MODIFIED COURSE STRUCTURE AND SYLLABUS(FYUGP) OF FOUR YEAR (8 SEMESTER) B. A/B.SC. IN GEOGRAPHY

(Approved in BOS, Centre for Studies in Geography held on 30.10.2025)

CENTRE FOR STUDIES IN GEOGRAPHY
DIBRUGARH UNIVERSITY
DIBRUGARH

Member **Member** **Signature of the Chairperson(BOS)**

DIBRUGARH UNIVERSITY, RAJABHETA, DIBRUGARH – 786004

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 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:**
  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 analyse 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 analysing 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.

PEO Number Objective Description

PEO1 Graduates will acquire in-depth knowledge of Geography including concepts, theories, and methodologies relevant to contemporary issues and challenges.

PEO2 Graduates will develop a comprehensive understanding of Geography as a multidisciplinary field encompassing physical, human, and environmental dimensions.

PEO3 Graduates will possess a broad understanding of Geography and apply theoretical knowledge and practical skills to address real-world problems and contribute to sustainable development initiatives.

PEO4 Demonstrate proficiency in geographic technologies and analytical tools for data collection, visualization, and decision-making.

PEO5 Cultivate professional competencies such as critical thinking, problem-solving, and interdisciplinary collaboration necessary for success in academic and professional settings

PEO6 Graduates will be inspired to engage in advanced studies and research activities to address the educational needs of the nation.

Program Specific Outcomes (PSOs)

The following table describes the outcomes that graduates of the BA/B.Sc. Geography programs are expected to achieve after the successful completion of their studies:

PSO Number Outcome Description

PSO1 Graduates will adeptly solve a variety of problems and will be able to critically analyse their findings.

PSO2 Graduates will analyse and interpret results, and foster innovation by developing ideas that reflect broader Geo-environmental contexts.

PSO3 Graduates will apply their knowledge to design effective methodologies for addressing real-world problems.

PSO4 Graduates will utilize learned techniques, skills, and modern tools appropriately to address specific challenges.

PSO5 Graduates will acquire enhanced problem-solving abilities, analytical thinking and creativity,

PSO6 Graduates will be proficient in writing comprehensive reports, creating impactful presentations, and efficiently communicating findings.

PSO7 Graduates will build the confidence necessary to excel in competitive exams such as NET, SET, UPSC/APSC etc.

Program Outcomes (POs)

The following table describes the outcomes that graduates of the B.A/B.Sc. Geography programs are expected to achieve the following upon successful completion of their studies:

PO Number Outcome Description

PO1: Graduates will comprehend fundamental concepts and be able to expand upon the concepts, theories, methods and techniques in Geography.

PO2: Graduates will possess advanced knowledge and deep insights in various Geographical domains.

PO3: Graduates will master diverse problem-solving methodologies applicable to Socio-economic and environmental problems.
PO4: Graduates will be adept at communicating geographical ideas with precision and clarity.
PO5: Graduates will enhance their professional skills and gain expertise in specialized areas of geography.
PO6: Graduates will acquire skills necessary for engaging in independent research.
PO7: Graduates will become professionals capable of addressing real-life problems.
PO8: Graduates will be trained to prepare reports such as field reports, dissertation, thesis, etc. with clarity.

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/Practical
- Mentor/Mentee

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

ASSESSMENT

- Home assignment
- Project Report
- Class Presentation: Oral/Poster/Power point
- Group Discussions and debate
- Seminars
- Laboratory work

- Peer review
- Quizzes
- Other participatory learning activities
- In semester examinations
- End Semester examinations

Table 2: Marks Distribution

	4 Credit Course **with** Practical	**4** Credit Course **without** Practical	**3** Credit Course **with** Practical	**3** Credit Course **without** Practical
End-Sem	**45T+15P(**10 Exam+3 PNB+ 2VV**)** = **60** Marks	**60T** = **60** Marks	**45T+15P(**10 Exam+3 PNB+2 VV**)** = **60**Marks	**60T= 60** Marks
In-Sem	**20 IE** (2×10) **+ 10P + 10** (GD, Seminar, Debate etc.) = **40** Marks	**30 IE** (2×15) + **10** (GD, Seminar, Debate etc.) = **40** Marks	**20 IE** (2×10) + **10P + 10** (GD, Seminar, Debate etc.) = **40** Marks	**30 IE** (2×15) + **10** (GD, Seminar, Debate etc.) = 4**0** Marks

Abbreviations:

T (Theory), **P** (Practical), **PNB** (Practical Note Book), **IE** (Internal Examination), **VV** (Viva-Voce), **GD** (Group Discussion)

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FYUGP STRUCTURE AS PER UGC CREDIT FRAMEWORK OF MAY, 2024

Year	Semester	Course	Title of the Course	Total Credit
Year 01	1st 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/ Health and Wellness	2
		SEC 1	Disaster Management	3
	Total			**20**
	2nd 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 2	a. Environmental Science b. Yoga Education	4 2
		SEC 2	Methods and Techniques of Field Study	3
	Total			**24**
The students on exit shall be awarded Undergraduate Certificate (in the Field of Study/Discipline) after securing the requisite 40 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 1st and 2nd Semester				
Year 02	3rd Semester	C - 3	Environmental Geography	4
		C - 4	Remote Sensing and GIS in 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

		SEC – 3	Cartographic techniques	3
	Total			**20**
	4th Semester	C - 5	Human and Settlement Geography	4
		C - 6	Political Geography	4
		C - 7	Statistical methods in Geography	4
		C - 8	Biogeography and Oceanography	4
		Minor 4	Geography of Resource and Economic Development	4
		Total		**20**
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 80 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				
	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
		Total		**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 and Sustainable Development	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) Honors (3 years) after securing the requisite 120 Credits on completion of Semester 6.				
Year 04	**7th Semester**	C – 16	Select Any One • Fundamentals of Fluvial Geomorphology • Fundamentals of Regional Planning • Fundamentals of Disaster Management	4
		C – 17	Geography of Tourism	4

		C – 18	Population Geography		4
		Minor 7	Political Geography		4
			Research Ethics and Methodology		4
		Total			**20**
	8th Semester	C – 19	Select Any One • Advanced Fluvial Geomorphology • Advanced Regional Planning • Advanced Disaster Management		4
		C – 20	Social and Cultural Geography		4
		Minor –8	Geography of Health and Wellbeing		4
			Dissertation (Collection of Data, Analysis and Preparation of Report) / Any 2 DSE Courses of 4 credits each in lieu of Dissertation		8
			DSE1	Urban Geography	4
			DSE2	Geography of Rural Development	4
			DSE3	Soil Geography	4
		Total			**20**
Grand Total (Semester I, II, III and IV, V, VI, VII and VIII)					**160**
The students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) (Honours with Research) (4 years) after securing the requisite 160 Credits on completion of Semester 8.					

SEMESTER I

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

TITLE OF THE COURSE	**:**	**GEOMORPHOLOGY**
COURSE CODE	**:**	**GGRC1**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60 (End Sem) (45T+15P) + 40 (In Sem)**

Course Description:

This course provides an in-depth understanding of the earth's physical form and structure. It explores the fundamental concepts and processes in geomorphology, focusing on both internal (endogenetic) and external (exogenetic) processes that shape the earth's surface. Students will learn to analyse various landforms and their evolution through lectures, tutorials, and practical exercises, equipping them with skills essential for careers in environmental and land-use management.

Prerequisites:

There are no formal prerequisites for this course.

Course Objectives:

- Enhance understanding of geomorphology and its fundamental concepts.
- Acquire knowledge about the earth's interior and its movements.
- Understand diverse geomorphic processes and their impact on landform development under various geo-climatic conditions.
- Comprehend the processes responsible for the development of diverse landforms on the earth's surface.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Understand key concepts and terminologies in geomorphology.
ILO 1.1: Recall definitions of geomorphological terms.
ILO 1.2: Identify different geomorphic processes.
ILO 1.3: List various landforms created by geomorphic processes.

CO2: Explain the earth's interior structure and geomorphic processes.

ILO 2.1: Describe the structure of the earth's interior.
ILO 2.2: Explain the concepts of isostasy, plate tectonics, and geosynclines.
ILO 2.3: Discuss the processes of weathering and mass wasting.
CO3: Apply geomorphic knowledge to analyse and interpret landscapes and landforms.
ILO 3.1: Use topographical maps to interpret landforms.
ILO 3.2: Perform morphometric and slope analysis on various terrains.
ILO 3.3: Analyse fluvial, karst, aeolian, glacial, and coastal landforms.
CO4: Differentiate between erosional and depositional processes.
ILO 4.1: Compare and contrast different types of erosional landforms.
ILO 4.2: Identify depositional features in various environments.
ILO 4.3: Assess the impact of climatic conditions on geomorphic processes.
CO5: Integrate geomorphic principles to solve complex geomorphological problems.
ILO 5.1: Combine knowledge of endogenetic and exogenetic processes to explain landform evolution.
ILO 5.2: Create models representing different geomorphic processes.
ILO 5.3: Propose solutions to geomorphological issues in environmental management.
CO6: Critically evaluate geomorphic processes and their implications on landform development.
ILO 6.1: Judge the effectiveness of different geomorphic theories.
ILO 6.2: Evaluate the role of geomorphic processes in landscape modification.
ILO 6.3: Appraise the implications of human activities on geomorphic processes.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO2		CO4	CO6	
Procedural			CO3			C05
Metacognitive					CO6	CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	M	M	M	M	M	M	M	M
CO2	S	S	M	M	M	S	M	M	M
CO3	S	S	S	S	S	S	M	M	M
CO4	S	S	S	M	M	S	S	M	S
CO5	S	S	S	M	M	S	S	S	S

CO6	M	M	S	M	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	a. Geomorphology: Meaning, Definition, Nature and Scope. b. Fundamental Geomorphic Concepts. c. Introduction to Geomorphic Processes	12	2		14
2 (15 marks)	Geomorphic Processes (Endogenetic)	a. Earth: Interior Structure and Isostasy. b. Earth Movements: Types of Folds and Faults, Plate Tectonics, concept of Geosyncline, Earthquakes and Volcanoes. c. **Distribution of land and water according to ancient Indian knowledge**	13	2		15
3 (15marks)	Geomorphic Processes (Exogenetic)and Evolution of Landforms	a. Exogenetic Processes-Weathering, Mass Wasting, b. Cycle of Erosion (Davis and Penck). c. Evolution of Landforms (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. Morphometric Analysis: Drainage ordering, basin area demarcation, drainage density, Bifurcation ratio. c. Slope Analysis – Wentworth's method and Smith's Method.		2	28	30
		TOTAL	**39**	**8**	**28**	**75**

Where, L: Lectures T: Tutorials P: Practicals

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:

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
12. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

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

TITLE OF THE COURSE	**: GEOMORPHOLOGY AND OCEANOGRAPHY**
COURSE CODE	**: MINGGR1**
NATURE OF THE COURSE	**: MINOR**
TOTAL CREDITS	**: 4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**: 60 (End Sem) (45T+15P) + 40 (In Sem)**

Course Descriptions:

This course provides an overview of geomorphology and oceanography, focusing on the processes shaping the Earth's surface and the dynamics of oceanic systems. It covers fundamental concepts in geomorphology, including landforms, geological processes, and the interaction between land and water bodies. Additionally, it explores key aspects of oceanography, such as ocean currents, waves, tides, and marine ecosystems. Practical sessions offer hands-on experience in interpreting topographic maps, drawing profiles, and analysing bathymetric data.

Prerequisites: None

Course Objectives

- To introduce students to the fundamental concepts of geomorphology and oceanography.
- To develop an understanding of the processes shaping the Earth's surface and oceanic dynamics.
- To enhance students' analytical skills in interpreting topographic maps and bathymetric data.
- To cultivate an appreciation for the interconnectedness of geological and oceanic systems.
- To provide practical experience in applying theoretical knowledge to real-world scenarios.
- To prepare students for further studies or careers in Earth sciences, environmental science, or related fields.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Describe the nature and scope of geomorphology and oceanography.

ILO 1.1: Define and differentiate between geomorphology and oceanography.
ILO 1.2: Explain the significance of geomorphic and oceanographic processes in shaping the Earth's surface.
ILO 1.3: Analyse geomorphological and oceanographic concepts to understand real world landscapes and marine environments.

CO2: Analyse the processes and landforms associated with endogenetic and exogenetic forces.
ILO 2.1: Analyse the causes and effects of endogenetic forces such as tectonic movements and exogenetic forces like weathering and erosion.
ILO 2.2: Integrate knowledge of Earth's interior structure and surface processes to explain the formation of specific landforms.
ILO 2.3: Critically evaluate the impact of geological processes on human activities and the environment.

CO3: Evaluate the factors influencing ocean salinity, temperature, waves, tides, and currents.
ILO 3.1: Understand the factors influencing ocean salinity, temperature variations, and oceanic circulation patterns.
ILO 3.2: Apply knowledge of oceanographic processes to interpret regional variations in marine environments.
ILO 3.3: Analyse the relationships between oceanic phenomena such as waves, tides, and currents.

CO4: Apply practical techniques for interpreting topographical maps and geomorphic data.
ILO 4.1: Apply practical skills to interpret topographical maps and analyse geomorphic data.
ILO 4.2: Synthesize information from multiple sources, including topographical maps and field observations, to draw conclusions about landscape evolution.
ILO 4.3: Evaluate the accuracy and reliability of data obtained through practical techniques.

CO5: Critically analyse the interplay between geological processes and environmental dynamics.
ILO 5.1: Analyse the interactions between geological processes and environmental factors such as climate change and land use.
ILO 5.2: Evaluate the sustainability of human activities in geomorphologically and oceanographically sensitive areas.
ILO 5.3: Develop strategies for mitigating the impact of geological hazards on human populations and ecosystems.

CO6: Demonstrate effective communication of geomorphological and oceanographic concepts.
ILO 6.1: Communicate geomorphological and oceanographic concepts effectively through written reports, presentations, and discussions.

ILO 6.2: Present complex geological information in a clear and accessible manner to diverse audiences.

ILO 6.3: Collaborate with peers to develop interdisciplinary solutions to geomorphological and oceanographic challenges.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO2 CO3		CO3 CO5	CO3 CO5	CO5
Procedural			CO2	CO2	CO2	
Metacognitive			CO4	CO4	CO4	CO6

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	S	M
CO2	S	S	S	M	M	S	M	M
CO3	S	S	M	M	M	M	M	M
CO4	S	S	M	S	S	S	S	S
CO5	S	S	S	M	M	M	S	M
CO6	M	M	M	S	M	M	S	S

Mapping of Course Outcomes to Program Outcomes

Where, S: Strong correlation ***M: Medium correlation***

UNITS	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 marks)	Introduction to Geomorphology and Oceanography	a. Geomorphology: Meaning, Definition, Nature and Scope. b. Fundamental Geomorphic Concepts. c. Oceanography: Meaning Definition, Nature and Scope d. Ocean Bottom Relief Features	12	2		14
2 (15 marks)	Geomorphic Processes (Endogenetic and Exogenetic)	a. Earth: Interior Structure and Isostasy. b. Earth Movements: Folds and Faults, Plate Tectonics, Earthquakes and Volcanoes. c. Exogenetic Processes-Weathering, Mass	15	2		17

		Wasting, d. Cycle of Erosion (Davis and Penck). e. **Distribution of land and water according to ancient Indian knowledge**				
3 (15 marks)	Salinity, Waves, Tides and Currents	a. Ocean Salinity and its distribution b. Ocean Temperature and their distribution c. Tides – Causes, Types and Effects d. Ocean currents –Formation and Effects	12	2		14
4 (15 marks)	Practical	Practicals on Toposheet Interpretation, Profile Drawing, Stream Ordering, Bathymetric and Hypsometric Curve.	08	2	20	30
		TOTAL	**47**	**8**	**20**	**75**

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

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**

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.
11. Tikkaa, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut
12. Singh, S (2009): Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad.

13. Alan P. Trujillo , Harold V. Thurman (2016):Essentials of Oceanography, 12th Edition, Pearson
14. K. Siddhartha (2018): Oceanography: A Brief Introduction, Kitab Mahal
15. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

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

TITLE OF THE COURSE	**: PHYSICAL GEOGRAPHY**
COURSE CODE	**: GECGGR1A**
NATURE OF THE COURSE	**: GENERIC ELECTIVE COURSE (GEC)**
TOTAL CREDITS	**: 3 CREDITS**
DISTRIBUTION OF MARKS	**: 60 (End Sem) + 40 (In-Sem)**

Course Description:
The Physical Geography course introduces students to the fundamental concepts and processes governing the Earth's physical environment. It covers topics such as the Earth's structure, atmosphere, lithosphere, biosphere, and hydrosphere. Through theoretical study and practical applications, students gain an understanding of Earth systems and their interconnectedness.

Prerequisites:
No specific prerequisites are required.

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.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Define Physical Geography and its scope.
ILO1.1: Identify and list the key components of Physical Geography.
ILO 1.2: Explain how Physical Geography differs from other branches of geography.
ILO 1.3: Apply the concepts of Physical Geography to analyse real-world phenomena.

CO2: Describe the composition and structure of the atmosphere.
ILO 2.1: Explain the composition of the Earth's atmosphere in terms of gases.
ILO 2.2: Illustrate the vertical structure of the atmosphere.
ILO 2.3: Compare and contrast the characteristics of different atmospheric layers.

CO3: Classify different types of air masses and explain their modifications.
ILO 3.1: Classify air masses based on their source regions and characteristics.
ILO 3.2: Describe the process of air mass modification.
ILO 3.3: Analyse the influence of air masses on weather patterns in different regions.

CO4: Identify and differentiate between various types of Earth movements.
ILO 4.1: Identify the different types of Earth movements, such as orogenic and epeirogenic.
ILO 4.2: Differentiate between volcanic and seismic activities.
ILO 4.3: Interpret maps and diagrams showing Earth's tectonic activities.

CO5: Explain the concept of the hydrological cycle and its significance.
ILO 5.1: Describe the stages of the hydrological cycle.
ILO 5.2: Discuss the importance of the hydrological cycle in shaping landscapes.
ILO 5.3: Evaluate human impacts on the hydrological cycle and associated ecosystems.

CO6: Analyse the causes and consequences of sea level changes.
ILO 6.1: Identify natural and anthropogenic causes of sea level changes.
ILO 6.2: Evaluate the impact of sea level changes on coastal regions and ecosystems.
ILO 6.3: Propose mitigation strategies to address the effects of sea level rise.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO1, CO2, CO3, CO4, CO5			CO5	
Procedural				CO6		
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	S	M
CO2	S	M	M	M	M	M	M	M
CO3	S	M	M	M	M	M	M	M
CO4	S	M	M	M	M	M	M	M
CO5	S	M	M	M	S	M	S	S

CO6	M	S	M	M	M	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (10 marks)	Introduction to Physical Geography	a. Physical Geography: Definition, Nature and Scope. b. Earth and its Components	5	1		6
2 (18marks)	Atmosphere	a. Atmosphere- Definition, composition, structure b. Temperature; Factors and Distribution Insolation, Heat Budget c. Air masses: source regions, classification and modifications d. Cyclone: Concept and types e. **Mention of seasons and climates in ancient Indian literature**	12	1		13
3 (17 marks)	Lithosphere and Biosphere	a. Earth's Interior and Structure. b. Earth Movements: Orogenic and Epeirogenic c. Earthquakes and Volcanoes (Distribution, causes, effects). d. Soil and soil forming processes	12	1		13
4 (15 marks)	Hydrosphere	a. Concept of Hydrological Cycle b. Ocean water movement: Currents (types); El Nino and La Nina c. Sea level changes: causes and consequences.	12	1		13
		TOTAL	**41**	**4**		**45**

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

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

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, FI (1979). Physical Geography, Methuen, London.
7. Singh, S. (2003). Physical Geography (English and Hindi Editions) Prayag Pustak Bhawan, Allahabad.
8. Singh, M.B. (2001) BhoutikBhoogol, 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.
11. IKS REF: Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS
12. **Vedic Meteorology by Ravi Prakash Arya, Publisher : Indian Foundation for Vedic Science; Third edition (24 May 2017)**

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

TITLE OF THE COURSE	**:**	**HUMAN GEOGRAPHY**
COURSE CODE	**:**	**GECGGR1B**
NATURE OF THE COURSE	**:**	**GENERIC ELECTIVE COURSE (GEC)**
TOTAL CREDITS	**:**	**3 CREDITS**
DISTRIBUTION OF MARKS	**:**	**60 (End Sem) + 40 (In-Sem)**

Course Description:

This course, Human Geography, delves into the various dimensions of human interaction with the Earth's surface and how it shapes societies and cultures. Through a mix of theoretical frameworks and case studies, students explore topics such as population growth and distribution, theories of population, the relationship between space and society, and the dynamics of tribal life in India.

Prerequisites:

No specific prerequisites are required for this course.

Course Objectives:

- To understand the fundamental concepts and theories in Human Geography and their contemporary relevance.
- To analyse the factors influencing population growth and distribution, and comprehend the theories explaining population dynamics.
- To explore the relationship between space and society, including the concept of social space and cultural regions.
- To gain insights into the diversity and dynamics of tribal life in India, focusing on major tribes and their socio-cultural characteristics.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Recall and define key concepts in Human Geography, including environmental determinism, demographic transition theory, and cultural regions.
ILO 1.1: Identify and define key terms and concepts in Human Geography.
ILO 1.2: Recall and explain the theories of environmental determinism and demographic transition.
ILO 1.3: Describe the characteristics of different cultural regions.

CO2: Demonstrate an understanding of the factors influencing population growth and distribution, and the relationship between space and society.
ILO 2.1: Explain the factors affecting population growth and distribution.
ILO 2.2: Interpret the relationship between space and society.
ILO 2.3: Summarize the main characteristics of social space and cultural regions.

CO3: Apply theoretical frameworks to analyse real-world examples of population dynamics and cultural landscapes.
ILO 3.1: Apply demographic transition theory to analyse population trends in different regions.
ILO 3.2: Apply concepts of social space and cultural regions to analyse cultural landscapes.
ILO 3.2: Analyse case studies of population distribution using geographical methods and tools.

CO4: Analyse and evaluate the complexities of tribal life in India, including the socio-cultural characteristics of major tribes.
ILO 4.1: Analyse the socio-cultural characteristics of major tribes in India.
ILO 4.2: Evaluate the impact of socio-economic factors on tribal communities.
ILO 4.3: Compare and contrast the lifestyles of different tribes in India.

CO5: Synthesize information from various sources to propose solutions to challenges faced by tribal communities.
ILO 5.1: Synthesize information to propose strategies for sustainable development in tribal areas.
ILO 5.2: Develop recommendations for policies aimed at improving the socio-economic conditions of tribal communities.
ILO 5.3: Create a comprehensive understanding of the complexities of tribal life through interdisciplinary approaches.

CO6: Critically evaluate the relevance and applicability of theories and concepts in understanding contemporary human geographical phenomena.
ILO 6.1: Critically justify the strengths and limitations of demographic transition theory.
ILO 6.2: Assess the relevance of environmental determinism and possibilism in explaining human-environment interactions.
ILO 6.3: Critique the representation of cultural regions and human groups in geographical literature and discourse.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge	Remember	Understand	Apply	Analysis	Evaluate	Create

Dimension						
Factual	CO1					
Conceptual		CO1	CO3	CO6		
Procedural			CO3	CO6		CO5
Metacognitive	CO2		CO4		CO6	

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	M	S	M	M	M	M	M	M
CO3	S	S	S	M	S	M	M	M
CO4	M	M	S	M	S	S	M	S
CO5	M	M	S	M	S	M	S	S
CO5	S	M	S	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Introduction to Human Geography	a. Human Geography: Definition, Nature and Scope and contemporary relevance. b. Concepts of Environmental Determinism, Possibilism, Neo-Determinism.	11	1		12
2 (15 marks)	Population	a. Factors affecting Growth and Distribution b. Composition (Age-Sex). c. Theories of Population- Demographic Transition Theory	10	1		11
3 (15 marks)	Space and Society	a. Social Space – Concept and Types. b. Cultural Regions c. **Cultural landscapes in Indus Valley Civilization** d. World Distribution of human groups (race).	10	1		11
4 (15 marks)	Tribal Life in India	a. Definition of Tribe b. Major Tribes of India- Bhils, Gonds and Santhals c. Major tribes of North East India: Bodos, Khasis and Adi	10	1		11
		TOTAL	**41**	**4**		**45**

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

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

Suggested Readings:

1. Singh, L.R. (2005). Fundamentals of Human Geography. Sharda Pustak Bhawan, Allahabad.
2. De Blij, 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). ManviyaBhoogol. GyanodayaPrakashan, 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.
11. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

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

TITLE OF THE COURSE	**:**	**DISASTER MANAGEMENT**
COURSE CODE	**:**	**SEC106**
NATURE OF THE COURSE	**:**	**SKILL ENHANCEMENT COURSE (SEC)**
TOTAL CREDITS	**:**	**3 CREDITS (2+1=3)**
DISTRIBUTION OF MARKS	**:**	**60 (End Sem) (45T+15P) + 40 (In Sem)**

Course Description:

The Disaster Management course under the B.A./B.Sc. in Geography program introduces students to the fundamental concepts of hazards, disasters, risk, and vulnerability. It delves into the causes, impacts, and distribution of both natural and manmade disasters, with a focus on those prevalent in India. The course emphasizes response strategies, mitigation techniques, and community-based disaster management approaches. Through theoretical learning and practical fieldwork, students gain insights into disaster preparedness, response protocols, and the role of indigenous knowledge in mitigating disasters.

Prerequisites:

There are no specific prerequisites for this course, although a basic understanding of geography, environmental science, or related disciplines would be beneficial.

Course Objectives:

- To familiarize students with the concepts of hazards, disasters, risk, and vulnerability.
- To explore the causes, impacts, and distribution of natural and manmade disasters, with a focus on those affecting India.

- To introduce students to response and mitigation strategies employed in disaster management.
- To emphasize the importance of preparedness, both at individual and community levels, before and after disasters.
- To plant an understanding of the do's and don'ts during and post-disaster situations.
- To engage students in practical fieldwork to apply theoretical knowledge in assessing and addressing various types of disasters.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Define and classify disasters according to their nature and impact.
ILO 1.1: Define hazards, disasters, risk, and vulnerability, distinguishing between various types of disasters.
ILO 1.2: Classify disasters based on their causes and impacts.
ILO 1.3: Identify and categorize different types of disasters encountered globally and within India.
CO2: State the causes, impacts, and distribution of disasters in India.
ILO 2.1: Explain the causes behind prevalent disasters such as floods, landslides, droughts, earthquakes, tsunamis, and cyclones in India.
ILO 2.2: State the socio-economic and environmental impacts of these disasters on affected regions and communities.
ILO 2.3: Evaluate the distribution patterns of disasters across different geographical regions of India.

CO3: Evaluate response and mitigation strategies employed in disaster management.
ILO 3.1: Annalyse the concepts of response and mitigation in disaster management.
ILO 3.2: Critically justify the effectiveness of various response and mitigation strategies employed during and after disasters.
ILO 3.3: Propose mitigation measures for specific disaster scenarios.

CO4: Develop preparedness plans and protocols for disaster situations.
ILO 4.1: Apply their knowledge to develop preparedness plans for different types of disasters.
ILO 4.2: Synthesize information to create comprehensive disaster preparedness protocols.
ILO 4.3: Evaluate the adequacy and effectiveness of preparedness plans in mitigating disaster risks.

CO5: Demonstrate effective communication and leadership skills in disaster scenarios.
ILO 5.1: Demonstrate effective communication skills in disseminating disaster-related information to communities.
ILOP 5.2: Analyse the role of leadership in coordinating disaster response and mitigation efforts.
ILO 5.3: Find strategies for effective communication and leadership during disasters.

CO6: Apply theoretical knowledge in practical fieldwork to assess and address various types of disasters.

ILO 6.1: Application of theoretical concepts learned in class to practical fieldwork scenarios.
ILO 6.2: Analyse real-world disaster scenarios during fieldwork and propose appropriate solutions.
ILO 6.3: Evaluate the effectiveness of their practical interventions in mitigating disaster impacts.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO2	CO3, CO4, CO6	CO5	CO3	
Procedural						CO6
Metacognitive						CO5 CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	M	M	M	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	S	M	S	M	S	M	S	M
CO4	M	M	S	M	S	M	S	M
CO5	M	M	S	M	S	S	S	M
CO6	S	M	S	M	S	S	M	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 marks)	Disasters	a) Disasters: Definition and Concepts: Hazards, Disasters; Risk and Vulnerability; Classification b) Manmade disasters: Causes, Impact and Distribution	9	1		10
2 (15 marks)	Disasters in India	a) Disasters in India: Flood, Landslide, Drought, Earthquake and Tsunami, Cyclone: Causes, Impact and Distribution	9	1		10
3 (15 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 Disasters b) **Traditional disaster preparedness and adaptation practices in India**	9	1		10

4 (15 marks)	Field Work (Practical)	a) Field Work (Flood, Landslide, Drought, Earthquake, Cyclone and Manmade Disaster)		2	43	45
		TOTAL	**27**	**5**	**43**	**75**

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

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**

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 Opportunities", 2007. Publisher I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
9. **Watershed: How We Destroyed India's Water and How We Can Save It by Mridula Ramesh Publisher: Hachette India (15 March 2023)**

SEMESTER II

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 2ND SEMESTER

COURSE TITLE	**: CLIMATOLOGY**
COURSE CODE	**: GGRC2**
NATURE OF THE COURSE	**: MAJOR**
TOTAL CREDITS	**: 4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**: 60 (End-Sem.) (45T+15P) + 40 (In Sem)**

Course Description:
This course focusing on the scientific study of Earth's climate system and the factors influencing climate change. Through a comprehensive examination of atmospheric phenomena and climatic patterns, students delve into topics such as atmospheric temperature, insolation, pressure systems, wind patterns, moisture, weather, and climate classification. Practical components include interpreting weather symbols, analysing weather maps, and representing climatic data graphically.

Prerequisites:
There are no specific prerequisites for this course.

Course Objectives:

- To develop a scientific understanding of the physical aspects of Earth's climate system and the factors influencing climate change.
- To explore the global balance of energy and transfer of radiation in the atmosphere through in-depth quantitative analysis and the study of general circulation of winds.
- To highlight important atmospheric phenomena and their direct impact on human activities, emphasizing the understanding of weather phenomena and its implications on day-to-day life.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Understand the fundamental concepts and principles of climatology.
ILO 1.1: Identify the components and structure of the atmosphere.
ILO 1.2: Explain the factors influencing atmospheric temperature distribution.
ILO 1.3: Define insolation and its role in the Earth's heat budget.

CO2: Interpret and explain various atmospheric phenomena and climatic patterns.
ILO 2.1: Interpret weather symbols and analyse weather maps effectively.
ILO 2.2: Describe the characteristics of pressure belts and planetary winds.
ILO 2.3: Explain the concept of airmass, fronts, cyclones, and anticyclones.

CO3: Apply climatological knowledge to analyse and interpret real-world climatic data.
ILO 3.1: Utilize Climograph, hythergraphs, and ergographs to represent climatic data.
ILO 3.2: Analyse rainfall distribution maps to identify regional climatic patterns.
ILO 3.3: Apply climatic classification systems to categorize climates.

CO4: Analyse the relationships between atmospheric variables and their impacts.
ILO 4.1: Analyse the relationship between evaporation, humidity, and condensation processes.
ILO 4.2: Evaluate the influence of atmospheric pressure systems and wind patterns.
ILO 4.3: Assess the role of oceanic and atmospheric circulation patterns in regional climate variations.

CO5: Propose solutions for climate-related challenges.
ILO 5.1: Develop strategies to mitigate the impact of extreme weather events.
ILO 5.2: Propose adaptation measures to address the challenges posed by climate change.
ILO 5.3: Synthesize interdisciplinary perspectives to address complex climate-related issues.

CO6: Critically evaluate climatic data and climate change theories.
ILO 6.1: Critically evaluate the reliability and limitations of climatic data sources.
ILO 6.2: Assess the validity of climate change theories and predictions.
ILO 6.3: Formulate well-reasoned arguments and recommendations for addressing climate change challenges in policy and practice.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1, CO2					
Conceptual		CO1, CO2	CO3, CO5	CO4, CO5		
Procedural	CO3	CO3	CO4, CO6			CO6
Metacognitive			CO4	CO6	CO6	

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	S	M	M	M	S	M	M	M
CO4	S	M	M	M	M	M	S	M
CO5	M	M	S	M	S	S	S	M
CO6	M	M	S	M	S	S	M	M

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Atmospheric Temperature and Insolation	a. Atmosphere; Definition, Composition and structure b. Temperature; factors, Distribution c. Insolation, Heat budget, temperature inversion	10	2		12
2 (15 marks	Atmospheric pressure and winds	a. Pressure belts, Planetary Winds, Jet Streams, Monsoon. 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. Concept, Elements and factors of weather and climate, c. Climatic classification: Koeppen and Thornthwaite. d. **Knowledge about seasons and climates of ancient India**	15	2		17
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: Practicals***

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:

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. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATION**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 2ND SEMESTER

COURSE TITLE	**: CLIMATOLOGY AND BIOGEOGRAPHY**
COURSE CODE	**: MINGGR2**
NATURE OF THE COURSE	**: MINOR**
TOTAL CREDITS	**: 4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**: 60 (End-Sem.) (45T+15P) + 40 (In Sem)**

Course Description:

This course provides a comprehensive understanding of the physical aspects of Earth's climate system and the intricate relationship between climate and geography. It delves into the mechanisms governing atmospheric phenomena, global energy balance, and climatic patterns across the globe. Additionally, it explores the distribution of organisms and ecosystems on Earth's surface and addresses the significance of biodiversity conservation.

Prerequisites: None

Course Objectives:

- To foster a scientific understanding of the Earth's climate system and the factors influencing climate change.
- To analyze the global energy balance and the transfer of radiation in the atmosphere through quantitative methods, elucidating the general circulation of winds.

- To emphasize the relevance of atmospheric phenomena to human activities, focusing on the impact of weather on daily life.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Analyze the components and dynamics of Earth's climate system.
ILO 1.1: Identify the key elements of Earth's atmosphere and their role in climate regulation.
ILO 1.2: Interpret temperature distribution patterns and the mechanisms driving heat exchange within the atmosphere.
ILO 1.3: Analyze the causes and implications of temperature inversions.

CO2: Evaluate the influence of atmospheric pressure and wind patterns on global climate.
ILO 2.1: Examine the concept of pressure belts and their role in shaping global atmospheric circulation.
ILO 2.2: Evaluate the impact of jet streams and monsoons on regional climate variability.
ILO 2.3: Assess the significance of cyclones, anticyclones, and local wind systems in atmospheric circulation.

CO3: Assess the biogeographical patterns and their significance in biodiversity conservation.
ILO 3.1: Define biogeography and its relevance in understanding the distribution of spacies.
ILO 3.2: Analyze the major zoogeographical and phyto-geographical regions of the world.
ILO 3.3: Evaluate the causes and consequences of biodiversity loss and conservation.

CO4: Apply quantitative methods to interpret weather data and climatic classifications.
ILO 4.1: Interpret weather symbols depicted on maps to analyze atmospheric conditions.
ILO 4.2: Utilize rainfall-temperature graphs, hythergraphs, and Climograph to represent climatic data.
ILO 4.3: Demonstrate proficiency in mapping protected areas and biodiversity hotspots.

CO5: Synthesize information to understand the interactions between climate, geography, and human activities.
ILO 5.1: Analyze climatic patterns and their impact on agriculture, economy, and society.
ILO5.2: Cite examples illustrating the interplay between climate change and human livelihoods.
ILO 5.3: Evaluate strategies for mitigating and adapting to climate change at different levels.

CO6: Demonstrate proficiency in critical thinking and problem-solving related to climatic and biogeographical issues.
ILO 6.1: Critically analyze debates on climate change and biodiversity conservation.
ILO 6.2: Apply theoretical concepts to real-world scenarios to propose sustainable solutions.
ILO 6.3: Interpret biodiversity mapping and address complex environmental challenges.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analysis	Evaluate	Create

Factual	CO1					
Conceptual		CO2, CO3, CO5				
Procedural			CO4			CO6
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	M	M	M	M	M	M	M
CO3	S	S	M	M	M	M	M	M
CO4	M	M	M	S	S	S	S	M
CO5	S	M	S	M	M	S	S	S
CO6	S	S	S	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction to Climatology	a. Meaning, Nature and Scope of Climatology b. Composition and Structure of Atmosphere, Elements of weather and climate, c. Temperature Distribution, Insolation, Heat budget, Temperature Inversion,	12	1		13
2 (15 Marks)	Atmospheric Pressure and Winds	a. Pressure Belts and General Circulation, Jet Streams, Monsoon: Origin And Mechanism, 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 e. **Knowledge about seasons and climates of ancient India**	14	1		15
3 (15 Marks)	Biogeography	a. Biogeography: Definition, scope and significance b. Zoogeographical and Phyto-geographical regions of the world c. Loss of Biodiversity and its Conservation.	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	7	3	20	30

		the world and India.				
		TOTAL:	**48**	**7**	**20**	**75**

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

Modes of In-Semester assessment: **40 marks**

- **Two internal assessment** **30 marks**
- **Any one of the following activities listed below** **-** **10 marks**
  a. Group Discussion
  b. Seminar presentation on any of the relevant topics
  c. Home assignment
- **Practical** **10 Marks**

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.
22. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 2ND SEMESTER

TITLE OF THE COURSE	**: FUNDAMENTALS OF GEOMORPHOLOGY**
COURSE CODE	**: GECGGR2A**
NATURE OF THE COURSE	**: GENERIC ELECTIVE COURSE (GEC)**
TOTAL CREDITS	**: 3 CREDITS**
DISTRIBUTION OF MARKS	**: 60 (End Sem) + 40 (In-Sem)**

Course Description:
This course, "Fundamentals of Geomorphology," delves into the foundational principles governing the formation and evolution of Earth's surface features. It encompasses an exploration of the dynamic processes shaping landscapes, including the influence of both endogenetic and exogenetic forces. Through a combination of theoretical insights and practical applications, students will gain a comprehensive understanding of geomorphological phenomena and their significance in shaping the Earth's surface.

Prerequisites: None

Course Objectives:

- Introduce the meaning, nature, scope, and fundamental concepts of Geomorphology.
- Understand the growth and evolution of surface relief features on Earth.
- Explore the impact of various geological processes, including the work of running water, underground water, moving ice, wind, and sea waves, as well as weathering and mass wasting.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Describe the Meaning, Nature, and Scope of Geomorphology
ILO 1.1: Define geomorphology and explain its relevance in physical geography.
ILO 1.2: Discuss the historical development and various branches of geomorphology.
ILO 1.3: Identify key terminologies and concepts in the study of geomorphology.

CO2: Analyse Fundamental Concepts in Geomorphology
ILO 2.1: Illustrate fundamental geomorphological concepts such as landform, erosion, and deposition.
ILO 2.2: Compare and contrast different geomorphological processes and their effects.
ILO 2.3: Apply the principles of geomorphology to real-world geographic scenarios.

CO3: Explain the Internal Structure of the Earth
ILO 3.1: Describe the layers of the Earth based on their physical properties.
ILO 3.2: Explain the chemical composition of the Earth's layers.
ILO 3.3: Correlate the internal structure of the Earth with its geodynamic processes**.**

CO4: Interpret the Nature and Behavior of Seismic Waves and Their Types
ILO 4.1: Differentiate between primary (P) waves, secondary (S) waves, and surface waves.
ILO 4.2: Analyse how seismic waves provide information about the Earth's interior.
ILO 4.3: Utilize seismic wave data to identify and interpret geological features.

CO5: Evaluate the Impact of Endogenetic Forces on Landform Evolution
ILO 5.1: Describe the processes of earth movements, including sudden and slow movements.
ILO 5.2: Explain the formation of folds and faults and their influence on the landscape.
ILO 5.3: Analyse the role of plate tectonics in the formation of mountains and other landforms.

CO6: Assess the Processes and Outcomes of Exogenetic Forces
ILO 6.1: Identify various types of weathering and mass wasting and their effects on landforms.
ILO 6.2: Explain the geomorphic work of running water, underground water, glaciers, and wind.
ILO 6.3: Assess the interaction between exogenetic processes and resulting geomorphicfeatures.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual		CO1				
Conceptual		CO2	CO3	CO4	CO5	
Procedural				CO4		CO6

Metacognitive			CO4	CO6		

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	M	M	S	M
CO2	S	S	M	M	S	M	M	S
CO3	S	S	M	M	S	M	M	M
CO4	S	S	M	M	M	M	M	M
CO5	S	S	M	M	M	M	M	M
CO6	S	S	M	M	M	M	M	M

Where, S: Strong correlation ***M: Medium correlation***

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. **Distribution of land and water according to ancient Indian knowledge**	8	4		12
2 (15 Marks)	Interior of the Earth	a. Internal structure of the Earth: Layers based on physical and chemical properties. b. Seismic waves and types	6	3		9
3 (15 Marks)	Evolution of Landforms Due to Endogenetic Forces	a. Earth movements, Sudden and slow movements b. Folds and Faults c. Plate Tectonics: Types of plates and plate boundaries; plate tectonics and mountain building.	8	4		12
4 (15 Marks)	Evolution of Landforms Due to Exogenetic Forces	a. Weathering and Mass Wasting– Concept and types. b. Work of Running Water, Underground Water, Glacier and Wind	8	4		12
		TOTAL	**30**	**15**		**45**

Where, L: Lectures T: Tutorials P: Practicals

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

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.

11. ***Geography, Peoples And Geodynamics of India In Puranas and Epics*** **by K.S. Valdiya Publisher : Aryan Books International (30 May 2012)**

12. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 2ND SEMESTER

TITLE OF THE COURSE : FUNDAMENTALS OF ECONOMIC GEOGRAPHY
COURSE CODE : GECGGR2B
NATURE OF THE COURSE: GENERIC ELECTIVE COURSE (GEC)
TOTAL CREDITS : 3 CREDITS
DISTRIBUTION OF MARKS: 60 (End Sem) + 40 (In-Sem)

Course Description:
This course introduces students to the fundamental concepts of economic geography, focusing on the dynamics of economic activities, resource utilization, and the rationale behind the spatial distribution of industries and agricultural activities. Through systematic and spatial approaches, students explore the relationship between human activities and geographical factors shaping economic landscapes.

Prerequisites: None

Course Objectives:

- To convey an understanding of the fundamental concepts of economic geography.
- To understand the dynamics of economic activities, resource utilization, and population pressure on resource bases.
- To comprehend the rationale for the spatial distribution of industries and agricultural activities through locational theories.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Demonstrate comprehension of the fundamental concepts of economic geography and its relevance in analysing spatial patterns of economic activities.
ILO 1.1: Define key terms and concepts in economic geography.
ILO1.2: Explain the significance of economic geography in understanding regional development patterns.
ILO 1.3: Interpret spatial data to analyse economic trends and patterns.

CO2: Apply theoretical frameworks to analyse the impact of natural resources on economic activities and assess locational factors influencing industrial and agricultural locations.
ILO 2.1: Utilize theoretical models to analyse resource distribution and its impact on economic development.
ILO 2.2: Evaluate the suitability of locations for different economic activities based on locational theories.
ILO2.3: Apply spatial analysis techniques to understand the spatial distribution of economic activities.

CO3: Analyse the dynamics of economic activities and their relationship with the natural environment, identifying patterns of resource utilization and their implications.
ILO 3.1: Analyse the impact of environmental factors on economic decision-making and resource utilization.
ILO 3.2: Compare and contrast different types of economic activities in terms of their environmental impacts.
ILO 3.3: Evaluate the sustainability of economic activities based on their environmental footprint.

CO4: Evaluate the significance of international trade and examine its role in shaping global economic networks.
ILO 4.1: Assess the role of international trade in influencing regional economic development.
ILO 4.2: Evaluate the impacts of globalization on economic landscapes and spatial patterns.
ILO 4.3: Critically analyse trade policies and their implications for economic geography.

CO5: Synthesize knowledge of locational theories to propose solutions for optimizing industrial and agricultural locations.
ILO 5.1: Design strategies for sustainable industrial and agricultural development.
ILO 5.2: Develop a comparison for spatial models to optimize resource utilization and minimize environmental impacts.
ILO 5.3: Propose policy recommendations for promoting balanced regional development.

CO6: Demonstrate an understanding of the historical development and contemporary theories in economic geography.
ILO 6.1: Trace the historical evolution of locational theories in economic geography.
ILO 6.2: Analyse case studies the application of locational theories in real-world contexts.
ILO 6.3: Evaluate the relevance of traditional and contemporary locational theories.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analysis	Evaluate	Create
Factual	CO1					
Conceptual		CO2	CO2, CO3	CO3, CO4	CO4	
Procedural			CO5		CO5	
Metacognitive						CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	S	M	M	M	M	M
CO2	S	S	M	M	S	M	M	M
CO3	M	S	S	M	S	M	S	M
CO4	M	M	S	M	M	M	M	M
CO5	S	S	S	M	S	S	M	S
CO6	S	S	M	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction to Economic Geography	a. Meaning, Nature and Scope of Economic Geography, b. Approaches to the study: Systematic and Spatial approaches, c. Fundamental Concepts in Economic Geography	8	3		11
2 (15 Marks)	Introduction to Resources	a. Resource; Concept and Resource creating factors. b. Classification and Types of resources. c. Functional Theory of Resources d. **Traditional resource management in India**	8	4		12
3 (15 Marks)	Economic Activities	a. Effect of Natural Environment on Economic Activities, b. Classification of economic activities: Primary, Secondary, Tertiary and Quaternary activities. c. International Trade	6	4		10
4 (15 Marks)	Locational Theories	a. Agricultural (Von Thunen), b. Industrial location Theory (Weber and Losch).	8	4		12
		TOTAL	**30**	**15**		**45**

Where, L: Lectures T: Tutorials P: Practicals

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

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.
10. **Traditional Knowledge System in India by Amit Jha Publisher : Atlantic (1 April 2024); Atlantic Publishers and Distributors (P) Ltd**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 2ND SEMESTER

TITLE OF THE COURSE :METHODS AND TECHINQUES OF FIELD STUDY
COURSE CODE :SEC206
NATURE OF THE COURSE :SKILL ENHANCEMENT COURSES (SEC)
TOTAL CREDITS : 3 CREDITS (2+1)
DISTRIBUTION OF MARKS :60 (End Sem) (45T+15P) + 40 (In Sem)

Course Description:

This course, Methods and Techniques of Field Study, equips students with essential skills for conducting geographical field studies. It covers various methods of data collection, including primary and secondary techniques, and emphasizes the preparation and presentation of comprehensive field reports using digital media.

Prerequisites: None.

Course Objectives:

- Enhance understanding of field study concepts, data types, and their significance in geographical research.
- Develop proficiency in techniques for collecting primary data, preparing questionnaires, and processing and analysing data systematically.

- Foster the ability to construct field reports, incorporating quantitative techniques, diagrams, maps, and photographs for effective communication.
- Cultivate practical skills in conducting field studies, collecting data, and preparing comprehensive reports.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Demonstrate field study concepts and data types through analysis and interpretation.
ILO 1.1: Identify different types of geographical data.
ILO 1.2: Explain the significance of field study in geographical research.
ILO 1.3: Classify techniques for collecting primary and secondary data.

CO2: Illustrate data collection techniques and processes through practical application.
ILO 2.1: Apply appropriate techniques for primary data collection.
ILO 2.2: Analyse data tabulation, processing, and analysis methods.
ILO 2.3: Interpret the preparation of questionnaires and schedules for field research.

CO3: Apply theoretical knowledge to design comprehensive field reports.
ILO 3.1: Design field study reports with clear aims, objectives, and methodology.
ILO 3.2: Utilize tables, charts, diagrams, maps, and photographs effectively in field reports.
ILO 3.3: Implement digital media for enhanced presentation and dissemination of findings.

CO4: Analyse the components and structure of field reports.
ILO 4.1: Evaluate the structure of field study reports for coherence and clarity.
ILO 4.2: Critically assess the use of visual aids in data representation.
ILO 4.3: Compare and contrast different methods of field data interpretation.

CO5: Create filed report by synthesizing theoretical knowledge and practical skills.
ILO 5.1: Synthesize theoretical concepts with practical fieldwork experience.
ILO 5.2: Develop innovative approaches to data collection and analysis.
ILO 5.3: Integrate various media formats for impactful report presentation.

CO6: Evaluate the effectiveness of field study methodologies and reporting techniques for geographical research.
ILO 6.1: Critique the strengths and limitations of different data collection methods.
ILO 6.2: Assess the reliability and validity of field study findings.
ILO 6.3: Propose improvements to enhance the quality and rigor of field research practices.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO2, CO3	CO3, CO4	CO4		
Procedural			CO5		CO5, CO6	CO6
Metacognitive				CO5	CO5	CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	S	S	S	S
CO2	M	M	M	M	S	S	S	S
CO3	M	M	M	M	S	S	S	S
CO4	M	M	M	M	S	S	S	S
CO5	M	M	M	M	S	S	S	S
CO6	M	M	M	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	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 (17 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 (18 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. c. Use of digital media		2	43	45
		TOTAL	**25**	**7**	**43**	**75**

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

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**

Suggested Readings

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 THE COURSE	**:**	**ENVIRONMENTAL GEOGRAPHY**
COURSE CODE	**:**	**GGRC3**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Description:
This course delves into Environmental Geography, exploring its concepts, principles, and the intricate relationship between humans and their environment. It covers the fundamentals of ecology, ecosystem dynamics, environmental degradation, conservation efforts, and sustainable development practices.

Prerequisites: Basic understanding of geography and ecological principles.

Course Objectives:

- Understand the fundamental concepts, scope, and developments in environmental geography.
- Analyse the structure, functions, and dynamics of ecosystems, along with their distribution patterns.
- Explore the intricate relationship between human activities and the environment across various biomes.
- Examine the causes, impacts, and measures for mitigating environmental degradation.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs)

CO1: Demonstrate a comprehensive understanding of environmental geography principles and concepts.
ILO 1.1: Identify key concepts in environmental geography.
ILO 1.2: Define the scope and nature of environmental geography.
ILO 1.3: Recall the developments in the field of environmental geography.

CO2: Interpret the principles of ecology and their application in understanding ecosystems.
ILO 2.1: Explain the principles governing ecological systems.
ILO 2.2: Interpret the structure and function of ecosystems.
ILO 2.3: Discuss the significance of ecological dynamics in environmental studies.

CO3: Apply ecological concepts to analyse the relationships between human activities and the environment.
ILO 3.1: Apply ecological principles to analyse human-environment interactions.
ILO 3.2: Evaluate the impact of human activities on different biomes.
ILO 3.3: Propose adaptive strategies for sustainable human-environment coexistence.

CO4: Analyse environmental degradation processes and evaluate conservation strategies.
ILO 4.1: Analyse the causes and consequences of environmental degradation.
ILO 4.2: Evaluate conservation efforts for water, soil, forests, and marine ecosystems.
ILO 4.3: Critically assess environmental policies and their effectiveness.

CO5: Integrate knowledge from field observations to propose solutions for environmental challenges.
ILO 5.1: Synthesize field observations to identify environmental issues.
ILO 5.2: Generate hypotheses for addressing environmental problems.
ILO 5.3: Develop action plans for environmental conservation based on collected data.

CO6: Evaluate the effectiveness of environmental protection policies and practices.
ILO 6.1: Critique environmental protection policies for their efficacy.
ILO 6.2: Assess the impact of environmental impact assessments (EIA).
ILO 6.3: Formulate recommendations for promoting sustainable development practices.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO2	CO3			
Procedural			CO3	CO4		CO6
Metacognitive					CO5	CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	S	M	S	M	S	M	M	M
CO4	M	S	M	M	M	M	M	S
CO5	M	S	S	M	S	S	S	S
CO6	M	M	S	M	S	S	S	M

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Environmental Geography	a. Concept, nature and scope of environmental geography, b. Ecology: Meaning, Nature, Types, Principles of ecology c. **Indian Knowledge System in environmental management**	12	3	-	15
2 (15 Marks)	Ecosystem	a. Ecosystem: Concept, Types, Structure and Functions, Distribution, Food chain, Food web, Trophic level b. Biomes: Concept and Types	12	3	-	15
3 (15 Marks)	Environment Degradation	a. Meaning, nature, cause and impact b. Conservation of environment, water, soil and wetland, forest and marine. c. Policies of Environmental protection &conservation; Concept of EIA d. Concept of Sustainable Development	12	3	-	15
4 (15 Marks)	Practical	Field Observation and Data Collection: • 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 therein. • Collect data on various environmental parameters like temperature, humidity, wind speed/soil composition using appropriate instruments. • 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: Practicals

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:

1. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480 p.
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. 639 p.
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).
8. **Traditional Knowledge System in India by Amit Jha Publisher : Atlantic (1 April 2024); Atlantic Publishers and Distributors (P) Ltd**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 3RD SEMESTER

TITLE OF THE COURSE	**: REMOTE SENSING AND GIS IN GEOGRAPHY**
COURSE CODE	**: GGRC4**
NATURE OF THE COURSE	**: MAJOR**
TOTAL CREDITS	**: 4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**: 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Description:

Remote Sensing and GIS in Geography offers a comprehensive exploration of remote sensing and Geographic Information Systems (GIS) as integral tools in geographic analysis. The course covers fundamental principles of remote sensing, including electromagnetic radiation, sensor technology, and image processing techniques. Students will gain hands-on experience in GIS software for spatial data management, analysis, and visualization, enhancing their capability to apply remote sensing and GIS in addressing real-world geographic problems such as land-use change, resource management, and urban planning. Through critical engagement with current research and practical applications, students will develop proficiency in both technical skills and the communication of complex geospatial concepts.

Prerequisites

There are no formal prerequisites for this course, but a foundational understanding of geography and basic computer skills is recommended.

Course Objectives

- Understand Remote Sensing Principles: Comprehend the principles of remote sensing, including the properties of electromagnetic radiation, sensors, and platforms.
- Analyze Remote Sensing Data: Utilize image processing techniques to enhance, classify, and interpret remote sensing data.
- Understand GIS Principles: Grasp the fundamentals of GIS, including data management, spatial analysis, and cartography.
- Apply GIS Software: Employ GIS software to manage, analyze, and visualize spatial data, integrating remote sensing information.
- Solve Geographic Problems: Apply remote sensing and GIS techniques to address geographic issues such as land-use change, resource management, and urban planning.

Course Outcomes (Cos) and Intended Learning Outcomes (ILOs): Students will be able to

CO1: Describe the fundamental concepts, components and historical development of remote sensing

ILO 1.1: Define remote sensing and explain its significance in geographic studies.

ILO 1.2: Identify key components and platforms used in remote sensing.

ILO 1.3: Outline the historical milestones in the development of remote sensing technology.

CO2: Analyse and interpret remote sensing data using digital image processing techniques.

ILO2.1: Differentiate between types of digital images and their characteristics.

ILO 2.2: Explain the steps involved in digital image processing.

ILO 2.3: Perform image enhancement and classification using appropriate software tools.

CO3: Explain the principles of GIS, including the management and analysis of spatial and non-spatial data.

ILO 3.1: Define GIS and discuss its core components and functions.

ILO 3.2: Differentiate between raster and vector data structures and their applications.

ILO 3.3: Describe methods for collecting and geo-referencing spatial data.

CO4: Utilize GIS software to create, manage, and analyse spatial data, including the integration of remote sensing data.

ILO 4.1: Import and manipulate raster and vector data within a GIS interface,

ILO 4.2: Create and edit shapefiles, and perform spatial analysis such as buffering.

ILO 4.3: Conduct GIS-based data visualization and interpretation.

CO5: Apply remote sensing and GIS techniques to practical geographic problems, such as land-use change detection.

ILO 5.1: Identify appropriate remote sensing and GIS methods for specific geographic problems.

ILO 5.2: Analyse and interpret satellite images for landform and land-use analysis;

ILO 5.3: Develop GIS-based solutions for resource management and urban planning challenges.

CO6: Critically evaluate and communicate remote sensing and GIS research and findings effectively.

ILO 6.1: Review and critique recent literature on remote sensing and GIS methodologies.

ILO 6.2: Prepare and present research findings clearly and concisely.

ILO 6.3: Write comprehensive reports and papers on remote sensing and GIS applications.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analysis	Evaluate	Create
Factual	CO1	CO1				
Conceptual		CO3				
Procedural			CO2	CO4	CO6	CO5
Metacognitive					CO6	

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	S	S	M	M	S	S	M	S
CO4	M	S	M	M	S	S	S	S
CO5	M	S	M	M	S	S	S	S
CO6	M	S	M	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENT	L	T	P	Total Hours
1 (15 Marks)	Remote Sensing	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 Electromagnetic Spectrum, Atmosphere and Surface - radiation interaction	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. Introduction to geo- referencing of topographical map (raster image) 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. Import Raster and Vector data to GIS interface, Geo-Referencing; Creation of shape file; Editing, creation of buffer, on point, line and polygon b. Image Processing (Digital and Manual) and Data Analysis: Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering); Classification (Supervised and Un-supervised), c. Satellite Image interpretation; Delineation of landforms, river basin, land use/land cover; Spatio-temporal change: land use/land cover, river bank migration d. GPS: Ground verification		2	28	30
		TOTAL	**36**	**11**	**28**	**75**

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

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:

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 IBH Pub.
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 SamvedanevamBhogolik Suchana Pranali, Sharda Pustak Bhawan, Allahabad.

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

TITLE OF THE COURSE :HUMAN, SOCIAL AND CULTURAL GEOGRAPHY
COURSE CODE : MINGGR3
NATURE OF THE COURSE: MINOR
TOTAL CREDITS :4 CREDITS (3+1)
DISTRIBUTION OF MARKS: 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

Course Description:

This course is designed to explore the diverse and dynamic aspects of human, social, and cultural geography. The course provides an in-depth understanding of the definitions, nature, and scope of human, social, and cultural geography, their major subfields, and contemporary relevance. It delves into various schools of thought like determinism, possibilism, and neo-determinism, examines the Human Development Index across different regions, and addresses social problems such as education, health, gender, housing, and crime, particularly

in India. Furthermore, the course involves practical applications of geographical techniques like age–sex pyramids and disparity maps to analyse human development.

Prerequisites:

a) Fundamental understanding of basic geography concepts.
b) Previous coursework or knowledge in introductory human or physical geography.

Course Objectives:

- To introduce fundamental concepts in Human, Social, and Cultural Geography.
- To explore various approaches and schools of thought in geographical studies and their significance.
- To comprehend spatial distribution and address social issues related to key components of geography.
- To develop practical skills in using statistical and graphical techniques for geographical analysis.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Analyse fundamental concepts and contemporary relevance of human geography to recognize its scope and importance in understanding human-environment interactions.

ILO 1.1: Describe key concepts in human geography.

ILO1.2: Identify the relevance of human geography in modern contexts.

ILO 1.3: Students will be able to relate human geography theories to real-world examples.

CO2: Evaluate the principles and theories of determinism, possibilism, and neo-determinism to distinguish their applications and implications in human geography studies.
ILO 2.1: Differentiate between determinism, possibilism, and neo-determinism.
ILO 2.2: Assess the implications of each school of thought on human geography.
ILO 2.3: Apply these principles to case studies.

CO3: Assess the Human Development Index across various regions to understand development disparities and associated challenges.
ILO 3.1: Calculate and interpret the Human Development Index.
ILO 3.2: Compare the development status of different countries.
ILO 3.3: Discuss the problems and prospects related to development in these regions.

CO4: Examine the scope and types of space in social geography to understand the relationships between society, space, and the environment in addressing social issues.
ILO 4.1: Define the concept of space in social geography.
ILO 4.2: Categorize different types of space and their significance.
ILO 4.3: Analyse social issues within the context of space and environment interactions.

CO5: Explore cultural regions and diffusion to understand cultural dynamics and the factors influencing cultural change and diversity.
ILO 5.1: Identify and map cultural regions of the world.
ILO 5.2: Explain the concept and process of cultural diffusion.
ILO 5.3: Analyse factors that affect cultural diffusion and its outcomes.

CO6: Apply practical skills in creating age–sex pyramids and disparity maps to evaluate demographic and social disparities in developed and developing regions.
ILO 6.1: Construct and interpret age–sex pyramids for different regions.
ILO 6.2: Create sex disparity maps with regional focus.
ILO 6.3: Utilize histograms, line graphs, and pie diagrams to represent human development data effectively.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1	CO1				
Conceptual	CO1, CO2	CO2, C04, C05	CO3	CO2, CO4	CO4, CO5	
Procedural		CO6	CO3, CO6	CO3, CO6		CO6
Metacognitive		CO4, CO5			CO3	

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	M	S	M	M	M	S	M
CO2	S	M	M	M	M	M	S	M
CO3	M	S	S	M	S	S	S	M
CO4	S	S	S	M	M	M	M	M
CO5	S	S	M	M	M	M	M	M
CO6	S	S	M	M	S	S	M	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 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	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. Society and environment d. Social problems in India: Education, Health, Gender, Housing and Crime.	12	3		15

3 (15 Marks)	Cultural Geography	a. Definition, nature and scope of Cultural Geography b. Cultural Regions of the World c. **Varna system in ancient India** d. Cultural diffusion: meaning, factors affecting cultural diffusion	12	3		15
4 (15 Marks)	Practical in Human Geography	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)	8	2	20	30
		TOTAL	**44**	**11**	**20**	**75**

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

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:

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.
15. **Traditional Knowledge System in India by Amit Jha Publisher : Atlantic (1 April 2024); Atlantic Publishers and Distributors (P) Ltd**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 3RD SEMESTER

TITLE OF THE COURSE	**: CLIMATOLOGY**
COURSE CODE	**: GECGGR3A**
NATURE OF THE COURSE	**:GENERIC ELECTIVE COURSE (GEC)**
TOTAL CREDITS	**: 3 CREDITS**
DISTRIBUTION OF MARKS	**: 60 (End-Sem) + 40 (In-Sem)**

Course Description:
This course explores the fundamental concepts of the Earth's atmosphere, including its composition, structure, and variations. It examines atmospheric pressure systems, wind patterns, and the dynamics of atmospheric moisture, providing a comprehensive understanding of weather, climate, and their influencing factors. The course delves into the global climate system with a focus on Köeppen's climate classification and contemporary issues such as climate change, floods, and droughts. It emphasizes the interconnections between atmospheric phenomena and their impact on global and regional climates, aiming to equip students with the skills to analyse climatic processes and their implications.

Prerequisites:

a. Basic knowledge of physical geography and general science.
b. Familiarity with fundamental environmental concepts and processes.
c. Prior coursework or interest in Earth sciences or meteorology is beneficial.

Course Objectives:

- To introduce students to the principles of climatology and the differences between weather and climate.
- To understand the global atmospheric pressure systems and wind patterns.
- To learn about the basics of atmospheric moisture, its processes, and the implications of climate change.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain the composition and structure of the atmosphere and their variations with altitude, latitude, and season.

ILO 1.1: Describe the vertical layers of the atmosphere and their characteristics.

ILO 1.2: Analyse how atmospheric composition varies with altitude and geographical location.

ILO 1.3: Explain the seasonal changes in atmospheric composition and structure.

CO2: Describe the factors influencing atmospheric pressure and the distribution of pressure belts globally.

ILO 2.1: Identify and explain the factors that affect atmospheric pressure.

ILO 2.2: Discuss the horizontal and vertical distribution of atmospheric pressure.

ILO 2.3: Outline the global pattern of pressure belts and their climatic significance.

CO3: Analyse different types of winds and their causes, including planetary, seasonal, and local winds.
ILO 3.1: Differentiate between planetary, seasonal, and local winds.
ILO 3.2: Explain the causes of various wind patterns, including land and sea breezes.
ILO 3.3: Assess the impact of different wind types on regional climates.

CO4: Evaluate the types and characteristics of air masses and their role in the formation of cyclones.
ILO 4.1: Define and classify different types of air masses.
ILO 4.2: Explain the processes involved in the formation of tropical and temperate cyclones.
ILO 4.3: Assess the global distribution and impacts of different cyclone types.

CO5: Interpret the concepts of atmospheric moisture including humidity, hydrological cycle, and precipitation.
ILO 5.1: Describe absolute, relative, and specific humidity and their measurement.
ILO 5.2: Explain the components and processes of the hydrological cycle.

ILO 5.3: Identify and differentiate between various forms and types of precipitation.

CO6: Assess Köeppen's climate classification and analyse the causes and consequences of climate change
ILO 6.1: Outline Köeppen's climate classification system with a focus on Indian climates.
ILO 6.2: Explain the primary causes and effects of contemporary climate change.
ILO 6.3: Discuss the recent issues related to climate change, including floods and droughts.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual		CO1				
Conceptual		CO1, CO2, CO5		CO3, CO6	CO4	
Procedural						
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	S	M	M	M	M	S	M
CO3	S	M	M	M	M	M	S	M
CO4	S	M	M	M	M	M	M	M
CO5	S	S	M	M	M	M	M	M
CO6	S	S	S	M	M	M	S	M

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Atmosphere	a. Atmospheric Composition and Structure, b. Variation with Altitude, Latitude and Season. c. Weather and Climate: Elements and factors d. **Weather observation in ancient India**	**8**	**3**		**11**
2 (15 Marks)	Atmospheric Pressure and Winds	a. Atmospheric Pressure–Influencing factors on atmospheric pressure. Vertical and Horizontal Distribution, Pressure Belts. b. Winds: Types - planetary, seasonal, local wind (land and sea breeze; loo). c. Air-Masses and its types; Cyclones: Tropical and temperate and their distribution.	**8**	**4**		**12**

3 (15 Marks)	Atmospheric Moisture	a. Humidity: Absolute, Relative and Specific. b. Hydrological cycle: Component, process and factors affecting. c. Precipitation and its forms; Types of rainfall.	**7**	**4**		**11**
4 (15 Marks)	Global climate system	a. Koeppen's classification of climate (India) b. Climate Change: Causes and consequences (recent issues- floods and droughts)	**7**	**4**		**11**
		TOTAL	**30**	**15**		**45**

Where, L: Lectures T: Tutorials P: Practicals

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

Suggestive Readings:

1. Routledge, UK.
2. BarryR.G.andCorleyR.J.,1998: *Atmosphere, Weather and Climate*, Routledge, New York.
3. CritchfieldH.J.,1987: *General Climatology*, Prentice-Hallof India, New Delhi
4. Lutgens F.K., Tarbuck E.J. and TasaD.,2009: *The Atmosphere: An Introduction to Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. OliverJ.E.andHidoreJ.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 LS (2000): Jalvayu Vigyan, Hindi Madhyam KaryanvayNidishalya, Delhi Vishwa Vidhyalaya, Delhi
8. Lal, DS (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.
11. **Vedic Meteorology by Ravi Prakash Arya Publisher : Indian Foundation for Vedic Science; Third edition (24 May 2017)**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 3RD SEMESTER

TITLE OF THE COURSE	**: SETTLEMENT GEOGRAPHY**
COURSE CODE	**: GECGGR3B**
NATURE OF THE COURSE	**:GENERIC ELECTIVE COURSE (GEC)**
TOTAL CREDITS	**: 3 CREDITS**
DISTRIBUTION OF MARKS	**: 60 (End-Sem) + 40 (In-Sem)**

Course Description:
This course provides an in-depth exploration of settlement geography, encompassing rural and urban settlements, their evolution, characteristics, and associated theories. Through theoretical frameworks and case studies, students will analyse the dynamics of settlement patterns and their implications on socio-economic development.

Prerequisites: None

Course Objectives:

- Introduce settlement geography, its nature, scope, and classification.
- Understand the concept of rural and urban settlements along with their development processes.
- Learn the fundamentals of settlement theory including central place theory and rural-urban continuum.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Analyse settlement patterns and their impact on land use planning.
ILO 1.1: Identify different types of settlements based on their morphology and distribution.
ILO 1.2: Evaluate the factors influencing the growth and spatial organization of settlements.
ILO 1.3: Interpret settlement dynamics within the context of regional development.

CO2: Demonstrate comprehension of rural settlement dynamics and challenges.
ILO 2.1: Describe the historical evolution of rural settlements and their typologies.
ILO 2.1: Assess the socio-economic factors shaping rural settlement patterns.
ILO 2.3: Propose solutions to mitigate rural settlement problems, particularly in the Indian context.

CO3: Evaluate the characteristics and complexities of urban settlements.
ILO 3.1: Examine the factors contributing to the rise and growth of urban settlements.
ILO 3.2: Classify urban settlements based on their functions and hierarchies.
ILO 3.3: Critically analyse urban settlement issues prevalent in India and suggest sustainable urban planning strategies.

CO4: Application of central place theory to understand spatial organization and service provision.
ILO 4.1: Interpret Christaller's central place theory in relation to urban hierarchy.
ILO 4.2: Utilize central place theory to analyse the distribution and accessibility of goods and services.
ILO 4.3: Illustrate the spatial arrangement of central places in various settlement systems.

CO5: Investigate the rural-urban continuum and its implications on settlement dynamics.
ILO 5.1: Describe the interdependencies and interactions between rural and urban areas.
ILO 5.2: Analyse the transitional zones along the rural-urban gradient.
ILO 5.3: Evaluate policies and interventions aimed at managing the rural-urban interface.

CO6: Synthesize theoretical frameworks to propose sustainable settlement planning solutions.
ILO 6.1: Integrate settlement theories with contemporary urban and regional planning approaches.

ILO 6.2: Develop comprehensive strategies for balanced rural and urban development.
ILO 6.3: Advocate for inclusive and environmentally sustainable settlement planning practices.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual						
Conceptual		CO1, CO2		CO1, CO5	CO3	
Procedural			CO4			CO6
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	S	S	M	M	M	M	M
CO3	S	S	S	M	M	M	S	M
CO4	S	S	S	M	S	S	S	M
CO5	S	S	M	M	S	M	M	M
CO6	S	S	S	M	S	S	M	M

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	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	6	3		9
2 (15 Marks)	Rural Settlement	a. Origin and growth of rural settlement b. Types and Patterns of Rural Settlement c. Morphology of rural settlement and rural settlement problems in India	8	4		12
3 (15 Marks)	Urban Settlement	a. Origin and growth of Urban settlement b. Basis of Classification and Hierarchy of Urban Settlement c. Morphology of urban settlement and problems of urban settlement in India d. **Urban settlement patterns in ancient India**	8	4		12
4 (15 Marks)	Settlement Theories	a. Central place theory of Christaller b. Rural-Urban dichotomy and continuum	8	4		12
		TOTAL	**30**	**15**		**45**

Where, L: Lectures T: Tutorials P: Practicals

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

Suggested Readings:

1. Chorley, R.J. and Haggett, P.,1967: Models in Geography, Methuen, London.
2. Gregory, D.,1978: Ideology, Science and Human Geography, Hutchin, Londan
3. Huntington, E,1951 Principles in Human Geography, John Wiley & Sons, Lnc, 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 Scenario, Rawat Publications, Jaipur and New Delhi
8. ClarkeJ.I.1972. Population Geography, Pergamon Press, Oxford
9. Carter.H.1972. The Story of Urban Geography, Edward Arnold, London
10. ***The Geography of the Puranas*** **by S.M. Ali Publisher: People's Publishing; New Delhi; 1966**
11. **The Geography of The Ramayana by R.K. Shukla Publisher. Koshal Book Depot**
12. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

B.A. /B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 3RD SEMESTER

TITLE OF THE COURSE	**:**	**CARTOGRAPHIC TECHNIQUES**
COURSE CODE	**:**	**SEC306**
NATURE OF THE COURSE	**:**	**SKILL ENHANCEMENT COURSE (SEC)**
TOTAL CREDITS	**:**	**3 CREDITS (2+1=3)**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem) (45T+15P) + 40 (In-Sem)**

Course Description:

This course introduces students to the fundamentals of cartography, emphasizing the significance of various techniques in geographical analysis. It covers topics such as map scales, map projections, and practical exercises in scale construction and map projection.

Prerequisites: None

Course Objectives:

- Understand the importance of cartographic techniques in geographical analysis.
- Explore different types of map scales and learn their construction methods.
- Examine the principles and classifications of map projection techniques.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Demonstrate comprehension of cartographic principles through the application of various map scales and projections.
ILO 1.1: Identify different types of map scales and their representations.
ILO 1.2: Explain the significance of choosing the appropriate map scale for a given geographical context.
ILO 1.3: Compare and contrast various methods of map scale notation.

CO2: Analyse geographical data effectively by selecting appropriate map scales for representation.
ILO 2.2: Interpret geographical data to determine the most suitable map scale.
ILO 2.2: Justify the selection of a specific map scale based on the characteristics of the geographical area being represented.
ILO 2.3: Utilize map scales to accurately measure distances and areas on maps.

CO3: Apply mathematical skills to accurately construct and manipulate map scales.
ILO 3.1: Apply mathematical techniques to convert between different types of map scales.
ILO 3.2: Demonstrate proficiency in enlarging and reducing map scales using appropriate methods.

ILO 3.3: Utilize mathematical principles to construct representative fractions and graphical notations for map scales
CO4: Evaluate the suitability of different map projection techniques for specific geographical regions.

ILO 4.1: Classify map projection techniques based on their principles of construction.
ILO 4.2: Evaluate the advantages and disadvantages of different map projections for specific geographical regions.
ILO 4.3: Justify the choice of map projection technique for a given mapping project.

CO5: Demonstrate proficiency in constructing map scales and graticules through practical exercises.
ILO 5.1: Demonstrate practical skills in constructing comparative scales and diagonal scales.
ILO 5.2: Apply geometric principles to enlarge and reduce map scales accurately.
ILO 5.3: Utilize appropriate tools and techniques to construct map projections effectively

CO6: Synthesize knowledge of cartographic techniques to create accurate and informative maps for geographical analysis.
ILO 6.1: Integrate knowledge of cartographic techniques to design maps that effectively communicate geographical information.
ILO 6.2: Apply critical thinking skills to analyse and interpret maps created using various cartographic techniques.
ILO 6.3: Demonstrate creativity in map design to enhance visual appeal and usability for geographical analysis.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual						
Conceptual		CO1		CO4		
Procedural			CO2, CO3, CO5 CO6			
Metacognitive						CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	M	M	M	M	S	M	S
CO3	S	S	M	S	S	S	M	S
CO4	S	S	M	S	S	S	M	S
CO5	S	S	M	S	S	S	M	S
CO6	S	S	M	S	S	S	M	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction to Cartography	a. Meaning and its importance in Geography. b. Co-Ordinate System of Earth; Latitude Longitude and their importance; International time zone c. Maps: Concept and types	9	1	-	10
2 (15 Marks)	Scales and their Function	a. Definition, Representation of scale, Notation of Scale (Representative Fraction, Verbal notation, Graphical). Types of scale: plain, comparative, Diagonal and Vernier	9	1	-	10

		scale. b. Conversion of scale c. Methods of enlargement and reduction of map scale.				
3 (15 Marks)	Map Projection	a. Map Projection: concept, classification, Principles of construction (Zenithal, Conical, and Cylindrical). b. Choice of map projection (World or any part).	8	2	-	10
4 (15 Marks)	Practical (Construction of Scale and Graticule)	a. Construction of comparative scale (kilometres to miles) b. Construction of Diagonal scale c. Enlargement and Reduction of scale (square method, triangle method) d. Construction of Map projection: Zenithal Gnomonic Projection, Conical one Standard Parallel Projection, Simple cylindrical projection.		2	28	30
		TOTAL	**26**	**6**	**28**	**60**

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

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 Mark**

Suggested Readings:

1. Campbell, J.,1984: Introductory Cartography, Prentice Hall Inc.
2. Mishra, R.P. and Ramesh, A. 1995: Fundamentals of Cartography, Concept Publishing Company.
3. Monkhouse F.J. and Wilkinson, H.R. 1971: Maps and Diagrams: Their Compilation and Construction; B. I. Publications Private Ltd. New Delhi.
4. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York.
5. Sarkar A. 1997, Practical Geography: A Systematic Approach, Orient Longman. Ltd. Hyderabad

SEMESTER IV

BA/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 4TH SEMESTER

TITLE OF THE COURSE: HUMAN, POPULATION AND SETTLEMENT GEOGRAPHY
COURSE CODE : GGRC5
NATURE OF THE COURSE : MAJOR
TOTAL CREDITS : 4 CREDITS (3+1=4)

DISTRIBUTION OF MARKS: 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

Course Description:
This course explores the interplay between human activities and geographical phenomena, focusing on population dynamics, settlement patterns, and their implications on societal development. Through theoretical frameworks and practical applications, students examine the spatial distribution of human populations, factors influencing settlement patterns, and contemporary issues in human geography.

Prerequisites: None

Course Objectives:

- To elucidate the interdisciplinary nature of Geography, integrating social and natural sciences.
- To introduce fundamental concepts and themes in Human Geography and underscore their contemporary significance.
- To analyse population dynamics including size, composition, growth, and distribution, alongside pertinent issues.
- To classify settlements, elucidating their evolution, characteristics, and functional aspects.
- To foster a deeper understanding and appreciation of geographical methodology and philosophical underpinnings.
- To develop a passion for further exploration and study in Geography through engaging pedagogy and practical applications.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:
CO1: Explain andevaluate the significance of Human Geography in societal development and identify its interdisciplinary connections.
ILO 1.1: Analyse the contributions of Human Geography to addressing contemporary societal challenges.
ILO 1.2: Assess the impact of human activities on geographical landscapes and ecosystems.
ILO 1.3: Formulate interdisciplinary approaches to complex geographical issues.

CO2: Apply theoretical frameworks to analyse population dynamics and understand their implications on regional development.
ILO 2.1: Interpret demographic data to discern trends in population growth and distribution.
ILO 1.2: Evaluate the impact of socio-economic factors on population dynamics.
ILO 1.3: Propose strategies for sustainable population management at local and global scales.

CO3: Classify settlements based on their characteristics and assess their socio-economic significance.
ILO 3.1: Analyse the factors influencing the location and morphology of rural and urban settlements.
ILO 3.2: Compare and contrast settlement patterns across different geographical regions.

ILO 3.3: Evaluate the role of settlements in fostering economic development and social cohesion.

CO4: Utilize geographical techniques to analyse population data and settlement patterns.
IL0 4.1: Apply mapping techniques to represent population distribution and density.
ILO 4.2: Interpret demographic indicators to assess regional development disparities.
ILO 4.3: Employ spatial analysis tools to identify patterns and trends in settlement geography.

CO5: Critically examine contemporary issues in population dynamics and settlement patterns.
ILO 5.1: Assess the social, economic, and environmental implications of aging populations and declining sex ratios.
ILO 5.2: Evaluate the effectiveness of policies aimed at addressing urbanization challenges.
ILO 5.3: Propose innovative solutions to mitigate the impacts of HIV/AIDS on vulnerable populations.

CO6: Demonstrate proficiency in geographical research methods and techniques through practical applications.
ILO 6.1: Design and conduct spatial analyses to investigate population dynamics and settlement patterns.
ILO 6.2: Present research findings effectively using appropriate visual aids and data visualization techniques.
ILO 6.3: Collaborate with peers to solve real-world geographical problems and communicate findings to diverse audiences.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analysis	Evaluate	Create
Factual						
Conceptual		CO1		CO3	CO1, CO5	
Procedural			CO2, CO4			CO6
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	M	M	S	M	S	M	S	M
CO2	S	M	S	M	M	M	S	M
CO3	S	S	S	M	M	M	M	M
CO4	S	S	M	M	S	S	M	S
CO5	M	M	M	M	S	S	M	M
CO6	S	S	S	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Human Geography	a. Human Geography: Definition, Nature, Scope & Contemporary Relevance; b. Approaches to the study of Human Geography; c. Human adaptation to various geographical conditions (Cold regions, hot regions, flood plains); d. Human groups (Races): Classification & their spatial distribution; e. Concept of Human Development	14	2		16
2 (15 Marks)	Population Geography	a. Definition, Nature and Scope b. Factors affecting distribution & density of population; Spatial distribution of Population; c. Population Composition-Literacy, Age-sex, Religion, Rural-Urban, Occupational; d. Population Dynamics: Measures of Fertility, Mortality & Migration-measures & determinants; e. Demographic Transition theory; f. Contemporary Issues-Ageing of population, declining sex ratio, HIV/AIDS;	14	2		16
3 (15 Marks)	Settlement Geography	a. Settlement: Concept & Classification. b. Rural Settlement: evolution, site and situational factors, patterns and types. c. Urban settlement: growth, functional classification of towns; d. **Urban settlement in ancient India** e. Hierarchy of settlement, Primate City & Urban Fringe, Christaller's Central Place Theory	12	1		13
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. Nearest neighbour analysis		10	20	30
		TOTAL	**40**	**15**	**20**	**75**

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

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:

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.
11. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 4TH SEMESTER

TITLE OF THE COURSE	**:**	**POLITICAL GEOGRAPHY**
COURSE CODE	**:**	**GGRC6**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Description:
This course delves into the dynamic interplay between geography and politics, exploring the origins of nations, states, and geopolitical theories. Through an interdisciplinary lens, students examine the spatial dimensions of political phenomena such as boundaries, voting patterns, and resource disputes.

Prerequisites:
Completion of previous coursework in geography or related fields.

Course Objectives:

- To conceptualize the learner in the field of political geography, including the origin of nations, states, and gerrymandering.
- To understand international boundaries, frontiers, and their geopolitical significance.
- To analyse geopolitical theories such as those proposed by Mahan, Mackinder, and Spykman and their relevance in contemporary global affairs.
- To explore electoral geography and factors influencing voting behaviour.
- To examine resource disputes, particularly water-sharing conflicts in South Asia.
- To engage in practical exercises to apply theoretical concepts, including mapping territorial reorganization and analysing shape indices.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO 1: Understand the foundational concepts and scope of Political Geography.

ILO 1.1: Define the key concepts and scope of Political Geography.

ILO 1.2: Describe various approaches to studying Political Geography.

ILO 1.3: Analyse the nature and significance of Political Geography in contemporary geopolitical contexts.

CO 2: Analyse geopolitical theories and their historical evolution**.**

ILO 2.1: Explain the concept and evolution of Geopolitics.

ILO 2.2: Summarize the geostrategic theories of Mahan, Mackinder, and Spykman.

ILO 2.3: Compare the applications and implications of these theories in moderngeopolitical scenarios.

CO 3: Examine the elements and geographical attributes of states and nation-states**.**

ILO 3.1: Identify the key elements of a state and its geographical attributes (size, shape, location).

ILO 3.2: Analyse factors contributing to nation-building and the formation of nation-states.

ILO 3.3: Assess the implications of these attributes on the political stability and identity of states.

CO 4: Evaluate the concepts of frontiers, boundaries, and their functions in the context of Political Geography.

ILO 4.1: Define the concepts of frontiers and boundaries.
ILO 4.2: Classify different types of boundaries and their functions.
ILO 4.3: Evaluate how boundaries influence political relationships and conflicts.

CO 5: Apply practical knowledge through map analysis and shape index calculations related to political reorganization and territorial disputes.
ILO 5.1: Create and interpret maps showing the reorganization of North East India.
ILO 5.2: Use the Chorley and Haggett method to calculate and analyse shape indices.
ILO 5.3: Map and interpret the territories of major Autonomous Councils in Assam and their political significance.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1	CO1 CO4				
Conceptual	CO2	CO2	CO3			
Procedural		CO1, CO2, CO3	CO3, CO4. CO5.	CO4, CO5, CO5	CO2	CO5
Metacognitive					CO2	CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	M	M	M	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	S	S	M	M	S	M	M	M
CO4	S	S	M	M	S	S	M	M
CO5	M	M	M	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**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 d. Frontier: Concept and types; Boundary: Concept, functions, types, classification. e. **Politico-administrative organization in ancient India**	12	2	-	14
2 (15 Marks)	Geopolitical Theories	a. Geopolitics: Concept and its evolution. b. 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. Gerrymandering d. 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: Practicals***

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 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
8. **Kaushik S.D. & Rawat D.S : GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 4TH SEMESTER

TITLE OF THE COURSE	**: STATISTICAL METHODS IN GEOGRAPHY**
COURSE CODE	**: GGRC7**
NATURE OF THE COURSE	**:MAJOR**
TOTAL CREDITS	**:4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**:60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Description:
This course introduces students to the fundamental principles of statistical methods as applied in geography. It covers the significance and limitations of statistical methods in geography, various data collection techniques, measures of central tendency and dispersion, correlation and regression analysis, and practical applications of statistical techniques in geographical data analysis.

Prerequisites: None

Course Objectives:

- Understand the importance of data in Geography.
- Learn methods and techniques of data collection, tabulation, interpretation, and analysis.
- Apply basic statistical measures to geographical data.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Recall and comprehend the significance of statistical methods in Geography.
ILO 1.1: Describe the importance of statistical methods in geographic research.
ILO 1.2: Explain the limitations of statistical techniques in geographical analysis.
ILO 1.3: Identify different types and sources of geographical data.

CO2: Demonstrate understanding of various statistical measures and their applications in geographical data analysis.
ILO 2.1: Summarize the methods and techniques of data collection in Geography.
ILO 2.2: Explain the concept of scale of measurement and its implications in data analysis.
ILO 2.3: Interpret measures of central tendency and dispersion in the context of geographical data.

CO3: Apply statistical methods to analyse geographical data and draw meaningful conclusions.
ILO 3.1: Apply sampling techniques to collect representative geographical data.
ILO 3.2: Utilize correlation and regression analysis to explore relationships between geographical variables.
ILO 3.3: Apply graphical representation techniques to present geographical data effectively.
CO4: Analyse geographical data using statistical tools to identify patterns and trends.
ILO 4.1: Analyse frequency distributions and histograms to understand data distribution.
ILO 4.2: Evaluate the relationship between variables using correlation coefficients.
ILO 4.3: Interpret residual maps to assess the goodness of fit in regression analysis.

CO5: Integrate statistical methods with geographic principles to solve real-world problems.
ILO 5.1: Design effective sampling strategies for specific geographic research objectives.
ILO 5.2: Synthesize findings from correlation and regression analyses to make informed geographic decisions.
ILO 5.3: Develop variability maps to visualize spatial patterns in geographical data.

CO6: Evaluate the appropriateness and effectiveness of statistical methods in addressing geographic research questions.
ILO 6.1: Critique the strengths and weaknesses of different data collection techniques in Geography.
ILO 6.2: Evaluate the reliability of correlation and regression analyses in different geographic contexts.
ILO 6.3: Assess the utility of statistical measures in supporting evidence-based decision-making in Geography.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1					
Conceptual		CO1, CO2	CO5	CO3		CO6
Procedural			CO2, CO3	CO4	CO5	
Metacognitive					CO6	

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	M	M	M	M	M	M	M
CO2	S	M	M	S	S	S	M	S
CO3	S	S	S	S	S	S	S	S
CO4	S	S	M	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S
CO6	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	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 and coefficient of variation- their application in geographical data analysis. c. Introduction to skewness and kurtosis	13	3	-	16
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. Preparation of scatter diagram and fitting the line of linear regression of Y on X for a set of bi-variate data; residual map. d. Variability map using co-efficient of variation.		2	28	30
		TOTAL	**36**	**11**	**28**	**75**

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

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:

1. Mahmood A.,1999, Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi.
2. Berry B.J.L. and Marble D.F. (eds): Spatial Analysis-A Reader in Geography.
3. Hammond P. and McCullagh P.S., 1978: Quantitative Techniques in Geography: An Introduction, Oxford University Press.
4. Sarkar, A., (2013) Quantitative Geography. Techniques and Presentations. Orient Black Swan Private Ltd., New Delhi.
5. Elhance, D.N., 1972: Fundamentals of Statistics, Kitab Mahal, Allahabad.
6. King L, S., 1969: Statistical Analysis in Geography, Prentice Hall.
7. Yeates M.,1974: An Introduction to Quantitative Analysis in Human Geography, McGraw Hills, New York.
8. Gregory, S., 1963: Statistical Methods and Geographers, Longman, London.

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 4TH SEMESTER

TITLE OF THE COURSE	**: BIOGEOGRAPHY AND OCEANOGRAPHY**
COURSE CODE	**: GGRC 8**
NATURE OF THE COURSE	**: MAJOR**
TOTAL CREDITS	**: 4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**: 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Description:
This course delves into the interdisciplinary study of Biogeography and Oceanography, exploring the distribution patterns of plants and animals in relation to environmental factors, and the dynamic nature of oceanic systems. Through theoretical learning and practical applications, students gain insights into the intricate connections between ecosystems, climate, soil, oceanography, and human activities.

Prerequisites: None

Course Objectives:

- To introduce and enhance the learner's understanding of Biogeography and Oceanography and their fundamental concepts.
- To acquaint undergraduate students with the principles, theories, and applications of Biogeography and Oceanography.
- To equip students with the knowledge and skills to understand the interactions between life distribution and human activities.
- To enable students to comprehend the ocean's dynamics and coastal environments.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: State the principles and significance of Biogeography and Oceanography.
ILO 1.1: Identify different biogeographic regions and explain their characteristics.
ILO 1.2: Describe the significance of oceanography in understanding Earth's processes.
ILO 1.3: Explain the relationship between climate, soil, and the distribution of plants and animals.
CO2: Analyse the distribution patterns of plants, animals, and soil types.
ILO 2.1: Analyse world distribution patterns of plants and animals in relation to climate and human activities.
ILO 2.2: Classify and explain the distribution of major soil types, particularly in India and Assam.
ILO 2.3: Interpret the significance of soil erosion and conservation measures.
CO3: Evaluate the ocean floor configurations and oceanographic phenomena.
ILO 3.1: Describe the configuration of the ocean floor and its significance.
ILO 3.2: Analyse the salinity, temperature, and currents of different ocean basins.
ILO 3.3: Evaluate theories explaining the origin of coral reefs and atolls.

CO4: Apply mapping techniques in Biogeography and Oceanography.
ILO 4.1: Map phytogeographic and zoogeographic regions of the world.
ILO 4.2: Create maps depicting protected areas in Assam/North East India/India.

ILO 4.3: Construct hypsometric and bathymetric curves for specific regions.

CO5: Synthesize knowledge of interactions between life distribution and human activities.
ILO 5.1: Analyse the impact of human activities on the distribution of plants and animals.
ILO 5.2: Evaluate the role of conservation efforts in preserving biodiversity.
ILO 5.3: Assess the implications of human-induced changes on coastal and marine environments.

CO6: Demonstrate practical skills in Biogeography and Oceanography.
ILO 6.1: Conduct fieldwork to observe and document biogeographic and oceanographic features.
ILO 6.2: Apply practical techniques in soil analysis and mapping of marine resources.
ILO 6.3: Utilize GIS tools and software for spatial analysis and mapping exercises.

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual		CO1, CO2, CO3				
Conceptual	CO1	CO1, CO5	CO2, CO3	CO2		
Procedural			CO4, CO5, CO6		CO3, CO5	CO6
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	M	M	S	M
CO2	S	S	S	M	M	M	S	M
CO3	S	M	S	M	M	M	M	M
CO4	M	S	M	M	M	S	S	S
CO5	S	S	M	M	M	M	S	M
CO6	S	S	S	M	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**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 e. Major soil types of India and Assam.	20	2		22

2 (25 Marks)	Oceanography	a. Oceanography: Meaning and significance. **Concept of oceans in the Puranas** b. Configuration of ocean floor- continental shelf, continental slope, deep sea plain; Bottom configurations of the Atlantic, Pacific and Indian oceans. c. Salinity and temperature of ocean water. d. Ocean currents of the Atlantic, Pacific and Indian oceans. e. Marine deposits: Theories of origin of Coral reefs and Atolls- subsidence, non-subsidence and glacial control theories. f. 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. c. Drawing of Hypsometric and Bathymetric curve.		2	28	30
		TOTAL	**40**	**7**	**28**	**75**

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

MODES OF IN-SEMESTER ASSESSMENT:

- **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:

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: fluvial processes in geomorphology, Freeman, Sanfransisco.
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.
18. **Sandahl, Stella:The seven oceans in the *Purāṇas* and elsewhere,** ***Acta Orientalia 2012: 73, 151–172.***

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 4TH SEMESTER

TITLE OF THE COURSE :GEOGRAPHY OF RESOURCES AND ECONOMIC DEVELOPMENT
COURSE CODE : MINGGR4
NATURE OF THE COURSE :MINOR
TOTAL CREDITS :4 CREDITS (3+1)
DISTRIBUTION OF MARKS :60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

Course Description:

This course delves into the geographical aspects of resources and their role in economic development. It explores the classification, distribution, and utilization patterns of natural resources worldwide, emphasizing sustainable development practices.

Prerequisites: None

Course Objectives:

- Develop an understanding of resources, their utilization patterns, classification, and distribution on Earth.
- Examine the relationship between resource availability and economic development.
- Explore the significance of resource management for sustainable development.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Define the Concept of Resources and Their Relationship with Economic Development
ILO 1.1: Explain the concept of resources in geographical and economic contexts.
ILO 1.2: Analyse the relationship between resource base and economic development.
ILO 1.3: Categorize and describe various types of resources and their characteristics**.**

CO2: Evaluate the Distribution and Utilization of Natural Resources in the World
ILO 2.1: Identify the global distribution of key natural resources like soil, water, forests, and minerals.
ILO 2.2: Assess how these resources contribute to economic development in different regions.
ILO 2.3: Discuss the concept of development and the rational use of natural resources, including Environmental Impact Assessment (EIA).

CO3: Analyse Patterns of Economic Development and Resource Use
ILO 3.1: Compare the development patterns of developed and developing countries.
ILO 3.2: Evaluate the world energy crisis, its causes, and potential mitigation and management strategies**.**
ILO 3.3: Explore the role of technology in the efficient utilization and management of resources.

CO4: Apply Practical Skills in Assessing Resource and Economic Development
ILO 4.1: Use simple/mean ranking methods to determine levels of development in regions such as India/North-East India/Assam.
ILO 4.2: Create maps showing spatial variations in forest cover categories using appropriate cartographic techniques.
ILO 4.3: Develop thematic maps for regions like Assam/North-East India to illustrate aspects such as wildlife sanctuaries, national parks, and resource distribution.
CO5: Understand and Apply Theories and Models Related to Resource Functionality
ILO 5.1: Explain the functional theory of resources in the context of economic geography.

ILO 5.2: Analyse case studies or scenarios where the functional theory of resources is applied.
ILO 5.3: Evaluate the implications of the functional theory on resource management practices.
CO6: Develop Strategies for the Conservation and Rational Use of Resources
ILO 6.1: Appraise different methods for conserving natural resources.
ILO 6.2: Discuss the principles of rational resource use and how they can be implemented effectively.
ILO 6.3: Propose strategies for the sustainable management of resources, considering economic and environmental factors**.**

Cognitive Map Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Remember**	**Understand**	**Apply**	**Analysis**	**Evaluate**	**Create**
Factual	CO1, CO2	CO1, CO2, CO3				
Conceptual	CO1	CO2, CO5	CO3, CO4	CO3, CO5	CO5, CO6	CO6
Procedural			CO4	CO4		CO4
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	M	M	M	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	S	S	S	M	S	S	M	M
CO4	S	S	S	M	S	S	S	S
CO5	S	S	S	M	S	S	M	M
CO6	S	S	S	M	M	M	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 Marks)	Geography of Resources and	a: Concept of resource; Relationship between resource- base and Economic	12	2	-	14

	Economic Development	development b: Classification and characteristics of resources. c. Functional theory of resource.				
2 (15 Marks)	Natural Resources and Development	a: Distribution of land(soil), water, forests and minerals in the World and their contribution to economic development. b: Concept of Development; Rational use of resources and EIA. C: Appraisal and Conservation of Natural Resources	14	2	-	16
3 (15 Marks)	Pattern of Economic Development and Resource use	a: Patterns of development: Developed and developing countries b. World energy crisis, mitigation and management c. Use of technology in resource utilization and management d. **Industry and trading in ancient India**	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: Practicals***

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 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.
20. **Kaushik S.D. & Rawat D.S: GEOGRAPHICAL THOUGHT & METHODOLOGY, RASTOGI PUBLICATIONS**

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	**:**	**GGRC9**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem.) 40 (In-Sem.)**

Course Description:

This course offers a comprehensive exploration of the world's diverse regions, emphasizing the physical and economic characteristics that define each area. The course will help students with a deep understanding of the interconnectedness of global regions, the diversity of human and physical landscapes, uneven distribution of resources, regional issues and challenges faced in different parts of the world. Through comparative analysis, case studies, and thematic discussions, students will gain a global perspective and critical thinking skills necessary to analyse regional differences and similarities**.**

Prerequisites:

- Subject matter of Geography.
- Understanding of the physical and human geography interactions in diverse region.

Course Objectives:

- To develop understanding of the learner about climate, soil and topography in different continents of the world.
- To study the industrialization and population distribution in developed, developing and underdeveloped nations of the world.
- To develop critical thinking and analytical skills through the study of regional case studies and thematic issues.
- To foster an appreciation for global diversity and the complexity of regional issues.

Course Outcomes (Cos) and Intended Learning Outcomes (ILOs): Students will be able to

CO1: Explain the fundamental concepts and methodologies of regional geography.
ILO1.1: Define key concepts in regional geography, including space, area and Region.
ILO1.2: Explain the methodologies used in regional geography, such as regionalization.
ILO1.3: Discover different methodologies to analyse different regions of the world.

CO2: Describe the physical features and climatic variations of different regions.
ILO2.1: Describe the physical features of different regions.
ILO2.2: Identify the characteristics of flora and faunas of regions, distribution and climatic impact.
ILO2.3: Analyse the relationship between physical feature and climatic variations in various regions.

CO3: Contrast the resource base and economic contexts that shape regional identities.
ILO3.1: Discuss the distribution of resources that have influenced the development of regions.
ILO3.2: Analyse the factors of uneven resource distribution in different parts of world.
ILO3.3: Evaluate the resources and industries, predominant in various regions.

CO4: Infer the interactions and interdependencies between different regions.
ILO4.1: Explain the concept of globalization and its impact on regional interdependencies.
ILO4.2: Examine case studies of regional conflicts and cooperation to understand political and economic interactions.
ILO4.3: Assess the role of international organizations and agreements.

CO5: Develop critical thinking and analytical skills.
ILO5.1: Conduct comparative analyses of different regions.
ILO5.2: Critically evaluate regional issues such as climate change and urbanization.
ILO5.3: Propose solutions to regional problems based on geographic analysis and evidence.

CO6: Critically evaluate global regional diversity and the complexity of regional issues.
ILO6.1: Reflect on the diversity of regions around the world.
ILO6.2: Discuss the ethical implications of regional disparities and global inequalities.
ILO6.3: Demonstrate an understanding of the interconnectedness of global regions and issues.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Domains	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2	CO2		CO3 CO4	CO3	
Conceptual	CO1, CO2	CO1				
Procedural			CO3		CO5 CO6	CO6
Metacognitive				CO4		

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	**S**	**S**	**M**	**S**	**S**	**M**	**M**	**M**
CO2	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**
CO3	**M**	**S**	**S**	**S**	**M**	**M**	**M**	**M**
CO4	**M**	**S**	**S**	**S**	**S**	**S**	**M**	**M**
CO5	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**M**
CO6	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**M**

Where, S: Strong correlation ***M: Medium correlation***

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 geo-scheme. b. Bases of classifying geographic regions of the world- Formal & Functional.	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
3 (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**		**60**

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

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

Suggested Readings:

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 COURS: CARTOGRAPHIC TECHNIQUES AND MAP PROJECTION
COURSE CODE : GGRC10
NATURE OF THE COURSE : MAJOR
TOTAL CREDITS : 4 CREDITS (3+1=4)
DISTRIBUTION OF MARKS : 60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

Course Description:
This course provides an in-depth understanding of cartographic techniques and map projection methods. It covers the principles of map design, the various types of map projections, and their applications. The course also introduces cartographic methods and techniques, including scales and its types, map projections and their construction methods. Students will gain practical experience in creating and interpreting maps, understanding spatial data, and applying projection techniques to real-world problems**.**

Prerequisites:

- Understanding of the basic concepts of cartography in Geography.

Course Objectives:

- To understand the fundamental concepts of cartography and map projections.
- 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.
- To develop skills in using cartographic methods and techniques for map creation and analysis.
- To analyse different types of map projections and their suitability for various purposes.
- To evaluate the accuracy and effectiveness of different cartographic representations.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Define the basic cartographic principles and map elements.
ILO 1.1: Explain the key components of a map, including scale, legend, and orientation.
ILO 1.2: Describe the principles of map design and layout.
ILO 1.3: Identify different types of scales and their specific uses.

CO2: Utilize cartographic methods and techniques to create accurate and informative maps.
ILO 2.1: Demonstrate proficiency in using traditional cartographic tools.
ILO 2.2: Classify, Conversion and Construction of scales.
ILO 2.3: Incorporate different scales and their uses.

CO3: Select appropriate map projections for different geographical contexts and interpret.
ILO 3.1: Explain the concept of map projection and its importance in cartography.
ILO 3.2: Compare different types of map projections (e.g., Gnomonic, cylindrical, conical) and their characteristics.
ILO 3.3: Incorporate spatial data and thematic elements into map projections.

CO4: Critically evaluate Cartographic methods and techniques and analysis of maps.
ILO 4.1: Analyse basic proficiency in using Map projections for map creation.
ILO 4.2: Analyse locations of areas using Map projections.
ILO 4.3: Select suitable map projections for specific mapping needs and justify the choice

CO5: Assess the accuracy, limitations of various cartographic techniques and projections.
ILO 5.1: Evaluate the accuracy of different map projections and their impact.
ILO 5.2: Critically analyse the effectiveness of Map Projections, scale and its types.
ILO 5.3: Propose improvements or alternative methods for cartographic representations.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual				CO4	CO4	
Conceptual	CO1	CO1				
Procedural			CO2		CO5	
Metacognitive		CO3				

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	**S**	**S**	**M**	**S**	**S**	**M**	**M**	**M**
CO2	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**
CO3	**M**	**S**	**M**	**S**	**S**	**S**	**S**	**M**
CO4	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**M**
CO5	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
CO6	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**S**

Where, S: Strong correlation ***M: Medium correlation***

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, content, 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. c. Conversion of 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	a. Construction of comparative scale (kilometres 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**

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

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:

1. Campbell, J.,1984: Introductory Cartography, Prentice Hall Inc.
2. Mishra, R.P. and Ramesh, A. 1995: Fundamentals of Cartography, Concept Publishing Company.
3. Monkhouse F.J. and Wilkinson, H.R. 1971: Maps and Diagrams: Their Compilation and Construction; B.I. Publications Private Ltd. New Delhi.
4. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York.
5. Sarkar A. 1997, Practical Geography: A Systematic Approach, Orient Longman. Ltd. Hyderabad.
6. 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 : GGRC11
NATURE OF COURSE : MAJOR
TOTAL CREDITS : 4 CREDITS (3+1=4)
DISTRIBUTION OF MARKS :60 (End-Sem) (45T+15P) + 40 (In-Sem)

Course Description:
Economic Geography is the study of the location, distribution, and spatial organization of economic activities across the world. This course explores the dynamics of economic activities, including production, consumption, and trade, as well as the role of natural resources, industries, and technologies. It examines how economic processes are influenced by geographic factors and how spatial patterns of economic activity impact regional development and global economies**.**

Prerequisites:

- Understanding of the man-environmental interactions in diverse region.

Course Objectives

- To understand the fundamental concepts and theories of economic geography.
- To acquire knowledge about primary, secondary and tertiary activities and its spatial-temporal pattern.
- To acquire knowledge about spatial-temporal pattern of distribution of major mineral resources.
- To acquaint with nature manufacturing industries and location model.
- To analyse the spatial distribution of economic activities and their underlying factors.
- To examine the role of natural resources, technology, and infrastructure in economic development.
- To explore the impact of globalization on economic activities and regional development.
- To develop skills in spatial analysis for economic applications.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain the Fundamental Concepts and Theories of economic geography.
ILO1.1: Define key terms and concepts in economic geography.
ILO1.2: Explain the spatial distribution of economic activities.
ILO1.3: Illustrate the historical development of economic geography as a discipline.

CO2: Explain spatial distribution of economic activities with citing examples.
ILO2.1: Identify the factors influencing the location of various industries.
ILO2.2: Analyse locational theories and spatial patterns of agriculture and manufacturing.
ILO2.3: Utilize case studies to demonstrate the spatial distribution of specific economic activities.

CO3: Examine the relationship among Natural Resources, Technology, and Infrastructure.
ILO3.1: Describe the role of natural resources in regional economic development.
ILO3.2: Evaluate the impact of technological advancements on economic activities.
ILO3.3: Assess the significance of infrastructure in the spatial organization of economies.

CO4: Explore the major ocean routes and trade activities.
ILO4.1: Explain the processes and drivers of economic globalization.
ILO4.2: Discuss the development of transport and communication.
ILO4.3: Analyse the role of multinational corporations, Special Economic Zones in the global economy.

CO5: Develop Spatial Analysis and Skills.
ILO5.1: Apply spatial analysis techniques to economic data.
ILO5.2: Use practical methods and techniques to visualize and analyse the spatial distribution of economic activities such as traffic flow, resource distribution and production map etc.
ILO5.3: Interpret maps and spatial data related to economic geography.

CO6: Critical evaluation of Regional Economic Development
ILO6.1: Critically assess different policies of regional economic development.
ILO6.2: Discuss the challenges and opportunities in regional economic planning.
ILO6.3: Propose policy recommendations based on geographic and economic analysis.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimensions	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1				
Procedural		CO2	CO3		CO5, CO6	CO5
Metacognitive			CO4			CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**
CO2	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**

CO3	**M**	**S**	**M**	**S**	**S**	**S**	**S**	**M**
CO4	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**M**
CO5	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
CO6	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**S**

Where, S: Strong correlation M: Medium correlation

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 and quinary.	10	2		12
3 (12 Marks)	Mineral resources and 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. Major industrial regions of the world. d. Special Economic Zones;	13	2		15
4 (11 Marks)	Transport and International trade	a. Transport as a factor of resource utilization. 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

Where, L: Lectures T: Tutorials P: Practicals

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
- **Practical10 Marks**

Suggested Readings:

1. Combes P., Mayer T and Thisse F J (2008): Economic Geography: The Intergation of Regions Nations, Princeton University Press.
2. Guha, J L and Chattoraj, P R (20002): A New Approach to Economic Geography: A Study of Resources.
3. Leong G C and Morgan G C (1982): Human and Economic Geography, Oxford University Press, New York.
4. Roy, P (2005) Economic Geography: A Study of Resources, New Central Book Agency (P) Ltd, 8/1 Chintamoni Das Lane, Kolkata.
5. Wheeler J O (1998) Economic Geography, Wiley International.
6. 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 : MINGGR5
NATURE OF COURSE : MINOR
TOTAL CREDITS : 4 CREDITS(3+1=4)
DISTRIBUTION OF MARKS :60 (End-Sem.) (45T+15P) + 40 (In-Sem.)

Course Description:
Population and Settlement Geography is a sub-discipline of human geography that examines the spatial distribution of populations and settlements across the world. This course provides an in-depth analysis of the demographic patterns, population dynamics, and the factors influencing settlement locations and structures. It explores the interrelationships between population growth, migration, urbanization, and environmental impacts, as well as the socio-economic dimensions, contemporary issues of population and settlement patterns. The course combines theoretical frameworks with practical to understand how and why populations and settlements develop and change over time**.**

Prerequisites:

- Understanding of the physical and human geography interactions in diverse region

Course Objectives:

- To introduce the fundamental concepts and theories related to population and settlement geography, its importance in present days
- To analyze patterns and trends in population size, composition, growth, distribution, and migration and also the contemporary issues related with population
- To develop understanding of the students about the formation, development, and organization of different types of settlements, from rural to urban.
- To assess the environmental, social, and economic impacts of population and settlement changes.
- To enhance students' abilities to develop ideas for geographic research.
- To understand the importance of population and settlement changes for planning and policy-making.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain the key concepts and theories in population and settlement geography.
ILO 1.1: Define and describe key concepts in population and settlement geography.
ILO 1.2: Explain major theories related to population growth, migration, and urbanization.
ILO 1.3: Analyse spatial patterns of population.

CO2: Identify and explain patterns and trends in population distribution and migration.

ILO 2.1: Collect and interpret demographic data to identify population trends.
ILO 2.2: Explain factors influencing population distribution and migration.
ILO 2.3: Apply theoretical frameworks to analyse population and settlement issues.

CO3: Contrast the growth and development of urban and rural settlement.
ILO3.1: Describe different types of settlements and their characteristics.
ILO3.2: Analyse the factors contributing to the growth of urban and rural settlements.
ILO3.3: Compare and contrast settlement patterns in different regions and cultures.

CO4: Evaluate the impacts of population changes on the environment and society.
ILO4.1: Evaluate the environmental impacts of population growth and settlement expansion.
ILO4.2: Assess the social and economic consequences of urbanization and migration.
ILO4.3: Propose sustainable solutions to mitigate negative impacts of population and settlement changes.

CO5: Analyse population and settlement policies and their implications.
ILO 5.1: Analyse population and settlement policies at local, national, and global levels.
ILO 5.2: Critique the effectiveness and implications of these policies.
ILO 5.3: Recommend policy improvements based on geographic research and analysis.

CO6: Conduct practical works related to population and settlements and interpret to understand real-world situation.
ILO 6.1: Create graphs of population growth.
ILO 6.2: Infer Population growth and distribution in developed and developing countries.
ILO 6.3: Interpret population data and provide probable solution to your findings.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimensions	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual		CO2		CO2	CO4	
Conceptual	CO1	CO1		CO3		
Procedural			CO3		CO5	
Metacognitive		CO6				CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**
CO2	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**
CO3	**S**	**S**	**M**	**S**	**M**	**S**	**M**	**M**
CO4	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**M**
CO5	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
CO6	**M**	**S**	**S**	**S**	**S**	**S**	**S**	**S**

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	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) e. Composition of population (Age-Sex and Economic composition)	13	2		15
2. (15 marks)	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. e. Hierarchy of settlements	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**

Where, L: Lectures T: Tutorials P: Practicals

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:

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	:	**GEOGRAPHIC THOUGHT**
COURSE CODE	**:**	**GGRC12**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS**
DISTRIBUTION OF MARKS	**:**	**60 (End Sem) + 40 (In-Sem)**

Course Description:
This course explores the historical development and philosophical underpinnings of geographical thought. It examines the evolution of geographic ideas, theories, and methodologies from ancient to modern times, emphasizing the contributions of key schools of thought. The course also considers the contemporary debates and future directions in the field of geography**.**

Prerequisites:

- Basic knowledge of the Geographical concepts and theories.
- Introduction to interdisciplinary nature of geography and its development.

Coures Objectives:

- To enhance the learner's understanding of the development of geographic ideas from ancient times to the present.
- To study the evolution to geographical thought through the course of time.
- To understand the interdisciplinary nature of geography and its connections to other fields of study.
- To examine the contributions of significant geographers and geographic schools of thought.
- To develop skills in critically analysing different geographical theories and methodologies.
- To explore contemporary debates and emerging trends in geographical thought.
- To explore the recent trends and technique of the geographic thought and future direction.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Demonstrate the historical development of geographic thought.
ILO 1.1: Identify and describe major periods in the history of geographic thought.
ILO 1.2: Outline the key developments and shifts in geographic paradigms over time.
ILO 1.3: Contrast the contributions of different schools of thought.

CO2: Explain the key philosophical and theoretical foundations of geography.
ILO 2.1: Explain the basic philosophical bases of geographical inquiry.
ILO 2.2: Discuss the main theoretical frameworks that have shaped geography as a discipline.
ILO 2.3: Illustrate how different concepts and theories have influenced geographical studies.

CO3: Discuss the contributions of geographers of different schools of thought.
ILO 3.1: Identify key figures in the history of geographical thought and their contributions.
ILO 3.2: Describe the major geographic schools of thought and their core principles.
ILO 3.3: Analyse the impact of significant works and ideas on the development of the discipline.

CO4: Critically explain contemporary debates and trends in geographical thought.
ILO 4.1: Identify current trends and emerging debates in geographical thought.
ILO 4.2: Discuss the implications of contemporary issues for the future of geography.
ILO 4.3: Formulate informed opinions on contemporary geographic debates.

CO5: Illustrate the interdisciplinary connections of geographical thought with other fields.
ILO 5.1:Identify connections between geography and other academic disciplines**.**
ILO 5.2: Discuss the importance of modern approaches in Geography.
ILO 5.3: Illustrate interdisciplinary approaches to addressing complex geographic problems.

CO6: Evaluate the impact of Post modernism approaches in Geography.
ILO 6.1: Analyse the dynamics of Geographic concepts in present day context.
ILO 6.2: Identify Recent trends to investigate geographic problems.
ILO 6.3: Design and evaluate the future of Geography and its importance.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1 CO3			CO4	
Procedural			CO3 CO5	CO2 CO5	CO6	
Metacognitive						

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	M	M	S	S	M
CO5	M	S	S	S	S	S	S	M
CO6	S	S	M	S	S	S	S	M

Where, S: Strong correlation ***M: Medium correlation***

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. Behaviouralist	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**

Where, L: Lectures T: Tutorials P: Practicals

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

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	**:**	**GGRC13**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem.) (45T+15P) + 40(In-Sem)**

Course Description:
This course provides an introduction to the fundamental surveying techniques used in geography. Students will learn the principles and practices of various surveying methods, including fieldwork, data collection, and data analysis. Emphasis is placed on understanding how these techniques are applied in geographic studies and the importance of accuracy and precision in spatial data collection**.**

Prerequisites:

- Introduction to surveying techniques in Geography.
- Understanding of the importance of surveying in geography.

Course Objectives:

- To introduce the basic concepts and principles of surveying
- To study the various types of field survey methods, tools and techniques; principles of different types of ground surveying for the preparation of maps/plans for different geographical context.
- To develop skills in conducting field surveys and data collection.
- To train students in processing and analysing survey data.
- To understand the concept of using survey tools to enhance knowledge and skills.
- To understand the application of surveying techniques in mapping.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: State the principles and importance of surveying in geography
ILO 1.1: Explain the fundamental concepts and principles of surveying
ILO 1.2: Describe the significance of surveying in geography.
ILO 1.3: Discuss the role of accuracy and precision in surveying.

CO2: Proficiently use various surveying instruments and tools
ILO 2.1: Identify and describe the function of different surveying instruments.
ILO 2.2: Demonstrate the correct use of surveying instruments in the field.
ILO 2.3: Perform calibration and maintenance of surveying equipment.

CO3: Conduct accurate field surveys and collect spatial data
ILO 3.1: Plan and design a field survey, including site selection and layout.
ILO 3.2: Execute field surveys using appropriate techniques and methodologies.
ILO 3.3: Record and manage spatial data accurately during fieldwork.

CO4: Interpret survey data for geographic applications
ILO 4.1: Process raw survey data using relevant software tools such as GPS.
ILO 4.2: Create maps and other visual representations from survey data.
ILO 4.3: Evaluate the accuracy and reliability of survey data and results.

CO5: Apply surveying techniques to real-world geographic problems and mapping projects
ILO 5.1: Integrate surveying data with modern mapping tools for analysis.
ILO 5.2: Solve geographic problems using survey data and techniques.
ILO 5.3: Develop and present a comprehensive mapping project based on survey data.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual				CO4		
Conceptual	CO1	CO1				
Procedural			CO3 CO5		CO5	CO4
Metacognitive	CO2	CO4				CO3

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	M	M	S	S	M
CO5	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

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	12	3	-	15

		surveying, vertical and horizontal control, principle of triangulation.				
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. Levelling. e. GPS: Basic concept, principles and uses.	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. e. Survey and prepare a map by using hand held GPS.		2	28	30
		TOTAL	**36**	**11**	**28**	**75**

Where, L: Lectures T: Tutorials P: Practicals

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:

1. Kanetkar, T.P. and Kulkarni, S.U.: Surveying and Leveling Part-l and ll, Vidyarthi GrithaPrakashan, Pune.
2. Mishra, R.P. and Ramesh,A. 1995: Fundamentals of Cartography, Concept Publishing Company.
3. Campbell, J.,1984: Introductory Cartography, Prentice Hall Inc.
4. Robinson, A.H., et al: Elements of Cartography, John Wiley Sons, New York.
5. 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	**: GGRC14**
NATURE OF THE COURSE	**: MAJOR**
TOTAL CREDITS	**: 4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**: 60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
Geography of India is a comprehensive course designed to provide students with an in-depth understanding of the physical, social, economic geography of India. The course covers various aspects including the country's physiographic divisions, climate, vegetation, soils, natural resources, population dynamics, urbanization, and regional development. Students will be able to analyse geographical patterns and processes that shape India's environment and society, and understand the implications of these patterns for sustainable development.

Prerequisites:

- Introduction to basic geographical knowledge of India.

Course Objectives:

- To provide a detailed understanding of the physical geography of India.
- To explore the demographic and socio-economic aspects such as population distribution, growth, migration, and urbanization in India.
- To analyse the regional disparities in terms of economic development, resource distribution, and infrastructure.
- To study the distribution, utilization, and conservation of natural resources such as minerals, forests, and water.
- To foster critical thinking about environmental issues and sustainable development and management in India**.**

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Outline the physiographic divisions, climate, soils, and natural vegetation of India**.**
ILO1.1: Describe the major physiographic divisions of India and their characteristics**.**
ILO1.2: Interpret climatic data and understand the factors affecting the climate of India**.**

ILO1.3: Apply knowledge of physical geography to analyse regional climatic conditions and their impact on agriculture**.**

CO2: Explain the population dynamics, including distribution, density, growth, and migration patterns**.**
ILO2.1: Describe the theories and patterns of population distribution and growth in India**.**
ILO2.2: Analyse census data to identify trends in population dynamics**.**
ILO2.3: Apply demographic analysis to predict future population trends and their implications for urban planning and resource management**.**

CO3: Identify the socio-economic aspects such as agriculture, industry, and urbanization in India**.**
ILO3.1: Gain insights into the agricultural practices, industrial development, and urbanization processes in India**.**
ILO3.2: Evaluate economic data to understand regional variations in socio-economic development**.**
ILO3.3: Propose strategies for balanced socio-economic development and poverty alleviation**.**

CO4: Evaluate the regional disparities and development policies in different parts of India**.**
ILO4.1: Comprehend the factors leading to regional disparities in India**.**
ILO4.2: Analyse regional development policies and their effectiveness**.**
ILO4.3: Formulate recommendations for reducing regional inequalities and promoting balanced regional development**.**

CO5: Critically analyse the distribution and management of natural resources in India.
ILO5.1: Show the distribution and utilization of natural resources in India.
ILO5.2: Evaluate the impact of resource management policies on sustainable development**.**
ILO5.3: Develop plans for the sustainable management of natural resources, considering ecological and economic factors**.**

CO6: Plan a field-based work to understand the real-life situation.
ILO6.1: Identify the major problems of the study.
ILO6.2: Advocate for sustainable development practices and contribute to environmental conservation initiatives**.**
ILO6.3: Interpret the findings.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2	CO1	CO5	CO4	CO5	
Conceptual		CO1 CO2				
Procedural			CO3	CO3	CO4	
Metacognitive		CO6				CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	S	S	S	S	M
CO5	M	S	S	S	S	S	S	S
CO6	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	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, Silver 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, petrochemicals 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 (15 Marks)	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		43	45
		TOTAL	**42**	**5**	**43**	**90**

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
- **Practical10 Marks**

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	**: GGRC15**
NATURE OF THE COURSE	**: MAJOR**
TOTAL CREDITS	**:4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**: 60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
This course explores the physical, cultural, and socio-economic geography of North East India, with a special focus on Assam. It examines the region's diverse landscapes, climate, natural resources, demographic patterns, and cultural heritage. The course aims to provide students with a comprehensive understanding of the geographical factors that shape the region's unique identity and influence its development.

Prerequisites: None

Course Objectives:

- The give an insight into the regional geography of northeast India.
- The students will learn about the physical, economic and anthropogenic details of northeast India with a particular focus on Assam.
- To make the students familiar with the factors responsible for such diversities.
- To introduce students to the physical geography of North East India, including its topography, climate, and natural resources.
- To analyse the economic activities and development issues specific to North East India and Assam.
- To foster an understanding of the environmental challenges and conservation efforts in the region.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain the Physical and socio-cultural background of North East India.
ILO1.1: Describe the major physical features of North East India.
ILO1.2: Explain the climatic variations within North East India and their impact on the region.

ILO1.3: Identify natural resources in North East India and discuss their geographical distribution and significance.

CO2: Identify and describe the demographic patterns and cultural diversity of North East India, focusing on Assam**.**
ILO2.1: Analyse the population distribution and demographic trends in North East India.
ILO2.2: Explore the cultural and ethnic diversity of Assam and its impact on regional identity.
ILO2.3: Discuss the historical and contemporary migration patterns affecting North East India.

CO3: Analyse the economic activities and development challenges in North East India and Assam**.**
ILO3.1: Assess the major economic sectors in North East India.
ILO3.2: Evaluate the infrastructural development and its role in the economic growth.
ILO3.3: Discuss the challenges and opportunities for sustainable development in the region.

CO4: Evaluate environmental issues and conservation strategies in the region.
ILO4.1: Identify major environmental challenges facing North East India, such as deforestation, soil erosion, and biodiversity loss.
ILO4.2: Assess the impact of human activities on the environment in Assam.
ILO4.3: Critically analyse conservation policies and initiatives aimed at preserving the natural environment of North East India.

CO5: Apply geographical knowledge to real-world scenarios and policy-making in the context of North East India and Assam.
ILO5.1: Use geographical data and tools to analyse regional issues in North East India.
ILO5.2: Evaluate policy recommendations based on geographical analysis for sustainable development in Assam.
ILO5.3: Hands on the application of geographical cartographic techniques on geographical entities in North east India.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1				
Procedural			CO3		CO5	CO5
Metacognitive						CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**

CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	M	M	S	S	M
CO5	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

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**

Where, L: Lectures T: Tutorials P: Practicals

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 Reading:

1. Mandal R.B. (ed), 1990: patterns of regional geography-an international perspective.
2. Tiwari R.C. (2007): geography of India. Prayag pustakbhawan, 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.SC IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 6TH SEMESTER

TITLE OF THE COURSE : **ENVIRONMENTAL GEOGRAPHY AND SUSTAINABLE DEVELOPMENT**
COURSE CODE : **MINGGR6**
NATURE OF THE COURSE : **MINOR**
TOTAL CREDITS : **4 CREDITS (3+1)**
DISTRIBUTION OF MARKS :**60 (End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:

Environmental Geography and Sustainable Development is an interdisciplinary course that explores the interactions between human societies and their environments. It focuses on understanding spatial patterns and processes related to natural and human-induced environmental changes and addresses strategies for achieving sustainable development. The course covers topics such as ecosystem dynamics, environmental degradation, climate change, resource management, environmental policy, and sustainable practices.

Prerequisites:

- Basic concept of sustainable development and its importance.

Course Objectives:

- To provide a foundational understanding of environmental geography and sustainable development concepts, including ecosystem services, biodiversity, and ecological footprints.
- To analyse Human-Environment Interactions.
- To evaluate Environmental Policies at local, national, and international level and their effectiveness in promoting sustainable development.
- To identify Sustainable Practices.
- To enhance students' critical thinking skills through the analysis of case studies, current environmental issues, and sustainable development challenges.

- To assess the interdisciplinary approach to solving environmental problems by integrating perspectives from geography, ecology, economics, and social sciences.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain Environmental Geography Concepts: Demonstrate an understanding of key concepts and theories in environmental geography and sustainable development.
ILO1.1: Describe the basic principles and concepts of environmental geography, including ecosystems, biodiversity, and biogeochemical cycles.
ILO1.2: Explain the concept of sustainable development and its importance in environmental management.
ILO1.3: Discuss various environmental challenges and their implications for human societies and natural systems.

CO2: Analyse Environmental Changes
ILO2.1: Identify and describe the major drivers of environmental change, including climate change, land-use change, and pollution.
ILO2.2: Analyse the spatial and temporal patterns of environmental changes using maps, remote sensing data, and geographic information systems (GIS).
ILO2.3: Evaluate the impacts of environmental changes on ecosystems, human health, and socio-economic systems.

CO3: Evaluate Environmental Policies
ILO3.1: Review and assess key international, national, and local environmental policies and agreements.
ILO3.2: Analyse case studies to understand the successes and failures of different environmental policies and management strategies.
ILO3.3: Propose recommendations for improving the effectiveness of environmental policies and regulations.

CO4: Propose Sustainable Solutions
ILO4.1: Identify sustainable practices and technologies that can address specific environmental problems.
ILO4.2: Develop action plans for implementing sustainable development practices at various scales (local, regional, global).
ILO4.3: Evaluate the potential social, economic, and environmental benefits and trade-offs of proposed sustainable solutions.

CO5: Conduct practical
ILO5.1: Formulate research questions and hypotheses related to environmental geography and sustainable development.
ILO5.2: Select and apply appropriate research methodologies, including qualitative and quantitative techniques.

ILO5.3: Collect, analyse, and interpret data to draw evidence-based conclusions and present findings in written and oral formats.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1				
Procedural			CO3, CO5		CO4	CO5
Metacognitive						CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	M	M	S	S	S
CO5	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	**NAME**	**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)	Environmental problems and Programmes	a) Major Environmental Problems – Pollution, Deforestation, Desertification, Global Warming and Bio- Depletion. b) Environmental Programmes and Policies- Global, National and Local level.	14	1		15
3 (15 Marks)	Sustainable Development	a) Sustainable Development: Concept and Components. b) Significance of Sustainable Regional Development c) Sustainable Development Policies and Programmes – The proposal for SDGs at Rio +20; Principles of Good Governance; National Environmental Policy, CDM.	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	35	45
		TOTAL	**50**	**5**	**35**	**90**

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

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**

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.

SEMESTER VII

BA/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 7TH SEMESTER

TITLE OF THE COURSE :FUNDAMENTALS OF FLUVIAL GEOMORPHOLOGY
COURSE CODE :GGRC16A
NATURE OF THE COURSE : MAJOR
TOTAL CREDITS :4 CREDITS (3+1)
DISTRIBUTION OF MARKS :60(End-Sem.) (45T+15P) +40 (In-Sem.)

Course Description:
Fluvial geomorphology is the study of the interactions between the physical shapes of rivers, their water and sediment transport processes, and the landforms they create. It studies the ways that rivers move and change over time, focusing especially on how the flow of water interacts with the movement of sediment. It also considers how the movement of water, sediment and debris interacts with the fixed, immobile features of the landscape, from bedrock canyons to human-built infrastructure.

Prerequisites:

- Introduction to the branches of Geography.

Course Objectives:

- To understand the basic concept of fluvial geomorphology.
- The student will learn about the different process acting in a channel and about channel dynamics.
- To study about the various modern techniques applied in fluvio-geomorphological study.
- To develop skills on drainage line delineation, Basin area and Stream discharge graph and hydrographs.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Describe the fundamental concepts of fluvial geomorphology.
ILO1.1: Explain key terms and concepts related to fluvial processes and landforms.
ILO1.2: Identify the modern methods and techniques in fluvial geomorphological studies.

CO2: Analyse Drainage basin as a fluvial system
ILO2.1: Assess the geomorphic impact of river dynamics.
ILO2.2: Discuss Runoff estimation in a basin and factors controlling it.

CO3: Evaluate Channel pattern & processes.
ILO3.1: Identify and analyse different channel patterns.
ILO3.2: Discuss the development and mechanisms of different channel processes.
ILO3.3: Justify with example about grade, attainment of grade, channel equilibrium.

CO4: Identify and use various instruments and tools in fluvial geomorphology.
ILO4.1: Design an experiment to study river channel dynamics using GIS.
ILO4.2: Analyse the techniques for preparing hydrographs.
ILO4.3: Interpret data of fluvial geomorphic processes and channel dynamics.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2		CO2	CO4		
Conceptual	CO1	CO1				
Procedural			CO3, CO4		CO3	CO4
Metacognitive						CO4

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	S
CO4	S	S	S	M	M	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction to Fluvial Geomorphology.	a) Meaning and evolution of fluvial geomorphology; relation between fluvial geomorphology and hydrology. b) Modern methods and techniques in fluvial geomorphological studies. c) Sedimentological techniques.	10	5		15
2 (15 Marks)	Drainage basin as a fluvial system.	a) Inputs and outputs in the basin, drainage basin as a fundamental geomorphic unit. b) Runoff estimation in the basin, factors controlling runoff and types of runoff. c) Forces acting in channel, velocity distribution, flow types	10	5		15
3 (15 Marks)	Channel pattern & processes	a) Straight, meandering, and braided; development and causes of meandering; mechanics and causes of braiding. b) Concept of grade, attainment of grade, channel equilibrium.	10	5		15
4 (15 Marks)	Practical	a) Basin area and drainage line delineation using GIS b) Basin area and Stream discharge graph. c) Stage-discharge hydrographs and Unit hydrograph.			30	30
		TOTAL	**30**	**15**	**30**	**75**

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

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
- **Practical10 Marks**

Suggested Readings:

1. Bhagabati, A.K., Bora, A.K. and Kar, B.K. (ed), 2001: Geography of Assam, Rajesh Publications, New Delhi.
2. Chorley, Wolman and Millerm, 1969: Fluvial Processes in Geomorphology, W.H. Freeman AndCompany, San Francisco.
3. Chorley, R.J. (ed), 1969: Water, Earth and Man, Methuen, London.
4. Chouhan, T.S., 1995: Remote Sensing: Principles and Interpretation, H.W. Freeman and Company, San Francisco.
5. Chow, V.T., 1964: Handbook of Applied Hydrology, McGraw Hill Book company, New York.
6. Folk, R.L., 1980: Petrology of Sedimentary Rocks, Hemphill Publishing Co. Austin, Tx. Garde, R.J. and Ranga Raju, K.G.: Mechanism of Sediment Transportation.

7. Gregory, K.J. and Walling, D.E., 1973: Drainage basin Form and Processes, Arnold, London.
8. Kanidhton, D., 1984: Fluvial Forms and Processes, Edward Arnold, London.
9. Leopold, Wolman and Miller, 1964: Fluvial Processes in Geomorphology, W. H. Freeman and Company, San Francisco.
10. Morisawa, M., 1968: Streams: Their Dynamics and Morphology, McGraw Hill Book Company, New York.
11. Mutreja, K.N., 1986: Applied Hydrology, McGraw Hill Book Company, New York.
12. Pettijohn, F. J., 1975: Sedimentary Rocks, Harper and Raw Publishers, New York.
13. Petts, G.E., and Foster, I., 1985: Rivers and Landscape, Edward Arnold, London.
13. Rao, K.L., 1975: India's Water Wealth, Orient Longman, New Delhi.
14. Sabnis, Floyd. F., 1978: Remote Sensing: Principles and Interpretation, H.W. Freeman and Company, San Francisco.
15. Schumm, S.A., 1977: The Fluvial System, Wiley Interscience, New York
16. Schumm, S.A. (ed), 1977: Drainage Basin Morphology.
17. Smith, D.I. and Stopp, P., 1978: The River Basin: An Introduction to the Study of Hydrology, Cambridge.

BA/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 7TH SEMESTER

TITLE OF THE COURSE :FUNDAMENTALS OF REGIONAL PLANNING
COURSE CODE :GGRC16B
NATURE OF THE COURSE : MAJOR
TOTAL CREDITS :4 CREDITS (3+1)
DISTRIBUTION OF MARKS :60(End-Sem.) (45T+15P) +40 (In-Sem.)

Course Description:
The course broadly covers the concept of region and regionalization, various methods ofregionalization. It also covers different methods and techniques required to smoothly assess and implement the exercises of regional planning and development.

Prerequisites:

- Introduction to the concept of region.

Course objectives:

- To improve the conceptual parameter of the learners in the field of region, methods of regionalization, regional planning and development.
- To understand the importance of problem region identification.
- To highlights the importance of regional development in the removal of regional disparities in terms of development.
- To apply and interpret different methods and techs in regional planning.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain the Regional Concept in Geography

ILO1.1: Describe the principles of regional planning and its significance.

ILO1.2: Identify methods of socio-economic regionalization and spatial analysis.

CO2: Evaluate theDevelopment of Regional Planning

ILO2.1: Identify different types of planning.

ILO2.2: Compare historical and recent development in planning

ILO2.3: Evaluate the interactions between Geography and Regional Planning

CO3: Identify and analyse Regions for Planning.

ILO3.1 Explain the concept and significance of Town and Country planning.

ILO3.2: Evaluate the Planning regions of India.

CO4: Apply and interpret the methods of Regional Planning.

ILO4.1: Application of GIS in urban mapping: population density, population growth

ILO4.2: Assess regional inequalities using various measurement techniques.

ILO4.3: Design comprehensive regional plans addressing underdeveloped areas.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2		CO3	CO4		
Conceptual	CO1	CO1			CO2	
Procedural			CO4		CO3	
Metacognitive						CO4

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Regional Concept in Geography	a) Concept, evolution and types of region. b) Regionalisation: Methods of formal and functional regionalization. c) Hierarchy of region.	10	5		15
2 (15 Marks)	Concept of Regional Planning	a) Concept and types of planning b) Historical Development of Regional Planning, principle, objectives and need of regional planning c) Geography and Regional Planning.	10	5		15
3 (15 Marks)	Regions for Planning	a) Planning regions and its characteristics b) Planning regions of India proposed by TCPO c) Town and Country planning - concept and significance with special reference to India.	10	5		15
4 (15 Marks)	Practical	a) Socio-economic regionalization using simple ranking, mean ranking and Z score standardization b) Estimation of flow of population using gravity analysis c) Application of GIS in urban mapping: population density, population growth.			30	30
		TOTAL	**30**	**15**	**30**	**75**

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

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**

Suggested Readings:

1. Bhat, L.S (1973) Regional Planning in India, Statistical Publishing Society, Calcutta.
2. Bhat, L.S. et. al (1976) Micro-Level Planning, A Case Study of Karana l Area, Haryana K.B. Publication, New Delhi.
3. Chorley, H. and Hagget P. (1976) Models in Geography, Metun. London.
4. Misra, R.P. et al (1974) Regional Development in India-A Strategy, Mysore.
5. Mitra. A. (1965) Levels of Regional Development, Census of India, Vol I, pt I &II, New Delhi.
6. Raza, M (1988) Regional development, Heritage Publisher, Delhi.
7. Misra R.P. et al (1980) Multi Level Planning, Heritage.

BA/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 7TH SEMESTER

TITLE OF THE COURSE :FUNDAMENTALS OF DISASTER MANAGEMENT
COURSE CODE :GGRC16C
NATURE OF THE COURSE : MAJOR
TOTAL CREDITS :4 CREDITS (3+1)
DISTRIBUTION OF MARKS :60(End-Sem.) (45T+15P) +40 (In-Sem.)

Course Description:

This course provides an in-depth understanding of the principles and practices of disaster management. It covers the various types of disasters, the role of disaster management agencies, and the essential strategies and tools used in disaster preparedness, response, recovery, and mitigation. This course aims to equip students with the knowledge and skills required to effectively manage and respond to disasters in various settings

Prerequisites:

- Introduction to hazards and disasters.
- Understanding of the importance of disaster management.

Course Objectives:

- To develop a comprehensive understanding of the nature, types, and impacts of disasters.
- To learn the methods and tools for assessing disaster risks and vulnerabilities.
- To understand the principles of disaster preparedness and planning.
- To gain knowledge about the immediate response actions and coordination during disasters.
- To explore the strategies for effective recovery and rehabilitation post-disaster.
- To study the techniques for reducing the impact of future disasters.
- To understand the national and international policies, laws, and frameworks governing disaster management.
- To highlight the importance of community participation in disaster management.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Describe the types, characteristics, and effects of various disasters.
ILO1.1: Identify and classify different types of disasters.
ILO1.2: Explain the characteristics and causes of each type of disaster.
ILO1.3: Analyse the effects of disasters with examples

CO2: Explain and identify vulnerabilities related to man-made disasters.
ILO2.1: Analyse and interpret the Causes and effects man-made disasters such as fire, war.
ILO2.2: Identify and evaluate the vulnerabilities of populations, infrastructure, and systems.
ILO2.3: Develop risk maps and reports based on assessment data.

CO3: Develop and implement disaster preparedness plans.
ILO3.1: Outline the key components of a disaster preparedness plan.
ILO3.2: Create a comprehensive disaster preparedness plan for a specific scenario.
ILO3.3: Implement training and drills to ensure preparedness at the individual, community, and organizational levels.

CO4: Identify effective emergency response strategies.
ILO4.1: Describe the steps and protocols in emergency response operations.
ILO4.2: Coordinate with various agencies and stakeholders during an emergency response.
ILO4.3: Apply first response techniques and manage emergency situations effectively.

CO5: Apply mitigation techniques to reduce the impact of future disasters.
ILO5.1: Identify structural and non-structural mitigation measures.
ILO5.2: Design and implement mitigation projects tailored to specific risks.
ILO5.3: Evaluate the effectiveness of mitigation strategies.

CO6: Conduct field works, design a plan and interpret the findings.
ILO6.1: Identify the problems
ILO6.2: Data collection on disaster**.**
ILO6.3: Prepare a report and interpret the findings.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1, CO2				CO4
Procedural			CO3, CO5, CO6		CO5	CO3
Metacognitive	CO6					CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	M	M	S	S	M
CO5	M	S	S	S	S	S	S	S
CO6	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 Marks)	Introduction to Disaster	a) Basic concepts of Natural Disaster b) Types of Natural Hazards and Disaster c) Causes and effects of disasters with examples.	10	5		15
2 (15 Marks)	Introduction to Man-made Disasters	Man-made Disasters - Causes and effects; Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures (Building and Bridge), War & Terrorism etc.	10	5		15

3 (15 Marks)	Risk and vulnerability	a) Risk: Concept, analysis and its reduction. b) Vulnerability: Concept and analysis c) Strategic Development for Vulnerability Reduction.	10	5		15
4 (15 Marks)	Practical	a) Data collection on flood /Landslide/bank erosion/ man-made disaster. b) Prepare a Case Study report on any one of the mentioned disasters of your locality.			45	45
		TOTAL	**30**	**15**	**45**	**90**

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

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

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

Suggested Readings:

1. Alexander David, 2000. Introduction in 'Confronting Catastrophe', Oxford University Press.
2. Berke PR, et al. Recovery after a disaster: Achieving sustainable development, mitigation, and equity. Disasters 1993; 17 (2): 93-109.
3. Building Resilience: Social Capital in Post-Disaster Recovery. Contemporary Sociology 2015; 44 (1): 30-31.
4. Coppola P Damon, 2007. Introduction to International Disaster Management, Carter, Nick 1991. Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manil
5. Disaster Management Guidelines. GOI-UNDP Disaster Risk Reduction Programme (2009-2012).
6. Guerisse P. 2005 Basic Principles of Disaster Medical Management. Act Anaesth. Belg;56:395-401
7. Ingram JC, et al. post-disaster recovery dilemmas: challenges in balancing short-term and long-term needs for vulnerability reduction. Environmental Science & Policy 2006; 9 (7-8): 607-13.
8. Prewitt Diaz, J.O (2004). The cycle of disasters: from Disaster Mental Health to Psychosocial Care. Disaster Mental Health in India, Eds: Prewitt Diaz, Murthy, Lakshmi Narayanan, Indian Red Cross Society Publication.
9. Phillips BD. Disaster Recovery. 2nd Edition. Taylor & Francis group, 2015.
10. Passerini E. Disasters as agents of social change in recovery and reconstruction. Natural Hazards Review 2000; 1 (2).
11. Sharman and Hansen.2015. Aim and Scope of Disaster Management. Study Guide prepared UW-DMC, University of Washington.

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 7TH SEMESTER

TITLE OF THE COURSE	**:**	**GEOGRAPHY OF TOURISM**
COURSE CODE	**:**	**GGRC17**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**:**	**60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:

The course explores the relationship between geography and tourism. It examines how geographical features, cultural landscapes, and environmental factors influence tourism patterns and destinations. The course provides an understanding of the spatial dynamics of tourism, including the distribution and flow of tourists, the development of tourist regions, and the impacts of tourism on physical and human environments**.**

Prerequisites:

- Subject matter of Geography.
- Understanding of the importance of Tourism.

Course Objectives:

- To provide a general understanding of the field of tourism from geographical perspective.
- Understand the role of geography in facilitating tourism and allied activities.
- Have an insight into the role of tourism in economy, society and environment in global, national and regional level.
- To analyse the spatial patterns of tourism and the factors that influence the development and growth of tourism destinations.
- To examine the cultural and environmental impacts of tourism and how they are managed in different geographical contexts.
- To evaluate different models and strategies of tourism development and planning.
- To develop critical thinking and problem-solving skills related to geographical issues in tourism.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Define and explain key geographical concepts and their relevance to tourism.
ILO1.1: Understand and describe the basic principles of geography.
ILO1.2: Explain the role of geographical location in shaping tourism activities.

CO2: Identify and analyse the spatial distribution and flows of tourists at various scales.
ILO2.1: Map and interpret the global and regional patterns of tourist flows.
ILO2.2: Analyse the factors contributing to the spatial distribution of tourism.

CO3: Evaluate the geographical factors that influence the development of tourism destinations.
ILO3.1: Identify physical, cultural, and economic factors that attract tourists to specific destinations.
ILO3.2: Assess how geographical features and climate influence tourism seasonality and patterns.

CO4: Assess the impacts of tourism on cultural and environmental landscapes.
ILO4.1: Evaluate the positive and negative impacts of tourism on local cultures and communities.
ILO4.2: Analyse the environmental impacts of tourism and approaches to mitigate negative effects.

CO5: Apply geographical methods and tools to study tourism patterns and propose sustainable tourism development strategies.

ILO5.1: Utilize GPS and other geographical tools to analyse tourism data.
ILO5.2: Mapping Tourism areas
ILO5.3: Develop and propose strategies for sustainable tourism development based on geographical analysis.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1, CO2	CO1, CO2				
Procedural			CO5	CO3	CO3	
Metacognitive	CO5					CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	S	S	S	S	M	M
CO2	S	S	M	S	M	M	M	M
CO3	M	S	M	S	M	S	M	M
CO4	M	S	M	S	S	S	S	M
CO5	S	S	S	S	S	S	S	S
CO6	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (11 Marks)	Introduction to Geography of Tourism	a. Meaning, nature and scope. b. Tourism: concept and relationship with geography. c. Geographical parameters of tourism (Robinson)	10	2	-	12
2 (12 Marks)	Types and Forms of Tourism	d. Types: Nature tourism, cultural tourism, adventure tourism, medical tourism, pilgrimage, MICE tourism. e. Forms: Domestic, inbound and outbound.	10	2	-	12
3 (11 Marks)	Resource and Trends of Tourism	c. Infrastructure and services. d. Recent trends of tourism: international and regional (special reference to India and NE	10	2	-	12

		India). e. Tourism infrastructure: case studies of Himalayas, Deserts, Coastal and NE India.				
4 (11 Marks)	Impact and Policies of Tourism	e. Impact of tourism on: Economy, Environment and Society. f. National tourism policy. g. Tourism policy of NE India.	8	1		9
5 (15 marks)	Practical	a. Trends of growth of tourists in India/ Assam using suitable diagram. b. Trend of income earned from tourism in India by using moving average method. c. Preparation of a map of Assam to show important tourist destinations along with their road, railway and air connectivity. d. Preparation of a tourist map of N.E. India showing the inflow of tourists to major national parks and wildlife sanctuaries. e. Prepare a tracking map of an area of tourism interest using GPS. f. Prepare a tourism album of Assam showing important places, monuments and cultures.		2	28	30
		TOTAL	**38**	**9**	**28**	**75**

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

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
- **Practical10 Marks**

Suggested Readings:

1. Dhar, P.N., (2006). International Tourism; Emerging Challenges and Future Prospects. Kanishka, New Delhi.
2. Bhattacharya, P. (2011) Tourism in Assam: Trends and Potentialities, Banimandir, Guwahati.
3. Hall, M. and Stephen, P. (2006) Geography of Tourism and Recreation- Environment, Place and Space, Routledge, London.
4. Karma, K.K. and Chand, M. (2007) Basics of Tourism: Theory, Operation and Practice, Kanishka Publishers, Pune.
5. Page, S.J. (2011) Tourism Management: An Introduction, Butterworth- Heinemann-USA. Chapter 2.

6. Raj, R. and Nigel, D. (2007) Morpeth Religious Tourism and Pilgromage, Festival Management: An International Perspective by, CABI, Cambridge, USA, www.cabi.org.
7. Tourism Recreation and Research Journal Centre for Tourism Research and Development, Lucknow.
8. Simgh, Jagbir (2014), "Eco-Tourism" Published by- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi (www.ikbooks.com).

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 7TH SEMESTER

TITLE OF THE COURSE	**:**	**POPULATION GEOGRAPHY**
COURSE CODE	**:**	**GGRC18**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:

Population Geography is a branch of human geography that studies the spatial distribution, patterns, and processes related to human populations. This course explores demographic concepts, population dynamics, migration patterns, population policies, and the implications of population changes on social, economic, and environmental systems. Through a combination of theoretical frameworks and empirical case studies, students will gain a comprehensive understanding of how populations shape and are shaped by geographical spaces.

Prerequisites:

- Understanding of the physical and human geography interactions in diverse region

Course Objectives:

- Introduce the students to the basic concepts of population geography.
- Highlights on the different characteristics of population and their influence on development process of a region.
- To explore the factors influencing population growth, distribution, and structure at different spatial scales.
- To study the causes and consequences of migration, including internal and international migration.
- To assess the impact of various population policies and programs on demographic trends and patterns with special reference to India and North east India.
- To understand the relationship between population changes and socio-economic development.
- To critically examine contemporary issues related to population such as aging, urbanization, and environmental sustainability.
- To develop skills in analysing and interpreting population data using various statistical and geographical tools.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to

CO1: Define the Demographic Concepts and Theories
ILO1.1: Explain the fundamental concept, nature and scope of population geography.
ILO1.2: Define population factors fertility, mortality, and migration theories.

CO2: Analyse Population Data.
ILO2.1: Identify population data sources.
ILO2.2: Interpret demographic data.

CO3: Evaluate Population Dynamics and Distribution
ILO3.1 Explain the spatial distribution of populations
ILO3.2: Identify the factors affecting population dynamics, including birth rates, death rates, and migration.
ILO3.3 Analyse migration patterns and processes, including the causes of migration and its consequences.

CO4: Population Policy Evaluation and Development
ILO 4.1: Critically evaluate population policies and their impacts on demographic trends, including family planning, immigration policies, and aging population strategies.
ILO 4.2: Understand the relationship between population changes and socio-economic development.

ILO 4.3: Identify and critically analyse contemporary population issues, such as urbanization, aging populations, and environmental challenges, and propose informed solutions.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	Cognitive Process Dimension					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1				
Procedural			CO3		CO5	
Metacognitive						CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	S	S	M	M	M
CO2	S	S	M	S	M	M	M	M
CO3	S	S	M	S	M	M	M	S
CO4	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (10 Marks)	Introduction to Population Geography and Population Data	a. Concept, Nature, Scope and its relation with Demography. b. Population Data: Sources of data with reference to India (Census, Vital Statics, NSS etc.)	7	2		9
2 (12 Marks)	Distribution, Density and Growth of Population	a. Determinants of Population Distribution and Density, Population Density regions of the world. b. Trend of world population growth, determinants of population growth. c. Theories of population growth: Malthusian theory; Demographic Transition Theory with reference to India's demographic transition.	12	2		14
3 (10 Marks)	Population, resource and Contemporary issues	a. Age-Sex Composition, Rural-Urban composition, Literacy. b. Understanding population-resource relationship; Population-Resource Regions of the world. c. Population problems in developed and developing countries-underpopulation, overpopulation and ageing of population.	10	1		11

4 (13 Marks)	Population Dynamics and Policies	a. Population Dynamic (Fertility, Mortality, and Migration): Measures, Determinants and Implications. b. Population Policies: Objectives, Population Policy of China and India.	10	1		11
5 (15 Marks)	Practical	a. Trend of population Growth: India, Assam/N.E. India by line graph b. Distribution of population by using Dot, Multiple Dot and distribution of towns with their population size by using Sphere. c. Choropleth map showing spatial pattern of population density in Assam and India. d. Lorenz Curve, e. Location Quotient		2	28	30
		TOTAL	**39**	**8**	**28**	**75**

Where, L: Lectures T: Tutorials P: Practicals

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**

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Suggested Readings:

1. Ahmed, A., et. al, 1997: Demographic Transition: The Third World Scenario, Rawat Publications, Jaipur and New Delhi
2. Bhende A. And Kanitkar T., 2000: Principles of Population Studies, Himalaya Publication, New Delhi
3. Chandna, R. C.,2014: Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers.
4. Clarke, J.I., 1965: Population Geography, Pergamon Press, Oxford.
5. Husain Majid,2021: Human Geography, 6th ed. Rawat Publications. Jaipur, New Delhi, Bengaluru, Guwahati, Kolkata.
6. Jones, H.R.,2000: Population Geography, 3rd ed. Paul Chapman, London.
7. Sundaram, K. V. and Nangia, S.,(eds): Population Geography, Heritage Publishers, New Delhi. Inc., New York.

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 7TH SEMESTER

TITLE OF THE COURSE	**:**	**POLITICAL GEOGRAPHY**
COURSE CODE	**:**	**MINGGRC7**
NATURE OF THE COURSE	**:**	**MINOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
Political Geography examines the spatial aspects of political processes and structures. It explores how geographical space influences political behaviour and how political processes impact spatial configurations. The course covers key topics such as the state and its boundaries, geopolitics, electoral geography, territorial disputes, nationalism, and globalization.

Prerequisite: Basic concept of the relationship Geography and Polity of a country.

Course Objectives:
- 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.
- Understand the fundamental concepts of political geography.
- Analyse the role of the state, boundaries, and territory in political organization.
- Evaluate the impact of geopolitical theories and practices.
- Assess the significance of nationalism and identity in political geography.
- Examine the influence of globalization on political geography.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to

CO1: Introduction to the fundamental concepts of political geography
ILO1.1: Define and describe basic concepts such as territory, state, sovereignty, and power.
ILO1.2: Illustrate how political geography differs from other subfields of geography.
ILO1.3: Discuss historical and contemporary examples of political geographic issues.

CO 2: Analyse the role of the state, boundaries, and territory in political organization
ILO2.1: Explain the concept of the state and the significance of political boundaries.
ILO2.2: Analyse the processes of boundary creation and the implications of boundary disputes.
ILO2.3: Evaluate the role of territory in the formation and maintenance of states.

CO 3: Evaluate the impact of geopolitical theories and practices
ILO3.1: Summarize key geopolitical theories, such as Heartland Theory, Rimland Theory etc.
ILO3.2: Apply geopolitical theories to analyse contemporary international conflicts and alliances.
ILO3.3: Critique the relevance of classical geopolitical theories in the context of modern global politics.

CO 4: Assess the significance of nationalism and identity in political geography
ILO4.1: Define nationalism and discuss its historical roots and contemporary manifestations.
ILO4.2: Analyse case studies of nationalist movements and their impact on political geography.
ILO4.3: Explore the role of identity politics in shaping national and regional political landscapes.

CO 5: Examine the influence of globalization on political geography
ILO5.1: Describe the processes of globalization and their political implications.
ILO5.2: Discuss the impact of global economic and cultural exchanges on national sovereignty.
ILO5.3: Analyse the challenges and opportunities globalization presents to political structures and processes.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	Cognitive Process Dimension					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1				
Procedural			CO3		CO5	
Metacognitive						CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	M	M	M	M
CO2	S	S	S	S	M	M	M	M
CO3	S	S	M	S	S	S	M	M
CO4	M	S	M	S	M	S	S	M
CO5	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	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 d. Frontier: Concept and types; Boundary: Concept, functions, types, classification.	13	2	-	15
2 (15 Marks)	Geopolitical Theories	a. Geopolitics: Concept and its evolution. b. Geostrategic Theories of Mahan, Mackinder and Spykman.	13	2	-	15
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. Gerrymandering d. Water Sharing Disputes: International (India, Pakistan and Bangladesh)	13	2	-	15
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-		2	28	30

		Independent), Chile and France. b. Map showing the territory of the major Autonomous Councils of Assam.				
		TOTAL	**39**	**8**	**28**	**75**

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

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**

Suggested Readings:

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 7TH SEMESTER

TITLE OF THE COURSE : RESEARCH ETHICS AND METHODOLOGY
COURSE CODE : ……..
NATURE OF THE COURSE : …….

TOTAL CREDITS : 4 CREDITS
DISTRIBUTION OF MARKS : 60 (End Sem) + 40 (In-Sem)

Course Description:

This course aims to provide students with a comprehensive understanding of the ethical principles and methodological approaches essential to conducting high-quality research. The course covers the fundamental concepts of research design, data collection, data analysis, and ethical considerations in research. Through theoretical lessons and practical exercises, students will learn to navigate the complexities of ethical dilemmas and develop robust research methodologies.

Prerequisites: Importance of Research.

Coures Objectives:

- General understanding of the concept of research and identification of overall process of designing a research work.
- To have a deeper understanding of complete designing of research from statement of research problem to final thesis writing.
- Critical assessment of research methods pertinent to technology innovation research in the field of earth science.
- To introduce the basics of philosophy of science and ethics.
- To inculcate research integrity.
- To introduce various plagiarism tools.
- Develop skills to design and conduct research studies.
- Learn various methodologies for data collection and analysis.
- Enhance critical thinking and problem-solving skills in research contexts.
- Understand the ethical implications of research practices and how to address them.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students should be able to:

CO1: Demonstrate knowledge of research processes
ILO1.1: Define principles in research.
ILO1.2: Identify common issues and challenges in research.
ILO1.3: Explain the importance of informed consent and confidentiality in research.

CO2: Learn various methodologies for data collection and analysis
ILO 2.1: Differentiate between qualitative and quantitative research methods.
ILO2.2: Apply various data collection techniques such as surveys, interviews etc.
ILO 2.3: Utilize statistical tools and software for data analysis

CO3: Develop skills to design and conduct research studies
ILO3.1: Formulate research questions and hypotheses.
ILO3.2: Design a research study including the selection of appropriate methodologies.
ILO3.3: Develop a research proposal outlining the objectives, methods, and possible outcomes.

CO4: Enhance critical thinking and problem-solving skills in research contexts
ILO 4.1: Critically analyse and interpret research findings.
ILO 4.2: Identify potential biases and limitations in research studies.
ILO 4.3: Develop strategies to address and mitigate research challenges.

CO5: Interpret the ethical implications of research practices and how to address them
ILO 5.1: Discuss case studies of ethical dilemmas in research and propose solutions.
ILO 5.2: Implement ethical guidelines and protocols in research practice.
ILO 5.3: Assess the ethical considerations related to publishing and disseminating research findings.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1, CO2				
Procedural			CO3		CO5	
Metacognitive		CO5				CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	**S**	**S**	**M**	**S**	**M**	**M**	**M**	**M**
CO2	**S**	**S**	**S**	**S**	**M**	**S**	**M**	**M**
CO3	**M**	**S**	**S**	**S**	**S**	**M**	**M**	**M**
CO4	**S**	**S**	**S**	**S**	**S**	**S**	**M**	**S**
CO5	**S**	**S**	**S**	**S**	**S**	**M**	**S**	**S**

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 Marks)	Introduction to Research	a. Meaning, objectives and types of research. b. Research problem c. Literature Review; Citation, Reference and Bibliography. d. Sources and type of data. e. Method of preparing a Research Proposal.	10	5		15
2 **(15** Marks)	Data Collection and Analysis	a. Methods of collecting primary and secondary data. b. Census and Sample Survey. Meaning and types of Sample Design. c. Measures of Central Tendency, and Measures of Dispersion (ANOVA, Range,	10	5		15

		Mean and Standard Deviation); Correlation and regression analysis				
3 (15 Marks)	Hypothesis Testing	a. Concept and characteristics of Hypothesis b. Methods of Hypothesis Testing with examples- t- test, f- test and chi square test.	10	5		15
4 (15 Marks)	Ethics and Scientific Conduct	a. Introduction to Philosophy: definition, nature and scope, concept and branches b. Ethics: Definition, moral philosophy, nature of moral judgments and reactions. c. Scientific Conduct: 1. Ethics with respect to science and research 2. Intellectual honesty and research integrity 3. Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP) • Redundant publications: duplicate and overlapping publications, salami slicing • Selective reporting and misrepresentation of data	10	5		15
		TOTAL	**40**	**20**		**60**

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

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

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

Suggested Readings:

1. Gosal, G.S. (1999) Survey of Research in Geography, Manak Publication, New Delhi.
2. Kothari, C.R. (199) Research methodology. Wishaw Publisher, New Delhi
3. Kumar, Ranjit (2011) Research Methodology: A step by step guide, Sage Publication
4. Misra. H.N. & Singh, V.P. (1988) Research Methodology in Geography, Rawat Publication
5. Murthy. K.N.L. (1999) Geographical Research, Concept Publisher
6. Pal, S.K. (1995): Computing Mathematical Techniques in Geography, B.R. Publisher
7. Bird, A. (2006). *Philosophy of Science.* Routledge.
8. MacIntyre, Alasdair (1967) *A Short History of Ethics.* London.

SEMESTER VIII

BA/B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF THE COURSE : **ADVANCED FLUVIAL GEOMORPHOLOGY**

COURSE CODE : **GGRC19A**
NATURE OF THE COURSE : **MAJOR**
TOTAL CREDITS : **4 CREDITS (3+1)**
DISTRIBUTION OF MARKS :**60 (End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
Fluvial geomorphology is the study of the interactions between the physical shapes of rivers, their water and sediment transport processes, and the landforms they create. It studies the ways that rivers move and change over time, focusing especially on how the flow of water interacts with the movement of sediment. It also considers how the movement of water, sediment and debris interacts with the fixed, immobile features of the landscape, from bedrock canyons to human-built infrastructure.

Prerequisites: Introduction to fundamental concepts of fluvial geomorphology.

Course Objectives:

- To know about the anthropogenic impact on river basin and also about the various fluvio-geomorphic hazards.
- To make the students acquire knowledge about the fluvial geomorphology of the Brahmaputra valley and about its flood geomorphology.
- To understand the fluvio-geomorphic hazards.
- To understand and evaluate the channel migration and flood patterns.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Explain the fundamental concepts and principles offluvial geomorphology.
ILO1.1: Justify different geomorphic agents.
ILO1.2: Analyse of historical phenomena of flood and climate.

CO2: Analyse the Human impact on fluvial geomorphology of a region.
ILO2.1: Critically evaluateeffects of basin changes and dam construction.
ILO2.2: Explain the impact of human activities on rivers.
ILO2.3: Identify the factors of uneven distribution of water body in India and its consequences.

CO3: Identify and analyseFluvio-geomorphic hazards.
ILO3.1: Critically evaluate the Flood hazard, bank erosion, and consequences.
ILO3.2: identify and explain geomorphic hazards of North-East India.

CO4: Create and justify different methods influvial geomorphology.
ILO4.1: Evaluate and analyse Bank line migration using GIS.
ILO4.2: Classify statistical methods and apply them.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual			CO2	CO2		
Conceptual	CO1	CO1, CO2			CO3	
Procedural				CO3	CO4	
Metacognitive						CO4

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	M	M	M	M
CO2	S	S	S	S	S	M	M	M
CO3	M	S	S	S	S	S	S	M
CO4	S	M	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	S
CO6	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
I (15 Marks)	Flood Geomorphology	a) Flood as a geomorphic agent, flood frequency analysis, formation of floodplains. b) Analysis of paleo-flood & its relationship with paleo-climate	10	5		15
II (15 Marks)	Human impact on river basins and fluvial systems	a) Effects of basin changes and dam construction on catchment ecosystem. b) Human impact on the river. c) Water balance study in India.	10	5		15
III (15 Marks)	Fluvio-geomorphic hazards	a) Flood and bank erosion, Bank line migration of the river Brahmaputra. b) Landslides and soil erosion with special reference to North-East India.	10	5		15
IV (15 Marks)	Practical	a) Bank line migration of the river Brahmaputra using GIS b) Plotting position method c) Log Pearson Type III distribution and d) Gumble's Extreme value distribution Method			30	30
		TOTAL	**30**	**15**	**30**	**75**

Where, L: Lectures T: Tutorials P: Practicals

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

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

Suggested Readings:

1. Bhagabati, A.K., Bora, A.K. and Kar, B.K. (ed), 2001: Geography of Assam, Rajesh Publications, New Delhi.
2. Chorley, Wolman and Millerm, 1969: Fluvial Processes in Geomorphology, W.H. Freeman and Company, San Francisco.
3. Chorley, R.J. (ed), 1969: Water, Earth and Man, Methuen, London.
4. Chouhan, T.S., 1995: Remote Sensing: Principles and Interpretation, H.W. Freeman and Company, San Francisco.
5. Chow, V.T., 1964: Handbook of Applied Hydrology, McGraw Hill Book company, New York.
6. Folk, R.L., 1980: Petrology of Sedimentary Rocks, Hemphill Publishing Co. Austin, Tx. Garde, R.J. and Ranga Raju, K.G.: Mechanism of Sediment Transportation.
7. Gregory, K.J. and Walling, D.E., 1973: Drainage basin Form and Processes, Arnold, London.
Kanidhton, D., 1984: Fluvial Forms and Processes, Edward Arnold, London.
8. Leopold, Wolman and Miller, 1964: Fluvial Processes in Geomorphology, W H. Freeman and Company, San Francisco.
9. Morisawa, M., 1968: Streams: Their Dynamics and Morphology, McGraw Hill Book Company, New York.
10. Mutreja, K.N., 1986: Applied Hydrology, McGraw Hill Book Company, New York.
11. Pettijohn, F. J., 1975: Sedimentary Rocks, Harper and Raw Publishers, New York.
12. Petts, G.E., and Foster, I., 1985: Rivers and Landscape, Edward Arnold, London.
13. Rao, K.L., 1975: India's Water Wealth, Orient Longman, New Delhi.
14. Sabnis, Floyd. F., 1978: Remote Sensing: Principles and Interpretation, H.W. Freeman and Company, San Francisco.
15. Schumm, S.A., 1977: The Fluvial System, Wiley Inter science, New York
16. Schumm, S.A. (ed), 1977: Drainage Basin Morphology.
17. Smith, D.I. and Stopp, P., 1978: The River Basin: An Introduction to the Study of Hydrology, Cambridge.

BA/B. Sc IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF THE COURSE	: **ADVANCED REGIONAL PLANNING**
COURSE CODE	: **GGRC19B**
NATURE OF THE COURSE	**: MAJOR**
TOTAL CREDITS	: **4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	: **60 (End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
The course focuses on the regional divisions of India based on physical, social and economic criteria. The course also deals with problems and prospects of specific areas: Special purpose and problem regions. It broadly covers the spatial and temporal pattern of planning processes and its role of development at local, regional and national level.

Prerequisite: Basic concepts of Regional Planning.

Course Objectives:

- To enhance the learner in the field of different planning process for the development of problem region and special purpose region.
- To conceptualize with the hierarchical order of different planning activity and its role of regional development.
- Enhance students to develop strategies for regional development.
- To understand the importance of application of modern methods and techniques in regional planning.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Analyse the principles, methods and techniques of regional planning.
ILO1.1: Describe key principles, methods and techniques of regional planning.
ILO1.2: Explain various regional planning theories.
ILO1.3: Compare and contrast different regional planning approaches.

CO2: Evaluate different dimensions of planning.
ILO2.1: Identify various problems regions.
ILO2.2: Assess the strengths and weaknesses of sectoral, spatial and temporal planning.
ILO2.3: Illustrate real-world applications of planning dimensions for regional development.

CO3: Critically assess the impact of regional policies on local communities.
ILO3.1: Investigate the socio-economic impacts of regional policies.
ILO3.2: Evaluate case studies of regional policy impacts.
ILO3.3: Propose improvements to existing regional policies based on analysis.

CO4: Design sustainable regional development plans.
ILO4.1: Develop criteria for sustainable regional development.
ILO4.2: Create a comprehensive regional development plan.
ILO4.3: Integrate environmental, economic, and social factors in planning.

CO5: Apply spatial analysis techniques to regional planning problems.
ILO5.1: Use Geographic Information Systems (GIS) for spatial analysis.
ILO5.2: Interpret spatial data on findings.
ILO5.3: Solve regional planning problems using spatial analysis tools.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2	CO2		CO4		
Conceptual	CO1	CO1				
Procedural			CO5		CO3	CO4
Metacognitive		CO5				CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	S	S	M	M	M
CO2	S	S	M	S	M	M	M	M
CO3	M	S	M	S	S	S	S	M
CO4	M	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	**NAME**	**CONTENTS**	**L**	**T**	**P**	**Total Hours**
1 (15 Marks)	Methods and techniques of Regional Planning	a) Methodology of Regional Planning. b) Analytical Techniques of Regional Planning. c) Procedural Techniques of Regional Planning.	10	5		15
2 (15 Marks)	Problem Regions	a) Identification of Problem regions-basic approaches. b) Problem regions-hilly region, tribal region and regions of drought and floods; c) Strategy for Development of Problem regions.	10	5		15
3 (15 Marks)	Planning Processes	a) Sectoral, temporal and spatial dimensions of planning. b) Urban policy and urban planning in India. c) Indicators of development and their data sources, levels of development and disparities-Indian context	10	5		15

4 (15 Marks)	Practical	a) Lorenz curve, Gini concentration ratio and location quotient b) Forecasting of urban population using arithmetic and geometric progression method. c) Land use land cover using GIS.			30	30
		TOTAL	30	15	30	75

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

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

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

Suggested Readings:

1. Bhat, L.S (1973) Regional Planning in India, Statistical Publishing Society, Calcutta
2. Bhat, L.S. et al (1976) Micro-Level Planning, A Case Study of Karanal Area, Haryana K.B. Publication, New Delhi
3. Chorley, H. and Hagget P. (1976) Models in Geography, Metun. London
4. Misra, R.P. et al (1974) Regional Development in India-A Strategy, Mysore.
5. Mitra. A. (1965) Levels of Regional Development, Census of India, VolI, pt I &II New Delhi.
6. Raza, M (1988). Regional Development, Heritage Publisher, Delhi
7. Misra R.P. et al (1980) Multi Level Planning, Heritage.

BA/B.Sc IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF THE COURSE : **ADVANCED DISASTER MANAGEMENT**
COURSE CODE : **GGRC19C**
NATURE OF THE COURSE : **MAJOR**
TOTAL CREDITS : **4 CREDITS (3+1)**
DISTRIBUTION OF MARKS :**60 (End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
This course delves into the intricate and multifaceted aspects of disaster management. It encompasses advanced strategies, planning, and operational approaches to mitigate, prepare for, respond to, and recover from disasters. The course integrates theoretical frameworks with practical applications, emphasizing risk assessment, resilience building, and the use of technology in disaster management. Participants will engage with case studies, simulations, and current research to develop a comprehensive understanding of contemporary challenges and solutions in disaster management.

Prerequisite: Basic concept of hazards and disasters.

Course Objectives:

- To provide an understanding of the nature, causes, and impacts of various types of disasters.
- To equip students with advanced skills in risk assessment and hazard mapping.
- To develop strategic disaster management plans incorporating mitigation, preparedness, response, and recovery phases.
- To explore the role of emerging technologies in disaster management.
- To analyse international, national, and local policies and legal frameworks governing disaster management.
- To promote community resilience through participatory approaches and capacity building.
- To encourage interdisciplinary collaboration and integration in disaster management practices.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): students will be able to:

CO1: Explain the fundamental concepts of Preparedness for Hazards and Disaster
ILO 1.1: Define Concept, Nature and Plan of disaster Preparedness.
ILO 1.2: Identify Prediction methods such as Early Warnings of Disaster. (FLEWS)
ILO1.3: Analyse the Safety Measures.

CO2: Describe the Role of different organisations in Disaster management.
ILO2.1: Explain the role of Higher Education, Government, International Bodies and NGOs.
ILO2.2: Analyse the Role of ICT in Disaster Preparedness

CO3: Assess the impact of disasters on communities and infrastructure.
ILO3.1: Evaluate the short-term and long-term impacts
ILO3.2: Analyse Search, Rescue, Evacuation and Logistics in disaster management.
ILO3.3: Interpret Psychological Response and Management (Trauma, Stress, Rumour and Panic).

CO4: Develop Management Plans
ILO 4.1: Formulate disaster mitigation and preparedness strategies.
ILO 4.2: Design effective response and recovery plans.
ILO 4.3: Integrate community input and local knowledge into management plans.

CO5: Evaluate Policies
ILO 5.1: Analyse international, national, and local disaster management policies.
ILO 5.2: Design community-based disaster risk reduction (DRR) programs.
ILO 5.3: Measure and evaluate the effectiveness of community resilience initiatives.

CO6: Utilize Technology
ILO 6.1: Apply GIS and remote sensing techniques for disaster management.
ILO 6.2: Utilize early warning systems and communication technologies.
ILO 6.3: Evaluate the effectiveness of technological applications in past disaster scenarios.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1, CO2				
Procedural			CO3 CO6	CO3	CO5	CO4 CO5
Metacognitive						CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	S	M	M	M	M
CO2	S	S	S	S	S	M	M	M
CO3	S	S	S	S	S	S	M	M

CO4	M	S	S	S	S	S	S	S
CO5	M	S	S	S	S	S	S	S
CO6	S	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Disaster Preparedness	Preparedness for Hazards and Disaster a) Disaster Preparedness: Concept, Nature and Plan b) Prediction: Early Warnings and Safety Measures of Disaster. (FLEWS) c) Role of Higher Education, Government, International Bodies and NGO d) Role of ICT in Disaster Preparedness	10	5		15
2 (15 Marks)	Response to Disaster	a) Introduction to disaster response & Plan b) Communication, Participation, and Activation of Emergency Preparedness Plan c) Search, Rescue, Evacuation and Logistics d) Psychological Response and Management (Trauma, Stress, Rumour and Panic) e) Relief and Recovery	10	5		15
3 (15 Marks)	Rehabilitation, Reconstruction and Recovery	a) Damage Assessment, Reconstruction and Rehabilitation as a Means of Development. b) Post Disaster effects and Remedial Measures. c) Long-term Counter Disaster Planning; Community Based Disaster Management.	10	5		15
4 (15 Marks)	Practical	a) Application of Remote Sensing and GIS in Hazard Zoning: Flood, Erosion, Landslide and earthquake.			30	30
		TOTAL	**30**	**15**	**30**	**75**

Where, L-Lecture, T-Tutorial, P-Practical

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

- **Two Internal Examinations 20 Marks**
- **Others (Any one) - 10 Marks**

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

- **Practical** **10 Marks**

Suggested Readings

1. Alexander David, 2000. Introduction in 'Confronting Catastrophe', Oxford University Press.
2. Berke PR, et al. Recovery after a disaster: Achieving sustainable development, mitigation, and equity. Disasters 1993; 17 (2): 93-109.
3. Building Resilience: Social Capital in Post-Disaster Recovery. Contemporary Sociology 2015;44 (1): 30-31.
4. Coppola P Damon, 2007. Introduction to International Disaster Management, Carter, Nick 1991. Disaster Management: A Disaster Manager's Handbook. Asian Development Bank, Manil.
5. Disaster Management Guidelines. GOI-UNDP Disaster Risk Reduction Programme (2009-2012).
6. Guerisse P. 2005 Basic Principles of Disaster Medical Management. Act Anaesth. Belg;56:395-401
7. Ingram JC, et al. Post-disaster recovery dilemmas: challenges in balancing short-term and long-term needs for vulnerability reduction. Environmental Science & Policy 2006; 9 (7-8): 607-13.
8. Prewitt Diaz, J.O (2004). The cycle of disasters: from Disaster Mental Health to Psychosocial
Care. Disaster Mental Health in India, Eds: Prewitt Diaz, Murthy, Lakshmi Narayanan, Indian Red Cross Society Publication.
9. Phillips BD. Disaster Recovery. 2nd Edition. Taylor & Francis group, 2015.

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF THE COURSE	**:**	**SOCIAL AND CULTURAL GEOGRAPHY**
COURSE CODE	**:**	**GGRC 20**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**4 CREDITS (3+1=4)**
DISTRIBUTION OF MARKS	**:**	**60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
This course explores the intricate relationships between society, culture, and space. The course delves into how cultural practices, social structures, and spatial dynamics influence each other. It examines various themes such as identity, ethnicity, gender, class, and power in geographical contexts, highlighting the role of space and place in shaping human experiences and societal developments**.**

Prerequisite: Introduction to Geography of society and culture.

Course Objectives:

- To introduce the students to the nature and concepts related to the two aspects with a geographical outlook.
- To develop the understanding of core concepts and current debates in social and cultural geography.
- To create keen interest among students for pursuing it in higher studies.
- To explore how social and cultural processes shape and are shaped by spatial dynamics.
- To develop critical thinking skills by examining the ways in which geography influences cultural and social phenomena.
- To equip students with the skills to conduct social and cultural geographical research.
- To apply theoretical knowledge to contemporary social and cultural issues.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: Demonstrate a thorough understanding of the key concepts in social and cultural Geography.
ILO1.1: Explain the fundamental theories and concepts in social and cultural geography.
ILO1.2: Identify key thinkers and their contributions to the field.

ILO1.3: Describe the evolution of social and cultural geography as a sub-discipline.

CO2: Analysing Social and Cultural Processes
ILO2.1: Analyse the interaction between social processes and spatial dynamics.
ILO2.2: Discuss the impact of cultural practices on spatial organization and vice versa.
ILO2.3: Evaluate different social structures through a geographical lens and their contemporary issues with special reference to India.

CO3: Critical evaluation of Space and Place
ILO3.1: Critically assess how space and place influence social identities and interactions.
ILO3.2: Debate the significance of place in cultural and social power dynamics.
ILO3.3: Reflect on personal and collective experiences of place and their social implications.

CO4: Application of Geographical Knowledge
ILO4.1: Identify contemporary social and cultural issues that have geographical dimensions
ILO4.2: Propose interventions or solutions informed by geographical theories and research.
ILO4.3: Collaborate with peers to develop projects addressing real-world problems from a geographical perspective

CO5: Conducting practical to represent socio-cultural data.
ILO5.1: Collect socio-economic data from different sources to measure socio-economic status.
ILO5.2: Apply qualitative and quantitative research methods appropriately.
ILO5.3: Analyse data and present findings in a coherent and scholarly manner.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO2, CO4		
Conceptual	CO1	CO1, CO2				
Procedural			CO3 CO4 CO5		CO3, CO5	CO5
Metacognitive						CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	S	M	M	M	M
CO2	S	S	M	S	M	M	M	M
CO3	M	S	M	S	M	M	M	M
CO4	M	S	S	S	S	S	S	M
CO5	S	S	S	S	S	S	S	M

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (23 Marks)	Social Geography	a. Definition, Nature and Scope of Social Geography b. Concepts of social space, social processes, social distance and social inequality. c. Society and environment; Social change: Nature and factors. d. Social well-being- Concept and components: Housing, health and education; Quality of life e. Social Geographies of Inclusion and Exclusion, Gender identity, Slums, Gated Communities, Conflicts and Crime – with special reference to India.	19	4		23
2 (22 Marks)	Cultural Geography	a. Definition of culture; concept, nature and scope of Cultural Geography b. Cultural Regions of the World c. Cultural diffusion: meaning and types d. Concepts of cultural landscape, cultural ecology and folk culture regions. e. Contribution of race, religion, language, tribe and ethnicity in promoting diversity in India	18	4		22
3 (15 Marks)	Practical	a. Sex disparity map (India and North East India) b. Level of Social well-being with the help of composite Z-score in India /North-East India c. Spatial distribution of linguistic groups in India using a suitable technique d. Spatial distribution of major tribes in North East India		2	28	30
		TOTAL	**37**	**10**	**28**	**75**

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

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**

Suggested Readings:

1. Ahmed A., 1999: *Social Geography*, Rawat Publications.
2. Casino V. J. D., Jr., 2009) *Social Geography: A Critical Introduction*, Wiley Blackwell.
3. Cater J. and Jones T., 2000: *Social Geography: An Introduction to Contemporary Issues*, Hodder Arnold.
4. Holt L., 2011: *Geographies of Children, Youth and Families: An International Perspective,* Taylor & Francis.

5. Panelli R., 2004: *Social Geographies: From Difference to Action*, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: *Introducing Social Geographies,* Oxford University Press.
7. Smith D. M., 1977: *Human geography: A Welfare Approach*, Edward Arnold, London.
8. Smith D. M., 1994: *Geography and Social Justice*, Blackwell, Oxford.
9. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: *The SAGE Handbook of Social Geographies*, Sage Publications.
10. Sopher, David (1980): *An Exploration of India*, Cornell University Press, Ithasa.
11. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
12. Sen. J., (2016): *A Textbook of Social and Cultural Geography*, Kalyani Publishers.

BA/BSc. IN GEOGRAPHY PROGRAM (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF COURSE CODE	**: URBAN GEOGRAPHY**
COURSE CODE	**: DSE 1**
NATURE OF THE COURSE	**: DISCIPLINE SPECIFIC ELECTIVE**
TOTAL CREDITS	**: 4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**: 60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
Urban Geography explores the spatial aspects of cities and urban processes. It investigates the patterns and processes that shape urban areas, examining their structure, function, and development. This course covers themes such as urbanization, urban planning, social and economic dynamics, and the challenges and opportunities facing contemporary cities. Through theoretical frameworks and case studies, students gain insights into the complexities of urban environments and the interplay between human activities and urban spaces

Prerequisite: Basic Concept of Urbanisation**.**

Course Objectives:

- To acquaint the students with the foundational concepts nature and scope of Urban Geography.
- Understanding the characteristics, morphology and hierarchy of urban systems.
- To understand the Theories and models in urban studies.
- To analyse the processes of urbanization and the factors influencing urban growth.
- To examine the spatial structure and organization of cities.
- To assess the social, economic, and environmental challenges in urban areas.
- To evaluate urban planning and policy responses to urban issues.
- To develop critical thinking and research skills through urban geography case studies.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:

CO1: State the foundational theories and concepts in urban geography.
ILO 1.1: Explain the evolution of urban geography as a sub-discipline within geography.
ILO 1.2: Describe the key theories and models related to urban form and function.
ILO 1.3: Discuss the significance of urban geography in understanding contemporary urban issues.

CO2: Analyse the processes of urbanization and the factors influencing urban growth.
ILO 2.1: Identify the stages of urbanization and their characteristics.
ILO 2.2: Examine the demographic, economic, and social factors driving urbanization.
ILO 2.3: Analyse the impacts of urbanization on rural and urban areas.

CO3: Examine the spatial structure and organization of cities.
ILO 3.1: Describe different urban spatial structures and land use patterns.
ILO 3.2: Analyse the factors influencing the distribution of urban activities.
ILO 3.3: Compare and contrast the spatial organization of cities in different regions.

CO4: Assess the social, economic, and environmental challenges in urban areas.
ILO 4.1: Identify major social issues such as segregation, inequality, and housing in urban contexts.
ILO 4.2: Evaluate the economic challenges including employment, infrastructure, and urban economy.
ILO 4.3: Assess environmental issues such as pollution, waste management, and sustainable development in cities.

CO5: Evaluate urban planning and policy responses to urban issues.
ILO 5.1: Explain the principles and practices of urban planning.
ILO 5.2: Analyse different policy approaches to managing urban growth and development.
ILO 5.3: Evaluate the effectiveness of various urban policies in addressing urban challenges.

CO6: Develop critical thinking and research skills through urban geography case studies.
ILO 6.1: Conduct case studies on specific urban issues or cities.
ILO 6.2: Utilize geographic methods and tools to analyse urban phenomena.
ILO 6.3: Present research findings in written and oral formats, demonstrating critical analysis and synthesis of urban geography concepts.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO2 CO3 CO4		
Conceptual	CO1	CO1				
Procedural			CO3		CO5	
Metacognitive						CO6

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	S	M	M	M	M
CO2	S	S	M	M	M	M	M	M
CO3	M	S	M	S	S	M	M	M
CO4	S	S	S	S	S	S	S	M
CO5	S	M	S	M	S	S	S	S
CO6	M	M	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Understanding Urban Geography	a. Meaning and scope of Urban Geography. b. Pre conditions for urban growth c. Growth and trend of urbanization in the world d. Theories and models in urban studies: Concentric Zone Theory of E.W. Burgess and Sector Theory of Hurd and Hoyt. e. Urban morphology and Hierarchy, Concept of Metropolis, Megalopolis, Ecumonopolis, Conurbation and Necropolis f. Concept of Primate City and Rank-Size Rule	13	2		15
2 (15 Marks)	Urban Governance and Planning	a. Concept of urban governance, good governance b. Role of institution in governance c. Rural- Urban Fringe: Development and planning d. Concept of Master Plans e. Schemes under urban development: Pradhan Mantri Awas Yojana-Urban (PMAY-U), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Swachh Bharat Mission – Urban (SBM-U)	13	2		15
3 (15 Marks)	Urban Contemporary Issues	a. Urban ecological crisis, concept of sustainable cities. b. Small cities and smart cities c. Urban Environment: Pollution, Heat Island, Urban flooding and urban crimes d. Contemporary issues in urban India: Slums and Squatters	13	2		15
4 (15	Practical	a. Determination of urban Mean Centre		2	28	30

Marks)		b. Mean Centre of gravity c. Determination of urban hierarchy by Rank Size Rule (distribution of Urban Centres) d. Reilley's Breaking point analysis e. Urban Sprawl Mapping f. Urban Slum Mapping				
		TOTAL	**39**	**4**	**28**	**75**

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

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**

Suggested Readings:

1. Mandal, R.B.: Urban Geography, Concept Publishing Co., New Delhi
2. Carter, H. The study of Urban Geography, Arnold Publishers, London
3. Pacione, M. Urban Geography: A Global Perspective Taylor and Francis, UK
4. Fyfe, N.R. and Kenny, J.T.: The Urban Geography Reader, London, UK
5. Gallion, A.B. and Eisner, S.: The Urban Pattern: City Planning and Design: CBS Publishers, New Delhi.

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF THE COURSE	**: GEOGRAPHY OF RURAL DEVELOPMENT**
COURSE CODE	**: DSE 2**
NATURE OF THE COURSE	**:DISCIPLINE SPECIFIC ELECTIVE**
TOTAL CREDITS	**:4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**:60(End-Sem.) (45T+15P) +40 (In-Sem.)**

Course Description:
This course explores the spatial aspects of rural development processes and the multifaceted interactions between rural areas and their socio-economic environments. It examines the theories, policies, and practices of rural development, focusing on the geographical distribution of rural resources, population dynamics, land use, and rural livelihoods. The course aims to provide students with a comprehensive understanding of rural development issues and equip them with analytical tools to address these challenges effectively.

Prerequisite: Introduction to basic concept and needs of rural development.

Course Objectives:

- To introduce the students to the concept of rural development.
- To apprise the students of the approaches to its study.
- To develop an understanding of the rural resource and economic base.
- To examine the various schemes and status of rural development in India.
- Examine the geographical distribution of rural resources and population.
- Study the spatial patterns and processes affecting rural areas.
- Evaluate rural development policies at local, national, and international levels.
- Understand the challenges and opportunities in improving rural livelihoods.
- Explore the concepts and practices of sustainable rural development.
- Assess the environmental impacts of rural development projects and initiatives.
- To equip the students with skills of data collection and analysis.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to

CO1: Describe Rural Development Concepts and Approaches.
ILO1.1: Define key terms related to rural development.
ILO1.2: Summarize major Approaches of rural development.
ILO1.3: Discuss the historical evolution of rural development concepts.

CO2: Analysing Rural Development Policies and Programs
ILO2.1: Identify major rural development policies at national and international levels.
ILO2.2: Compare different rural development programs and their impacts.
ILO2.3: Analyse the role of government and non-government organizations in rural development.

CO3: Evaluating Rural Development Projects
ILO3.1: Assess the goals and objectives of rural development projects.
ILO3.2: Critique the methodology and implementation of specific projects.
ILO3.3: Measure the outcomes and impacts of rural development projects on local communities.

CO4: Applying Geographic Tools and Techniques in Rural Development through field work.
ILO4.1: Examine the rural development needs.
ILO4.2: Conduct field surveys and data collection for rural development research.
ILO4.3: Apply spatial analysis techniques to interpret rural development data.

CO5: Developing Strategies for Sustainable Rural Development
ILO5.1: Design a rural development plan addressing local needs and resources.
ILO5.2: Integrate sustainable practices into rural development strategies.
ILO5.3: Propose innovative solutions for common rural development challenges.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Cognitive						
Factual	CO2			CO2		
Conceptual		CO1				
Procedural			CO4		CO3	
Metacognitive						CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**
CO1	S	S	M	M	M	M	M	M
CO2	S	S	S	M	M	M	S	M
CO3	M	S	S	S	M	S	M	S
CO4	M	S	S	S	S	S	S	S
CO5	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction	a. Rural Development: Definition and Need b. Approaches to Rural Development c. Gandhian Approach to Rural Development.	9	2		11
2 (15 Marks)	Rural Resource and Economic Base	a. Rural Natural Resources and their sustainability: Land, Water, Forest and Soil b. Agriculture and Allied Sectors, Need of Expanding Non-Farm Activities, Co-operatives, PURA c. Rural service centres and market: Concept and their role in rural development. d. Impact of human activities in rural LULC	15	2		17
3 (15 Marks)	Rural Development in India	c. Panchayati Raj System d. Area based Approach: Drought Prone Area Programmes and PMGSY e. Target Group Approach: SJSY, MNREGA and Jan Dhan Yojana f. Integrated Rural Development Approach g. Latest schemes:NRLM – National Rural Livelihood Mission (Deendayal Antyodaya Yojana), Deen Dayal Upadhyaya Grameen Kaushal Yojana (DDU GKY) and Jal Jeevan Mission	15	2		17
4 (15 Marks)	Practical	Prepare a report on a village based on any aspect of rural development	8		37	45
		TOTAL	**47**	**6**	**37**	**90**

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

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

- **Two Internal Examinations -** **20 Marks**
- **Others (Any one)** **-** **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate/Home assignment

- **Practical10 Marks**

Suggested Readings:

1. Gilg A. W., 1985: An Introduction to Rural Geography, Edwin Arnold, London.
2. Krishnamurthy, J. 2000: Rural Development - Problems and Prospects, Rawat Publications., Jaipur.
3. Lee D. A. and Chaudhri D. P. (eds.), 1983: Rural Development and State, Methuen, London. 4. Misra R. P. and Sundaram, K. V. (eds.), 1979: Rural Area Development: Perspectives and Approaches, Sterling, New Delhi.
5. Misra, R. P. (ed.), 1985: Rural Development: Capitalist and Socialist Paths, Vol. 1, Concept, New Delhi.

6. Palione M., 1984: Rural Geography, Harper and Row, London.
7. Ramachandran H. and Guimaraes J.P.C., 1991: Integrated Rural Development in Asia – Leaning from Recent Experience, Concept Publishing, New Delhi.
8. Robb P. (ed.), 1983: Rural South Asia: Linkages, Change and Development, Curzon Press.
9. UNAPDI 1986: Local Level Planning and Rural Development: Alternative Strategies. (United Nations Asian & Pacific Development Institute, Bangkok), Concept Publications. Co., New Delhi.
10. Wanmali S., 1992: Rural Infrastructure Settlement Systems and Development of the Regional Economy in South India, International Food Policy Research Institute, Washington, D.C.
11. Yugandhar, B. N. and Mukherjee, Neela (eds.) 1991: Studies in Village India: Issues in Rural Development, Concept Publications, New Delhi.

B.A./B.Sc. IN GEOGRAPHY PROGRAMME (FYUGP)
DETAILED SYLLABUS OF 8TH SEMESTER

TITLE OF THE COURSE	**:**	**SOIL GEOGRAPHY**
COURSE CODE	**:**	**DSE 3**
NATURE OF THE COURSE	**:**	**DISCIPLINE SPECIFIC ELECTIVE**
TOTAL CREDITS	**:**	**4 CREDITS (3+1)**
DISTRIBUTION OF MARKS	**:**	**60 (End-Sem.) (45T+15P) + 40 (In-Sem.)**

Course Description:
This course provides an in-depth understanding of the distribution, formation, and classification of soils. It examines the physical, chemical, and biological properties of soils and their relationships with environmental factors such as climate, vegetation, and topography. The course also explores the human impact on soils, including soil management practices and the implications for sustainable land use and environmental conservation.

Prerequisite: Basic concept of soil and its importance.

Course Objectives:
- To provide students with a comprehensive understanding of the concepts and principles of soil geography.
- To make students learn about development of soil and soil forming processes.
- To teach students about the processes involved in soil formation and the various classification systems used in soil science.
- To study the physical, chemical, and biological properties of soils and their interactions with environmental factors.
- To explore the impact of human activities on soil properties and the implications for land use and management.
- To emphasize the importance of sustainable soil management and conservation practices.

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will able to:

CO1: Explain the fundamental concepts, nature and scope of soil geography.
ILO1.1: Define key terms and concepts in soil geography.

ILO1.2: Understand the significance of soil geography as a field of study.
ILO1.3: Recognize the relationship between soil geography and other geographical and environmental disciplines.

CO2: Describe the processes of soil formation and the various classification systems used in soil science.
ILO2.1: Identify the main processes of soil formation (weathering, organic matter accumulation, leaching, etc.).
ILO2.2: Explain the factors influencing soil formation (climate, organisms, relief, parent material, and time).
ILO2.3: Analyse the soil profile and soil horizons.

CO3: Analyse the physical, chemical, and biological properties of soils.
ILO3.1: Measure and interpret soil physical properties (texture, structure, porosity, density, colour).
ILO3.2: Assess soil chemical properties (pH, cation exchange capacity, nutrient content).
ILO3.3: Evaluate soil biological properties (microbial activity, organic matter content).
ILO3.4: Analyse the interactions between soil properties and environmental factors such as climate and vegetation.

CO4: Evaluate the impact of human activities on soil properties and land use.
ILO4.1: Identify the main human activities that affect soil properties (agriculture, urbanization, deforestation).
ILO4.2: Assess the effects of these activities on soil health and productivity.
ILO4.3: Understand the implications of soil degradation for land use and environmental sustainability.

CO5: Develop strategies for sustainable soil management and conservation.
ILO5.1: Recognize the principles of sustainable soil management.
ILO5.2: Formulate soil conservation practices.
ILO5.3: Design land use plans that incorporate sustainable soil management principles.

Cognitive Map of Course Outcomes with Bloom's Taxonomy

Knowledge Dimension	**Cognitive Process Dimension**					
	Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Factual	CO2			CO4		
Conceptual	CO1	CO1, CO2				
Procedural			CO3		CO5	CO5
Metacognitive						CO5

Mapping of Course Outcomes to Program Outcomes

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	S	S	M	M
CO2	S	S	S	S	M	M	S	M
CO3	M	S	S	S	S	S	S	M
CO4	S	S	M	M	M	S	S	M
CO5	M	S	S	S	S	S	S	S

Where, S: Strong correlation ***M: Medium correlation***

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Introduction	a. Nature, Scope and Significance of Soil Geography. b. Soil forming factors: parent material, organic, climatic, topographic, Spatio-temporal dimensions. c. Processes of soil formation and soil development: Physical, Biotic and Chemical. Soil profile.	10	5		15
2 (15 Marks)	Physical, Biological and Chemical Properties of Soil	a. Physical properties of Soil- Morphology, Texture, Structure, Water, Air, Temperature and Other properties. b. Biological properties of soil- Soil organism, macro-animals (earthworms, sow bugs, mites, centipedes, rodents and insects) c. Chemical properties of soil and soil reaction.	10	5		15
3 (15 Marks)	Soil Reclamation and Management	a. Soil reclamation and Management: Soil survey and landforms in Environmental management; Integrated soil and water management; Sustainable development of soil resources with reference to India. b. Soil erosion, degradation and conservation. c. Soils of India.	10	5		15
4 (15 Marks)	Practical	b. Collection of soil samples from two different sites c. Soil texture analysis using Jar test d. pH and moisture testing of soil. e. Prepare Soil Map of India/Assam		2	28	30
		TOTAL	**30**	**17**	**28**	**75**

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

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

- **Two Internal Examinations** - **20 Marks**
- **Others (Any two):** - **10 Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate

- **Practical** **10 Marks**

Suggested Readings:

1. Miller, R. W. and Donahue, R. L. (1992): Soils: An Introduction to Soils and Plant Growth, Prentice-Hall of India, New Delhi
2. Brady, N. C., and Weil, R. R. (2008): The Nature and Properties of Soils, Prentice Hall, New Jersey
3. Pitty, A. F. (1978): Geography and Soil Properties, Methuen and Co., London
4. Govinda Rajan, S.V. and Gopala Rao, H.G.: Studies on soils of India, Vikas, New Delhi, 1978.
5. Raychoudhuri, S.P.: Soils of India, ICAR, New Delhi, 1958.
6. Bunting, B.T.: The Geography of Soils, McGraw Hill, New York.
7. Bridges, E. M. and Davidson, D. A. (1982): Principles and Applications of f Soil Geography, Longman Group, London
8. Mc. Bride, M. B. (1999): Environmental Chemistry of Soils, Oxford University Press, New York.
9. Mohammad, N., 1992: New Dimension in Agriculture Geography, Vol. I to VIII, Concept Publications, New Delhi.

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