	C - 5	Population Geography	4	
		C - 6	Political Geography	4	
		C - 7	Statistical Methods in Geography	4	
		C - 8	Biogeography	4	
		Minor 4	Geography of Resource and Economic Development	4	
			Community Engagement (NCC /NSS /Adult Education /Student mentoring / NGO /Govt. Institutions, etc)	2	
				<b>22</b>	
<b>Grand Total (Semester I, II, III and IV)</b>				<b>88</b>	
<b>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</b>					
5 <sup>th</sup> Semester	C – 9	Regional Geography of World	4		

<b>Year 03</b>		C – 10	Soil Geography	4	
		C – 11	Agricultural Geography	4	
		C – 12	Settlement Geography	4	
		Minor 5	Population Geography	4	
			Internship	2	
				<b>22</b>	
<b>Year 03</b>	6 <sup>th</sup> Semester	C – 13	Evolution of Geographic Thought	4	
		C – 14	Economic Geography	4	
		C – 15	Hydrology and Oceanography	4	
		C – 16	Geography of India and North East India	4	
		Minor – 6	Environmental Geography and Sustainable Development	4	
			Project	2	
		<b>Total</b>			
<b>Grand Total (Semester I, II, III and IV, V and VI)</b>				<b>132</b>	
<b>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</b>					
<b>Year 04</b>	7 <sup>th</sup> Semester	C – 17	Fundamentals of Fluvial Geomorphology	4	
		C – 18	Fundamentals of Regional Planning	4	
		C – 19	Fundamentals of Disaster Management	4	
		Minor – 7	Political Geography	4	
			Research Ethics and Methodology	4	
			Research Project – I (Development of Project / Research Proposal and Review of Related literature) / DSE Course in lieu of Research Project	2	
					<b>22</b>
	8 <sup>th</sup> Semester	C – 20	Advanced Fluvial Geomorphology	4	
		C – 21	Advanced Regional Planning	4	
		C – 22	Advanced Disaster Management	4	
		Minor – 8	Geography of Health and Wellbeing	4	
		Dissertation (Collection of Data, Analysis and Preparation of Report) / 2 DSE Courses of 3 credits each in lieu of Dissertation	6		
				<b>22</b>	
<b>Grand Total (Semester I, II, III and IV, V, VI, VII and VIII)</b>				<b>176</b>	
<b>The students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) (Honours with Research) (4 years) after securing the requisite 176 Credits on completion of Semester 8</b>					

**Abbreviations Used:**

- C = Major
- GEC = Generic Elective Course / Multi-Disciplinary Course
- AEC = Ability Enhancement Course
- SEC = Skill Enhancement Course
- VAC = Value Added Course



# **SEMESTER I**

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)**  
**DETAILED SYLLABUS OF 1<sup>ST</sup> SEMESTER**

**Title of the Course** : **GEOMORPHOLOGY**  
**Course Code** : **GGRC1**  
**Nature of The Course** : **MAJOR**  
**Total Credits** : **4**  
**Distribution of Marks** : **80 (End Sem) + 20 (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	NAME	CONTENTS	L	T	P	Total Hours
<b>1</b> (20 marks)	<b>Introduction to Geomorphology</b>	a. Geomorphology: Meaning, Definition, Nature and Scope. b. Fundamental Geomorphic Concepts. c. Introduction to Geomorphic Processes	<b>11</b>	<b>2</b>		<b>13</b>
<b>2</b> (20 marks)	<b>Geomorphic Processes (Endogenetic)</b>	a. Earth: Interior Structure and Isostasy. b. Earth Movements: Folds and Faults, Plate Tectonics and Mountain Building, Geosyncline, Earthquakes and Volcanoes.	<b>15</b>	<b>2</b>		<b>17</b>
<b>3</b> (20 marks)	<b>Geomorphic Processes (Exogenetic)</b>	a. Exogenetic Processes-Weathering, Mass Wasting, b. Cycle of Erosion (Davis and Penck).	<b>11</b>	<b>2</b>		<b>13</b>
<b>4</b> (20 marks)	<b>Evolution of Landforms</b>	a. Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.	<b>15</b>	<b>2</b>		<b>17</b>
		<b>Total</b>	<b>52</b>	<b>8</b>		<b>60</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:**

- One Internal Examination -
- Others (Any one) -
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

**(20 Marks)**

**10 Marks**

**10 Marks**

**LEARNING 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): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
11. Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)  
DETAILED SYLLABUS OF 1<sup>ST</sup> SEMESTER**

<b>Title of the Course</b>	:	<b>GEOMORPHOLOGY AND OCEANOGRAPHY</b>
<b>Course Code</b>	:	<b>MINGGR1</b>
<b>Nature of The Course</b>	:	<b>Minor</b>
<b>Total Credits</b>	:	<b>4</b>
<b>Distribution of Marks</b>	:	<b>80 (End-Sem.) (60 T+20 P) + 20 (In-Sem.)</b>

**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	CONTENTS	L	T	P	Total Hours
<b>1</b> (20 marks)	<b>Introduction to Geomorphology and Oceanography</b>	a. Geomorphology: Meaning, Definition, Nature and Scope. b. Fundamental Geomorphic Concepts. c. Oceanography: Meaning Definition, Nature and Scope d. Ocean Bottom Relief Features	<b>11</b>	<b>2</b>		<b>13</b>
<b>2</b> (20 marks)	<b>Geomorphic Processes (Endogenetic and Exogenetic)</b>	a. Earth: Interior Structure and Isostasy. b. Earth Movements: Folds and Faults, Plate Tectonics and Mountain Building, Geosyncline, Earthquakes and Volcanoes. c. Exogenetic Processes-Weathering, Mass Wasting, d. Cycle of Erosion (Davis and Penck).	<b>15</b>	<b>2</b>		<b>17</b>
<b>3</b> (20 marks)	<b>Salinity, Waves, Tides and Currents</b>	a. Ocean Salinity, Temperature and their distribution b. Ocean Waves: Definition and terms, Wave theories, Classification.	<b>11</b>	<b>2</b>		<b>13</b>

		c. Tides – Causes, Types and Effects d. Ocean currents –Formation and Effects				
<b>4</b> (20 marks)	<b>Practicals</b>	Practicals on Toposheet Interpretation, Profile Drawing, Stream Ordering, Bathymetric and Hypsometric Curve.		<b>2</b>	<b>15</b>	<b>17</b>
		<b>Total</b>	<b>37</b>	<b>8</b>	<b>15</b>	<b>60</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:**

**(20 Marks)**

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

**LEARNING 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 behavior, 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:**

12. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
13. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
14. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
15. Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
16. Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.

17. Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.
18. Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
19. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
20. Thornbury W. D., 1968: Principles of Geomorphology, Wiley.
21. Gautam, A (2010): Bhautik Bhugol, Rastogi Publications, Meerut 11. Tikkaa, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
22. Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad
23. Alan P. Trujillo , Harold V. Thurman (2016): Essentials of Oceanography, 12<sup>th</sup> Edition, Pearson
24. K. Siddhartha (2018): Oceanography: A Brief Introduction, Kitab Mahal

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)  
DETAILED SYLLABUS OF 1<sup>ST</sup> SEMESTER**

<b>Title of the Course</b>	<b>:</b>	<b>PHYSICAL GEOGRAPHY</b>
<b>Course Code</b>	<b>:</b>	<b>GECGGR1A</b>
<b>Nature of The Course</b>	<b>:</b>	<b>Generic Elective Course (GEC)</b>
<b>Total Credits</b>	<b>:</b>	<b>3</b>
<b>Distribution of Marks</b>	<b>:</b>	<b>80 (End Sem) + 20 (In-Sem)</b>

**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.

<b>UNITS</b>	<b>NAME</b>	<b>CONTENTS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total Hours</b>
<b>1</b> (20 marks)	<b>Introduction to Physical Geography</b>	a. Physical Geography: Definition, Nature and Scope. b. Earth and its Components	<b>6</b>	<b>1</b>		<b>7</b>
<b>2</b> (20 marks)	<b>Atmosphere</b>	a. Atmosphere- Definition, composition, structure b. Temperature; Factors and Distribution Insolation, Heat Budget c. Air masses: source regions, classification and modifications d. Concept and types of fronts: Frontogenesis and Frontolysis	<b>11</b>	<b>2</b>		<b>13</b>
<b>3</b> (20 marks)	<b>Lithosphere and Biosphere</b>	a. Earth: Interior, Structure and Isostasy. b. Earth Movements: Folds and Faults (Types and causes) c. Earthquakes and Volcanoes (Distribution, causes, effects). d. Soil and Vegetation; Types and Distribution	<b>11</b>	<b>2</b>		<b>13</b>
<b>4</b> (20 marks)	<b>Hydrosphere</b>	a. Concept of Hydrological Cycle b. Ocean Water Movement- Currents and Tides c. Nature and formation of waves and tides. d. Sea level changes: causes and consequences.	<b>10</b>	<b>2</b>		<b>12</b>
		<b>TOTAL</b>	<b>38</b>	<b>7</b>		<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:****(20 Marks)**

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

**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. and Chorley, R.J. (1998). Atmosphere, Weather and Climate. Routledge, London.
2. Bryant, H. Richard (2001). Physical Geography Made Simple. Rupa and Co., New Delhi.
3. Bunnett, R.B. (2003). Physical Geography in Diagrams, Fourth GCSE edition, Pearson Education(Singapore) Pvt Ltd.
4. Garrison T (1998). Oceanography. Wordsworth Cp, Bedmont.
5. Lake, P. (1979). Physical Geography (English & Hindi Edition) Cambridge Univ. Press, Cambridge.
6. Monkhouse, F I (1979). Physical Geography, Methuen, London.
7. Singh, S. (2003). Physical Geography (English and Hindi Editions) Prayag Pustak Bhawan, Allahabad.
8. Singh, M.B. (2001) Bhoutik Bhoogol, Tara Book Agency, Varanasi.
9. Strahler, A.N. and Strahler A.M. (1992). Modern Physical Geography, John Wiley and Sons, New York
10. Wooldridge, S.W. and Morgan, R.S. (1959). The Physical Basis of Geography: An Outline of Geomorphology. Longman, London.



**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)  
DETAILED SYLLABUS OF 1<sup>ST</sup> SEMESTER**

<b>Title of the Course</b>	:	<b>HUMAN GEOGRAPHY</b>
<b>Course Code</b>	:	<b>GECGGR1B</b>
<b>Nature of The Course</b>	:	<b>Generic Elective Course (GEC)</b>
<b>Total Credits</b>	:	<b>3</b>
<b>Distribution of Marks</b>	:	<b>80 (End Sem) + 20 (In-Sem)</b>

**COURSE OBJECTIVES:**

- To understand various dimensions of Human Geography and its relevance.
- To analyse population growth and distribution and understand theories of population.
- To understand the relationship between space and society.

<b>UNITS</b>	<b>NAME</b>	<b>CONTENTS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total Hours</b>
<b>1</b> (20 marks)	<b>Introduction to Human Geography</b>	a. Human Geography: Definition, Nature and Scope and contemporary relevance. b. Approaches to the study of Human Geography c. Environmental Determinism, Possibilism, Neo-Determinism.	<b>8</b>	<b>2</b>		<b>10</b>
<b>2</b> (20 marks)	<b>Population</b>	a. Population Growth and Distribution; Density (World) b. Population Composition (Age-Sex and Literacy). c. Theories of Population- Demographic Transition Theory, Thomas Robert Malthus.	<b>11</b>	<b>2</b>		<b>13</b>
<b>3</b> (20 marks)	<b>Space and Society</b>	a. Social Space – Concept and Types. b. Social space and Society: Cultural Regions c. World Distribution of race, religion and linguistic groups	<b>11</b>	<b>2</b>		<b>13</b>
<b>4</b> (20 marks)	<b>Tribal Life in India</b>	a. Definition of Tribe b. Classification of Indian tribes c. Major Tribes- Bhils, Gonds, Santhals, Mundas, Bodos, etc.	<b>8</b>	<b>1</b>		<b>9</b>
		<b>Total</b>	<b>38</b>	<b>7</b>		<b>45</b>

<i>Where,</i>	<i>L: Lectures</i>	<i>T: Tutorials</i>	<i>P: Practicals</i>
<b>MODES OF IN-SEMESTER ASSESSMENT:</b>			<b>(20 Marks)</b>
• One Internal Examination	-		<b>10 Marks</b>
• Others (Any one)	-		<b>10 Marks</b>
○ Group Discussion			
○ Seminar presentation on any of the relevant topics			
○ Debate			

**LEARNING OUTCOMES:** The Programme Learning Outcomes (PLOs) for the "Human Geography" Multi-Disciplinary Generic Elective course include:

1. Identify and analyze the key concepts and theories related to human geography, including population, urbanization, culture, and politics.
2. Analyze the complex relationships between humans and their physical and social environments, and critically evaluate the impact of human activities on the natural world.
3. Apply interdisciplinary thinking skills to address real-world problems related to human geography, drawing on insights from different disciplines within the social sciences and humanities.
4. Design and implement research projects related to human geography, including the collection, analysis, and interpretation of data related to population, urbanization, and cultural patterns.
5. Communicate complex ideas related to human geography to a range of audiences, both orally and in writing.
6. Demonstrate cultural awareness and sensitivity, including an understanding of the diverse cultural practices and beliefs that shape human geography and their implications for society.

Overall, the Programme Learning Outcomes for the "Human Geography" Multi-Disciplinary Generic Elective course would prepare students for a range of careers in fields such as urban planning, environmental management, international development, and social policy. Graduates would be equipped with the knowledge, skills, and expertise necessary to address real-world problems related to human geography, as well as a deep understanding of the complex interactions between human societies and their environments.

**Suggested Readings:**

1. Singh, L.R. (2005). Fundamentals of Human Geography. Sharda Pustak Bhawan, Allahabad.
2. DeBlij, H.J. Human Geography: Culture, Society and Space. John Wiley, New York.
3. Haggett, P. (2004). Geography: A Modern Synthesis. Harper & Row, New York
4. Hussain, M. (1994): Human Geography. Rawat Publication, Jaipur.
5. Kaushik, S.D.& Sharma, A.K. (1996): Principles of Human Geography (in Hindi), Rastogi Pub. Meerut.
6. Norton W. (1995). Human Geography. Oxford University Press, New York.
7. Singh, K. N. & Singh J. (2001). Manviya Bhoogol. Gyanodaya Prakashan, Gorakhpur.
8. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
9. Hassan, M.I. (2005) Population Geography, Rawat Publications, Jaipur
10. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)  
DETAILED SYLLABUS OF 1<sup>ST</sup> SEMESTER**

**Title of the Course : PRACTICALS ON MORPHOMETRIC  
TECHNIQUES AND SURVEYING**

**Course Code : SEC106**

**Nature of The Course : Skill Enhancement Course (SEC)**

**Total Credits : 3**

**Distribution of Marks : 80 (End-Sem.) (60 T+20 P) + 20 (In-Sem.)**

**COURSE OBJECTIVES:**

- The main objective of this paper is to make the students understand the various morphometric techniques used in drainage analysis.
- The students will also learn about the various slope analysis techniques and uses of different types of scale.
- The students will also learn about different methods of surveying.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (20 marks)	<b>Representation of Relief and Analysis</b>	a. Profile Drawing and Interpretation (Serial, Superimposed, Composite, Projected). b. Preparation And Analysis of Relative Relief Maps Based on Smith's Method. c. Preparation and Analysis of Absolute Relief Maps Based on Wentworth's Method.	2		9	11
2 (20 marks)	<b>Analysis of Basin Morphometry</b>	a. Geographical Significance of Morphometric Analysis of Drainage Basin. b. Stream Ordering-Horton and Strahler. c. Basin Area Demarcation, Drainage Density, Drainage Frequency, Bifurcation ratio.	2		9	11
3 (20 marks)	<b>Surveying</b>	a. Plane table surveying and prismatic compass (open and open/closed transverse) b. Dumpy Level Surveying (rise and fall, contouring) c. Theodolite (known distance and unknown height)	2		10	12
4 (20 marks)	<b>Field survey method</b>	a. Basic properties of a schedule and questionnaire. b. Preparation of household schedule for socio-economic survey. c. Methods of tabulation and organization of data. d. Methods of interpretation of data	2		9	11
		<b>Total</b>	<b>8</b>		<b>37</b>	<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:****(20 Marks)**

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

**LEARNING OUTCOMES:** The Programme Learning Outcomes for the "Practicals on Morphometric Techniques and Surveying" Skill Enhancement Course include:

1. Develop proficiency in the use of modern surveying and morphometric techniques and apply these skills to measure and analyze characteristics of landscapes and watercourses.
2. Develop the critical thinking and problem-solving skills necessary to apply surveying and morphometric techniques to real-world environmental challenges, including river restoration projects, flood risk assessments, and erosion control measures.
3. Develop the ability to collect, analyze, and interpret data related to surveying and morphometric analysis, and to communicate technical information effectively to a range of audiences, both orally and in writing.
4. Develop interdisciplinary thinking skills, including the ability to integrate different disciplinary perspectives and approaches to solve environmental management problems, drawing on insights from fields such as ecology, hydrology, and engineering.
5. Develop an awareness of the ethical and environmental issues related to surveying and morphometric analysis, including the importance of accurate data collection and analysis in promoting sustainable environmental practices.
6. Develop practical skills in the use of surveying and morphometric analysis tools and techniques, including data collection and analysis, fieldwork, and laboratory work.

Overall, the Programme Learning Outcomes for the "Practicals on Morphometric Techniques and Surveying" Skill Enhancement Course would equip students with the technical, practical, and problem-solving skills necessary to address complex environmental challenges using surveying and morphometric techniques. Graduates would be able to apply these skills in a range of environmental management contexts, and to work effectively in interdisciplinary teams to promote sustainable environmental practices.

**Suggested Readings:**

1. Zelditch ML. 2012. Geometric Morphometrics for Biologists: a Primer. 2nd ed. Burlington: Elsevier Science. A.K.A the "green book" This book is available to read online from the Johns Hopkins Libraries by following the link below and then clicking on the Online Access link (JHU.ebib.com) [https://catalyst.library.jhu.edu/catalog/bib\\_4279916](https://catalyst.library.jhu.edu/catalog/bib_4279916)
2. Bookstein FL. 1991. Morphometric Tools for Landmark Data: Geometry and Biology. Cambridge University Press. A.K.A the "orange book"
3. Slice DE. 2005. Modern Morphometrics in Physical Anthropology. Vol. 6. Springer Science & Business Media. PDF version available for download from Johns Hopkins Libraries by following the link below and then clicking on the Online Access link (SpringLink) [https://catalyst.library.jhu.edu/catalog/bib\\_3639739](https://catalyst.library.jhu.edu/catalog/bib_3639739)

# **SEMESTER II**

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)  
DETAILED SYLLABUS OF 2<sup>nd</sup> SEMESTER**

**Course Title** : **Climatology**  
**Course Code** : **GGRC2**  
**Nature of Course** : **Major (Core)**  
**Total Credits** : **4 credits**  
**Distribution of Marks** : **80 (End-Sem.) + 20 (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.

<b>UNITS</b>	<b>COURSE CONTENTS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>LTP (60 hrs.)</b>
1 (20 marks)	<b>ATMOSPHERIC TEMPERATURE AND INSOLATION:</b> <b>1.1</b> Atmosphere; Definition, Composition and structure <b>1.2</b> Temperature; factors, Distribution <b>1.3</b> Insolation, Heat budget, temperature inversion	<b>12</b>	<b>2</b>		<b>14</b>
2 (20 marks)	<b>ATMOSPHERIC PRESSURE AND WINDS:</b> <b>2.1</b> Pressure belts, Planetary Winds, Pressure Gradient, General Circulation, Jet Streams, Monsoon. <b>2.2</b> Concept of Airmass and Fronts, Cyclones and Anticyclones, Local winds.	<b>13</b>	<b>3</b>		<b>16</b>
3 (20 marks)	<b>ATMOSPHERIC MOISTURE:</b> <b>3.1</b> Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation, Types, <b>3.2</b> Atmospheric Stability and Instability	<b>12</b>	<b>2</b>		<b>14</b>

4 (20 marks)	<b>WEATHER AND CLIMATE</b>	<b>13</b>	<b>3</b>	<b>16</b>
	<b>4.1</b> Concept, Elements and factors of weather and climate, <b>4.2</b> Climatic classification: Koeppen and Thornwaite. <b>4.3</b> Global Warming and Climate Change: Causes and Effects			
<b>Total</b>		<b>50</b>	<b>10</b>	<b>60</b>

<i>Where,</i>	<i>L: Lectures</i>	<i>T: Tutorials</i>	<i>P: Practicals</i>
<b>MODES OF IN-SEMESTER ASSESSMENT:</b>			<b>(20 Marks)</b>
• One Internal Examination	-		<b>10 Marks</b>
• Others (Any one)	-		<b>10 Marks</b>
○ Group Discussion			
○ Seminar presentation on any of the relevant topics			
○ Debate			

**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 2<sup>nd</sup> SEMESTER**

<b>Course Title</b>	<b>: CLIMATOLOGY AND BIOGEOGRAPHY</b>
<b>Course Code</b>	<b>: MINGGR2</b>
<b>Nature of Course</b>	<b>: Minor</b>
<b>Total Credits</b>	<b>: 4 Credits</b>
<b>Distribution of Marks</b>	<b>: 80 (End-Sem.) (60 T+20 P) + 20 (In-Sem.)</b>

**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	COURSE CONTENTS	L	T	P	LTP60hrs
1 (20 Marks)	<b>INTRODUCTION TO CLIMATOLOGY:</b> 1.1 Meaning, Nature and Scope of Climatology 1.2 Composition and Structure of Atmosphere, Elements of weather and climate, 1.3 Temperature Distribution, Insolation, Heat budget, Temperature Inversion,	12	2		14
2 (20 Marks)	<b>ATMOSPHERIC PRESSURE AND WINDS:</b> 2.1 Pressure Belts and General Circulation, Jet Streams, Monsoon: Origin And Mechanism, 2.2 Concept of Airmass and Fronts, Cyclones and Anticyclones, Local winds Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation 2.3 Types Climatic Classification: Koeppen and Thornwaite,	14	2		16
3 (20 Marks)	<b>INTRODUCTION TO BIOGEOGRAPHY:</b> 3.1 Meaning, Scope and Significance of Biogeography 3.2 Ecology and Ecosystem, Structure and Functioning of Ecosystem 3.3 Biomes and Biodiversity hotspots of the world. 3.4 Loss of Biodiversity and Its Conservation.	15	3		18
4 (20 Marks)	<b>PRACTICAL:</b> 4.1 Interpretation of various weather symbols depicted on maps. 4.2 Preparation of rainfall-temperature graphs; Hythergraph, Climograph and Ergograph 4.3 Mapping of protected areas (National park, biosphere reserve and wildlife sanctuary) of India. Mapping of			12	

	zoogeographic regions of the world. Mapping of Biodiversity hotspots of the world and India.				
		<b>Total:</b>			60

*Where,                      L: Lectures                      T: Tutorials                      P: Practicals*

<b>Modes of In-Semester assessment:</b>		20 marks
1. One Unit test	-       -       -       -       -       -	10 marks
2. Any <u>one</u> of the following activities listed below	-       -	10 marks
a. Group Discussion		
b. Seminar presentation on any of the relevant topics		
c. Practical		

**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 2<sup>nd</sup> SEMESTER**

<b>Title of the Course</b>	:	<b>GEOMORPHOLOGY</b>
<b>Course Code</b>	:	<b>GECGGR2A</b>
<b>Nature of the Course</b>	:	<b>Generic Elective Course (GEC)</b>
<b>Total Credits</b>	:	<b>03</b>
<b>Distribution of Marks</b>	:	<b>80 (End Sem) + 20 (In-Sem)</b>

**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	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	<b>PRINCIPLES OF GEOMORPHOLOGY:</b> 1.1 Meaning, Nature and Scope, Fundamental Concepts in Geomorphology, 1.2 Landscape Evolution Theories: (W.M. Davis, W. Penck	08	01	-	09
2 (20 Marks)	<b>INTERIOR OF THE EARTH</b> 2.1 Internal structure of the Earth: Layers based on physical and chemical properties 2.2 Seismic waves and types	08	01	-	09
3 (20 Marks)	<b>EVOLUTION OF LANDFORMS DUE TO ENDOGENETIC FORCES:</b> 3.1 Earth movements, Sudden and slow movements 3.2 Concept of Continental Drift and Plate Tectonics, 3.3 Plate tectonic and its relation with Mountain building, Volcanoes and Earthquakes	11	02	-	13

4 (20 Marks)	<b>EVOLUTION OF LANDFORMS DUE TO EXOGENETIC FORCES:</b> 4.1 Weathering and Mass Wasting–Concept and types. 4.2 Process of gradation, landforms and agents of gradation –Work of Running Water, Underground Water, Glacier, Wind and Sea Wave	12	02	-	14
<b>Total</b>		<b>39</b>	<b>06</b>	-	<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:**

**(20 Marks)**

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

**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): BhautikBhugol, Rastogi Punlications, 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 2<sup>nd</sup> SEMESTER**

**Title of the Course** : **FUNDAMENTALS OF ECONOMIC GEOGRAPHY**  
**Course Code** : **GECGGR2B**  
**Nature of the Course** : **Generic Elective Course (GEC)**  
**Total Credits** : **03**  
**Distribution of Marks** : **80 (End Sem) + 20 (In-Sem)**

**COURSE OBJECTIVES:**

1. To convey an understanding of the fundamental concepts of economic Geography
2. To understand the dynamics of economic activities, man's resources use, population pressure on resource base,
3. To understand the rationale for the location of industries and agricultural activities in its geographical perspectives and human land use by locational theories

UNITS	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	<b>INTRODUCTION TO ECONOMIC GEOGRAPHY:</b> 1.1 Meaning, Nature and Scope, Economic Geography, 1.2 Approaches to the study: Systematic and Spatial approaches, 1.3 Fundamental Concepts in Economic Geography	08	01	-	09
2 (20 Marks)	<b>INTRODUCTION TO RESOURCES</b> 2.1 Resource; Concept and Resource creating factors. 2.2 Classification and Types of resources. Functional Theory of Resources	08	01	-	09
3 (20 Marks)	<b>ECONOMIC ACTIVITIES:</b> 3.1 Effect of Natural Environment on Economic Activities, 3.2 Classification of economic activities: Primary, Secondary, Tertiary and Quaternary activities. 3.3 International Trade	12	02	-	14

4 (20 Marks)	<b>LOCATIONAL THEORIES:</b> 4.1 Agricultural (Von Thunen), 4.2 Industrial location Theory (Weber and Losch). <b>4.3</b> A Case Study on Agro based Industry; Location and Economic Analysis	11	02	-	13
<b>Total</b>		<b>39</b>	<b>06</b>		<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:**

**(20 Marks)**

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

**LEARNING OUTCOMES:** After successful completion of this course students will be able to understand:

1. The concept of economic geography
2. Expresses human and economic activities taking place in the world and India.
3. Classifies the types of geography that could affect economic development.
4. Explains the effect of geography of India to economic development

**SUGGESTED READINGS:**

1. Alexander J. W., 1963: Economic Geography, Prentice-Hall Inc., Englewood Cliffs, New Jersey.
2. Bagchi-Sen S. and Smith H. L., 2006: Economic Geography: Past, Present and Future, Taylor and Francis.
3. Coe N. M., Kelly P. F. and Yeung H. W., 2007: Economic Geography: A Contemporary Introduction, Wiley-Blackwell.
4. Combes P., Mayer T. and Thisse J. F., 2008: Economic Geography: The Integration of Regions and Nations, Princeton University Press9. Clark, Gordon L.; Feldman, M.P. and Gertler, M.S., eds. 2000: The Oxford6.
5. Durand L., 1961: Economic Geography, Crowell
6. Gautam A.: Economic Geography:
7. Hodder B. W. and Lee Roger, 1974: Economic Geography, Taylor and Francis.
8. Wheeler J. O., 1998: Economic Geography, Wiley.
9. Willington D. E., 2008: Economic Geography, Husband Press.

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)**  
**DETAILED SYLLABUS OF 2<sup>nd</sup> SEMESTER**

**Title of the Course** : ENVIRONMENTAL SCIENCE  
**Course Code** : VAC3  
**Nature of the Course** : VALUE ADDED COURSES  
**Total Credits** : 02  
**Distribution of Marks** : 40 (End-Sem.) + 10 (In-Sem.)

**COURSE OBJECTIVES:**

1. To understand the various environmental challenges faced by world.
2. To create a sense of how to be more responsible towards the environment.
3. To provide fundamental knowledge of environmental science and its importance in present day context.
4. To develop strategies for the development of environmental degradation

UNITS	CONTENTS	L	T	P	Total Hours
1 (12 Marks)	ENVIRONMENTAL SCIENCE 1.1 Nature, Scope and importance of environmental Science. 1.2 Climate change, causes, societal impacts, adaptation 1.3 Sustainable development and living	9	1		10
2 (12 Marks)	ENVIRONMENTAL DEGRADATION 2.1 Land degradation: Causes and consequences. 2.2 Exploitation of surface and ground water, 2.3 Air pollution: anthropogenic causes, impact on health, agriculture, climate, hydrology	9	1		10
3 (16 Marks)	ENVIRONMENTAL CASE STUDIES AND COMMUNITY BASED ACTIVITIES 3.1 Wildlife; Poaching, man--wildlife conflicts, Conservation and mitigation. 3.2 Waste Management; Solid waste, urban waste, industrial waste and pollution; 3.3 Water management; Reuse and Rain water harvesting, Air pollution reduction and climate change mitigation	10			10
	<b>Total</b>	<b>28</b>	<b>2</b>		<b>30</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*



**MODES OF IN-SEMESTER ASSESSMENT:****(10 Marks)**

- One Internal Examination -
- Others (Any one) -
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

**05 Marks****05 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.

**SUGGESTED 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 2<sup>nd</sup> SEMESTER**

**Title of the Course : MAP PROJECTION AND CARTOGRAPHIC TECHNIQUES**

**Course Code : SEC206**

**Nature of the Course : SKILL ENHANCEMENT COURSES**

**Total Credits : 03**

**Distribution of Marks: 80 (End-Sem.) (60 T+20 P) + 20 (In-Sem.)**

**COURSE OBJECTIVES:**

1. To convey an understanding of the fundamental concepts of economic Geography
2. To understand the dynamics of economic activities, man's resources use, population pressure on resource base,
3. To understand the rationale for the location of industries and agricultural activities in its geographical perspectives and human land use by locational theories

<b>UNITS</b>	<b>CONTENTS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total Hours</b>
1 (20 Marks)	<p><b>INTRODUCTION TO MAP PROJECTION:</b> 1.1 Scale: Definition, Classification. Conversion of Scale (RF and Statement of scale)</p> <p>1.2 Projection: Definition, Classifications, Properties, uses and limitations</p> <p>1.3 Projection in GIS Software</p>	02	1	11	14
2 (20 Marks)	<p><b>CONSTRUCTION, PROPERTIES, MERITS, DEMERITS</b></p> <p><b>2.1</b> Conical projection with One/Two standard parallel</p> <p><b>2.2</b> Zenithal Equal Area Projectio</p> <p><b>2.3</b> Mercators Projection</p>	2	02	14 -	18
3 (20Marks)	<p><b>PREPARATION OF MAPS AND GRAPHS</b></p> <p>3.1 Choropleth (Population Distribution by Simple and multiple Dot method, population Density). Isopleth (Rainfall variability map).</p> <p>3.2 Population Growth: Line graph, Composite bar graph showing Total, Rural and Urban population (India/NE India/Assam),</p>	2	01	13	16

4 (20Marks)	<b>MAP INTERPRETATION</b> 4.1 Interpretation of Relief, Drainage and Settlement from topographical map 4.2 Digital cartography: Geo visualization techniques and web cartography	2	01	9	12
	<b>Total</b>	<b>8</b>	<b>5</b>	<b>47</b>	<b>60</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**MODES OF IN-SEMESTER ASSESSMENT:**

**(20 Marks)**

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

**LEARNING OUTCOMES:** After successful completion of this course students will be able to understand:

1. to understand about map preparation methods and techniques, graphical representation of climatic data.
2. Interpretation of topographical maps will help to understand the features of maps and how to read a map and identify real world features from maps

**SUGGESTED READINGS:**

1. Mishra R.P. Ramesh A. 2000, Fundamentals of Cartography. Concept Publishing Company. New Delhi
2. Monmonier, M. (1996). How to Lie with Maps. Second Edition. Chicago, IL: The University of Chicago Press
3. Sarkar A. 1997, Practical Geography: A Systematic Approach, Orient Blackswan Ltd. Hyderabad. Sen.
4. Silk. J. 1979, Statistical Techniques in Geography, George Allen and Unwin, London.
5. Singh, S.L and Singh, R.P.B. 1994, Elements of Practical Geography: Kalyani Pub. New Delhi.
6. Monkhouse F.J. and Wilkinson, H.R. 1971, Maps and Diagrams: Their Compilation and Construction. B.I. Publications Private Limited. New Delhi.
7. Sarkar A. 1997, Practical Geography: A Systematic Approach, Orient Longman. Ltd. Hyderabad.

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# **SEMESTER III**

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)  
DETAILED SYLLABUS OF 3<sup>rd</sup> SEMESTER**

**Title of the Course** : ENVIRONMENTAL GEOGRAPHY  
**Course Code** : GGRC3  
**Nature of Course** : MAJOR  
**Total Credits** : 4  
**Distribution of Marks** : 80 (End-Sem.) + 20 (In-Sem.)

**60 Hours/Lectures**

**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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	Environmental Geography	a. Concept, nature and scope of environmental geography, b. Concept of Environmental Determinism, Possibilism and Neo-determinism.	12	3	-	15
2 (20 Marks)	Ecosystem and Ecology	a. Ecology: Meaning, Nature, Types, Principles of ecology b. Ecosystem: Concept, Types, Structure and Functions, Distribution, Food chain, Food web, Trophic level c. Biomes: Concept and Types	12	3	-	15
3 (20 Marks)	Human Adaptation	a. Human adaptation in different Biomes. b. Factor controlling Human adaptation in humid areas, dry areas, frigid areas, flood plain and mountains region	12	3	-	15
4 (20 Marks)	Environment Degradation	a. Meaning, nature, cause and impact b. Conservation of environment, water, soil and wetland, forest and marine. c. Concept of Sustainable Development	12	3		15
	TOTAL		48	12		60

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**ASSESSMENT METHODS:**

**END-SEMESTER WRITTEN EXAMINATION:**

**80 marks**

**MODES OF IN-SEMESTER ASSESSMENT:**

**(20 Marks)**

- One Internal Examination -

**10 Marks**

- Others (Any one) -
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

**10 Marks**

**LEARNING OUTCOMES:**

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

1. Define the field of Environmental Geography and to explain the essential principles of it,
2. Illustrate and explain the ecosystem, types and components,
3. Explain the symbiotic relation between Human-Environment and adaptations in different biomes,
4. Understand the components of environmental degradation and restoration.

**SUGGESTED READINGS:**

1. Chandna, R. C., 2002: Environmental Geography, Kalyani, Ludhiana.
2. Cunningham, W. P. and Cunningham, M. A., 2004: Principals of Environmental Science: Inquiry and Applications, Tata Macgraw Hill, New Delhi.
3. Gautam , A. : Environmental Geography, Sharda pustak bhawan, Allahabad
4. Goudie A., 2001: ature of the Environment, Blackwell, Oxford.
5. Saxena, H, M.: Environmental Geography (third edition), Rawat publications, Jaipur,
6. Saxena, H. M. : Introduction : Environment, Ecolohy and Geography , Rawat publications.
7. Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity. Rawat Publication, Jaipur
8. Miller G. T., 2004: Environmental Science: Working with the Earth, Thomson BrooksCole, Singapore.
9. MoEF, 2006: National Environmental Policy-2006, Ministry of Environment andForests, Government of India.
10. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies, Springer

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)**  
**DETAILED SYLLABUS OF 3<sup>rd</sup> SEMESTER**

<b>Title of the Course</b>	:	<b>SOCIAL GEOGRAPHY OF INDIA</b>
<b>Course Code</b>	:	<b>GGRC4</b>
<b>Nature of Course</b>	:	<b>MAJOR</b>
<b>Total Credits</b>	:	<b>4</b>
<b>Distribution of Marks</b>	:	<b>80 (End-Sem.) + 20 (In-Sem.)</b>

**60 Hours/Lectures**

**Course Objectives:** The course triggers to

1. To have a basic introduction of social geography, meaning and scope,
2. To understand concept of caste and tribes of India in geographical prospective,
3. To learn about geography of religion of India,
4. To learn about language and its geographical importance.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	An Introduction to Social Geography	a) Meaning, nature and scope of social geography; b) Growth and development of social geography; c) Development of social geography in India.	12	3		15
2 (20 Marks)	Caste and Tribe in India	a) Origin of the caste system in India and their geographical patterning. b) The morphology of settlements of caste; caste in rural and urban neighbourhoods; caste and clan territories. c) Tribes in India; their geographical distribution and their rural-urban composition.	12	3		15
3 (20 Marks)	Religions in India	a) Religions in India and their diversity; b) A geographical analysis and historical perspective of religions in India. c) Religious identity; its elements and its social expression.	12	3		15
4 (20 Marks)	Language in India	a) Origins of language; dialect. b) Diffusion of language; language shift and its retention. c) Languages of India and their spatial patterning and formation of linguistic states.	12	3		15
		TOTAL	48	12		60

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**ASSESSMENT METHODS:****END-SEMESTER WRITTEN EXAMINATION:****80 marks****MODES OF IN-SEMESTER ASSESSMENT:****(20 Marks)**

- One Internal Examination -
- Others (Any one) -
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

**10 Marks****10 Marks****LEARNING OUTCOMES:**

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

1. Define social geography, its nature, scope and development,
2. Evaluate caste and tribe of India and its distributions,
3. Identify social status and issues due to religion in India,
4. Illustrate language as identity and its relevance.

**SUGGESTED READINGS:**

1. Cloke, P., Crang, P., Goodwin, M.,(ed) (1999), *Introducing Human Geographies*, London: Oxford University Press.
2. Ahmed, A, (1999) *Social Geography*, Rawat publications, Jaipur.
3. Registrar General of India, (1972) , *Economic and Socio cultural Dimensions of Regionalization of India*, Census Centenary Monograph No 7, New Delhi.
4. Ahmad ,A, (1993) (ed) *Social Structure and regional Development: A Social Geography Perspective*, Rawat Publications, Jaipur.
5. Sen,J,(2012) *Social and Cultural Geography*, Kalyani Publishers, New Delhi.
6. Subba Rao B. (1958), 'Personality of India', MS University Press, Baroda.
7. Pain R, M. Barke, D Fuller, J Gough, R MacFarlane, G Mowl, (2001), *Introducing Social Geographies*, Arnold Publishers, London.
8. Dutt NK.,(1986), *Origin and Growth of Caste in India*, Firma Kin, Calcutta.
9. Taher, M,(2017), *Social Geography*, Ashok Book Stall, Guwahati.
10. Sopher D. (1980) (ed) '*An Exploration of India: Geographical Perspectives on Society and Culture*', Cornell Press, New York.
11. Singh K.S.(1993) *People of India Vol I to XI*, Oxford University Press, New Delhi.
12. Raza M and Ahmad A (1990) *An Atlas of Tribal India*, Concept Publishing Co, Delhi.
13. Kosambi DD (1962) *Myth and Reality: Studies in the Formation of Indian Culture*, Popular Prakashan, Bombay.
14. Khubchandani ML, (1988) *Language in a Plural Society*, Indian Institute of Advanced Study, Shimla.
15. Jones,Emrys and John Eyles,1977 :*A Introduction to Social Geography* ,London
16. Jones,Emrys,1975 *Readings in Social Geography* .London
17. Srinivas.M.N. *Social Change in Modern India*,OrientLongman,Delhi
18. Singh Yogendra,Modernisation and Social change : Orient Longman
19. Census of India ,*Economic and Social-Cultural Dimensions of Regionalisation*, Census Centenary Monograph No.7 New Delhi1974.
20. Centenary Monograph No.7 New Delhi1974.



**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)**  
**DETAILED SYLLABUS OF 3<sup>rd</sup> SEMESTER**

<b>Title of the Course</b>	<b>:</b>	<b>HUMAN, SOCIAL AND CULTURAL GEOGRAPHY</b>
<b>Course Code</b>	<b>:</b>	<b>MINGGR3</b>
<b>Nature of Course</b>	<b>:</b>	<b>MINOR</b>
<b>Total Credits</b>	<b>:</b>	<b>4</b>
<b>Distribution of Marks</b>	<b>:</b>	<b>80 (End-Sem.) (60 T+20 P) + 20 (In-Sem.)</b>
<b>60 Hours/Lectures</b>		

**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

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	Human Geography	a. Definition, Nature, Major Subfields, Contemporary Relevance b. Schools: Determinism, Possibilism, and Neo-Determinism; c. Human development index: Developed, developing and Underdeveloped countries, problems and prospects d. Policies and plans for human development in India	12	3		15
2 (20 Marks)	<b>Social Geography</b>	a. Definition, Nature and Scope of Social Geography b. Society: Meaning, nature classification and distribution in India c. Social problems and prospects in India d. Social Protection Programmes in India	12	3		15
3 (20 Marks)	Cultural Geography	a. Definition, nature and scope of Cultural Geography b. Culture Region: World and India c. Cultural diffusion: meaning, factors affecting cultural diffusion	12	3		15
4 (20 Marks)	Practical in Human Geography	a. Age–Sex Pyramid, sex disparity map (India and North East India) b. Human development index: developed, developing and Under-developed countries (through histogram and line graph)			15	15
<b>TOTAL</b>			<b>36</b>	<b>9</b>	<b>15</b>	<b>60</b>

*Where, L: Lectures T: Tutorials P: Practicals*

**ASSESSMENT METHODS:****END-SEMESTER WRITTEN EXAMINATION:****Theory****Practical****80 marks****60 Marks****20 marks****MODES OF IN-SEMESTER ASSESSMENT:**

- **One Internal Examination** -

**(20 Marks)****10 Marks**

- **Others (Any one)** -

**10 Marks**

- Group Discussion
- Seminar presentation on any of the relevant topics
- Debate

**LEARNING 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 3<sup>rd</sup> SEMESTER**

**Title of the Course** : CLIMATOLOGY  
**Course Code** : GECGGR3  
**Nature of Course** : (A) GENERIC ELECTIVE COURSE (GEC)  
 (NATURAL SCIENCES)  
**Total Credits** : 3  
**Distribution of Marks** : 80 (End-Sem.) + 20 (In-Sem.)

**45 Hours/Lectures**

**Course Objectives:** The course triggers to

1. To introduce to climatology, atmosphere, weather and climate
2. To understand global atmospheric pressure and wind system
3. To learn the basics of atmospheric moisture and climate change

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	Atmosphere	a. Atmospheric Composition and Structure, b. Variation with Altitude, Latitude and Season. c. Weather and Climate: Elements and factors	9			9
2 (20 Marks)	Atmospheric Pressure and Winds	a. Atmospheric Pressure–Influencing factors on atmospheric pressure. Vertical and Horizontal Distribution, Pressure Belts, b. Winds: influencing factors, Types - planetary, seasonal, local wind c. Air-Masses and Fronts, Cyclones and anti-cyclones.: Definition, Nature, Source Regions, Classification	10	2		12
3 (20 Marks)	Atmospheric Moisture	a. Humidity: Absolute, Relative and Specific. b. Hydrological cycle: Component, process and factors affecting. c. Clouds and its types Precipitation and its forms.	10	2		12
4 (20 Marks)	Global climate system	a. Koeppen’s Classification of Climate b. Heat budget and heat balance c. Climate Change: Causes and consequences, recent issues-floods, drought	10	2		12
		<b>TOTAL</b>	<b>39</b>	<b>6</b>		<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**ASSESSMENT METHODS:**

**END-SEMESTER WRITTEN EXAMINATION**

**80 marks**

**MODES OF IN-SEMESTER ASSESSMENT:**

**(20 Marks)**

- One Internal Examination -

**10 Marks**

- Others (Any one) -
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

**10 Marks**

**LEARNING OUTCOMES:**

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

1. Understand the basic concept of climatology and its components
2. Know the climatic phenomenon in global and local context
3. Know the basics of atmospheric moisture, hydrological cycle and climate change

**SUGGESTED READINGS:**

1. Barry R.G. and Carleton A.M.,2001: *Synoptic and Dynamic Climatology*, Routledge, UK.
2. Barry R.G. and Corley R.J.,1998: *Atmosphere, Weather and Climate*, Routledge, New York.
3. Critchfield H.J.,1987: *General Climatology*, Prentice-Hall of India, New Delhi
4. Lutgens F.K., Tarbuck E.J. and Tasa D.,2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. Oliver J.E. and Hidore J.J.,2002: *Climatology: An Atmospheric Science*, Pearson Education, New Delhi.
6. Trewartha G.T. and Horne L.H., 1980: *An Introduction to Climate*, McGraw-Hill.
7. Gupta L.S.(2000): *Jalvayu Vigyan*, Hindi Madhyam Karyanvay Nidishalya, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, D.S.(2006): *Jalvayu Vigyan*, Prayag Pustak Bhavan, Allahabad
9. Vatal, M.(1986): *Bhautik Bhugol*, Central Book Depot, Allahabad
10. Singh, S.(2009): *Jalvayu Vigyan*, Prayag Pustak Bhawan, Allahabad

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)**  
**DETAILED SYLLABUS OF 3<sup>rd</sup> SEMESTER**

**Title of the Course** : SETTLEMENT GEOGRAPHY  
**Course Code** : GECGGR3  
**Nature of Course** : (B) GENERIC ELECTIVE COURSE (GEC)  
(SOCIAL SCIENCES/ HUMANITIES/ COMMERCE)  
**Total Credits** : 3  
**Distribution of Marks** : 80 (End-Sem.) + 20 (In-Sem.)

**45 Hours/Lectures**

**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

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	Introduction to Settlement Geography	a. Definition, nature and scope of settlement Geography b. Settlement: Classification, Types and Distribution c. Factors affecting settlement growth and distribution	7	2		9
2 (20 Marks)	Rural Settlement	a. Evaluation: Origin and growth of rural settlement b. Classification, Types and Pattern of Rural Settlement c. Morphology of rural settlement, factor affecting rural settlement and rural settlement problems in India	10	2		12
3 (20 Marks)	Urban Settlement	a. Evaluation: Origin and growth of Urban settlement b. Classification, Types and Pattern of Urban Settlement c. Morphology of urban settlement, factor affecting urban settlement and urban settlement problems in India	10	2		12
4 (20 Marks)	Settlement Theories	a. Christaller's and b. August Losch's Theory of Market Center c. Rural-Urban dichotomy and continuum, Urban fringe in India	10	2		12
		<b>TOTAL</b>	<b>37</b>	<b>8</b>		<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**ASSESSMENT METHODS:****END-SEMESTER WRITTEN EXAMINATION****80 marks****MODES OF IN-SEMESTER ASSESSMENT:****(20 Marks)**

- One Internal Examination -
- Others (Any one) -
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

**10 Marks****10 Marks****LEARNING 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, Science and Human Geography, Hutchinson, London
3. Huntington, E., 1951 Principles in Human Geography, John Wiley & Sons, Inc, New York
4. Johnstone, R.J. et. (eds) 1981, Dictionary of Human Geography, Basil Blackwell Oxford.
5. Johnston, R.J. 1983: Philosophy and Human Geography, Edward Arnold, London.
6. Chandana, R.C. 1986, A Geography of Population, Kakani Publishers, New Delhi
7. Ahmed, A, et, al (eds) 1997, Demographic Transition, The Third world Scenarios, Rawat Publications, Jaipur and New Delhi
8. Clarke J.I. 1972 Population Geography, Pergamon Press, Oxford
9. Carter, H. 1972, The Story of Urban Geography, Edward Arnold, London

**B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)**  
**DETAILED SYLLABUS OF 3<sup>rd</sup> SEMESTER**

**Title of the Course** : **APPLICATION OF REMOTE SENSING AND GIS IN GEOGRAPHY**

**Course Code** : **SEC306**

**Nature of Course** : **SKILL ENHANCEMENT COURSE**

**Total Credits** : **3**

**Distribution of Marks** : **80 (End-Sem.) (60 T+20 P) + 20 (In-Sem.)**

**45 Hours/Lectures**

**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

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	Basics of Remote Sensing and GIS	a. Meaning and definition of Remote Sensing, Components, Historical Development b. Types of Remote sensing (Air born, space borne) Platforms and Types of Satellites, Sensors, Orbit c. Electromagnetic Spectrum, Atmosphere and Surface - radiation interaction d. Meaning and definition of GIS, Components, Historical Development	4		3	7
2 (20 Marks)	Geospatial Data Processing	a. Introduction to geo- referencing of topographical map (raster image) b. Spatial and Non-spatial Data, Raster and Vector Data Structure c. Collection of Spatial Data: Point, Line, Polygon, creation of shape file. d. Processing, creation of buffer, on point, line and polygon	2		6	8
3 (20 Marks)	Digital image Data Processing	a. Import Raster and Vector data to GIS interface, b. layers staking of images, Mosaic, and clip Area of Interest (Shortwave – Open source, QGIS, etc. recommended) c. Digitization of spatial data and saving data	3		12	15
4 (20 Marks)	Application of RS and GIS	a. Introduction to satellite images interpretation b. Satellite Image interpretation, delineation of landforms, river basin, land cover land use. c. Temporal change: land use and land cover, river erosion	3		12	15
		<b>TOTAL</b>	<b>12</b>		<b>33</b>	<b>45</b>

*Where,*

*L: Lectures*

*T: Tutorials*

*P: Practicals*

**ASSESSMENT METHODS:****END-SEMESTER WRITTEN EXAMINATION:****80 marks**

(Theory/Practical= 65; Practical Notebook= 5; Viva Voce= 10)

**MODES OF IN-SEMESTER ASSESSMENT:****(20 Marks)**

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

**LEARNING 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 through 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 Chipman J.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