SYLLABUS FOR DEPARTMENT OF GEOGRAPHY

DIGBOI COLLEGE (AUTONOMOUS)
Curriculum and Credit Framework for FYUGP
(DCA-CCFF Regulations 2025)

FRAMED ACCORDING TO THE
NATIONAL EDUCATIONAL POLICY (NEP) 2020
(Effective from Academic Year 2025-26)

For

Bachelor of Arts (B.A) Bachelor of Science (B. Sc) IN GEOGRAPHY

ESTD 1965

Approved in the BOS, Geography held on 23 / 04 /2025

Curriculum Structure

Sem.	Major (Core)	Minor	MDC	AEC	VAC	SEC	Others	Total Credit
I	C101 (4)	MIN101 (4)	MDC101 (3)	AEC101 (4)	VAC101 (2)	SEC101 (3)	--	20
II	C202 (4)	MIN202 (4)	MDC202 (3)	AEC202 (4)	VAC202 (2)	SEC202 (3)	--	20
III	C303 C304 (4x2)	MIN303 (4)	MDC303 (3)	--	VAC303 (2)	SEC303 (3)	--	20
IV	C405, C406, C407 C408 (4x4)	MIN404 (4)	--	--	--	--	--	20
V	C509 C510 C511 (4x3)	MIN505 (4)	--	--	--	--	IAPC500(4)	20
VI	C612 C613 C614 C615 (4x4)	MIN606 (4)	--	--	--	--	--	20
VII	C716 C717 C718 (4x3)	MIN707 (4)	--	--	--	--	RM 700(4)	20
VIII	C819 C820 (4x2)	MIN808 (4)	--	--	--	--	8 (Dissertation) / 2 DSE (4 + 4)	20
Total	80	32	9	8	6	9	16	160

Assessment Methods:

The assessment methods for the Four-Year Undergraduate Programme (FYUGP) ensure continuous evaluation aligned with the National Education Policy (NEP) 2020. The evaluation comprises In-Semester Assessments and End-Semester Examinations, with a 40:60-mark distribution per course. In-Semester Assessments (40% of total marks) include: Sessional Exam 1 (10 marks), Sessional Exam 2 (10 marks), Group Discussions (GD) or Activities (10 marks),

Seminars/Assignments/Projects/Field Studies (10 marks), and Other Academic Activities (10 marks). Students must appear for both Sessional Exams and any two remaining sub-components to complete In-Semester Assessment. These components use tools like objective tests, written tests, and practical assignments for skill development, with mandatory participation; non-compliance bars students from End-Semester Examinations. End-Semester Examinations (60% of total marks) have two types: courses without practicals have 60-mark exams covering the syllabus through written tests focusing on problem-solving questions; courses with practicals have 45 mark exams plus 15-mark practical evaluation by a Board of Examiners (internal course teacher and external examiner).

Assessment	Sub-Components	Marks	Details
In-Semester Assessment (40% of total, 40 marks)	Sessional Exam 1	10 marks (Mandatory)	First written/objective test to assess ongoing learning.
	Sessional Exam 2	10 marks (Mandatory)	Second written/objective test to evaluate progress.
	GD/Group Activities	10 marks (Choose any 2 of these)	Collaborative tasks fostering critical thinking, communication, and application skills.
	Seminars/Assignments/Projects/Field Studies		Collaborative/Individual tasks but individual reports/presentations
	Other Academic Activities		Flexible tasks assigned by the course teacher, e.g., quizzes, presentations, or case studies, tailored to course needs.
End-Semester Examination (60% of total)	Courses without Practicals	60 marks	Written exam covering full course, emphasizing problem-solving and application-based questions (2-hour duration for 3/4-credit courses).
	Courses with Practicals	Theory: 45 marks and Practical: 15 marks	Theory exam (45 marks) covering full course; practical exam (15 marks) assessed by internal and external examiners, to be conducted before theory exams.

NB: For VAC (Value Added Course) students are required to appear 1 Sessional Exam and any 1 activity among Group Discussions (GD) or Group Activities, Seminars/Assignments/ Projects/ Field Studies, and Other Academic Activities assigned by the course teacher.

FOUR YEAR UNDER-GRADUATE PROGRAMME (FYUGP) IN GEOGRAPHY, DIGBOI COLLEGE (AUTONOMOUS)

- **THE PREAMBLE**

Geography is a vast and diverse field of study that examines the physical and human features **of the Earth** 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.

The importance of geography cannot be overstated **in today's context**. 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. **Geography** is a discipline that contributes to our **understanding** and **knowledge** of the world and **enables** us **to** make informed decisions about our planet's present and future. 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 **undergraduate** Geography **curriculum** has **added** new learning **components** t o make it **more** relevant to **students regarding** 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 practiceIt would be very advantageous to make students of Geography more dynamic and adaptable by enhancing their skills, which would lead to increased employment. The discipline will also help shape the students' overall personalities to face the challenges of an emerging competitive society. The ability of students from diverse backgrounds will be enhanced through incremental learning experiences. The provision of opportunities will lead to the development of individual potential and the creation of better professionals each year.

- **INTRODUCTION:**

India considers higher education to be a fundamental part of its development and growth strategy. 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 encourage in 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 complex field that studies how the natural world and human activities connect. It looks at the different patterns and processes that influence our planet. It includes many different areas like physical geography human geography environmental geography and geospatial sciences. Each of these areas has its own way of looking at things and methods for studying them. The Four-Year Undergraduate Program (FYUGP) in Geography helps students gain a deep understanding of this exciting subject by combining both theory and hands-on learning.

The Bachelor of Arts/Science in the Department of Geography at Degree level of Digboi College (autonomous) adapted as per the commendations of NEP2020 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 seeks to familiarize students with the wide range of topics and areas within geography. This includes its different branches theories techniques and real-world uses. Students will develop a wide understanding of the natural and human systems that create the earth's landscapes and environments. They will also learn about the social and cultural factors that impact these systems.
2. **Develop critical thinking and analytical skills**: The FYUGP in Geography is designed to help students learn how to analyze and understand geographic data and events by using various tools and technologies. Students will learn to recognize and assess spatial patterns connections and trends. They will also use critical thinking and problem-solving skills to tackle real-world situations.
3. **Foster an interdisciplinary and holistic approach to problem-solving:** The FYUGP in Geography aim to develop a well-rounded and multi-faceted understanding of the complicated problems that impact the environment society and economy. Students will learn how to combine knowledge and techniques from various fields including biology geology economics sociology and political science to create new and lasting solutions for environmental and social issues.
4. **Provide opportunities for experiential learning and research:** The FYUGP in Geography seeks to give students chances for hands-on learning and research. This includes activities like field trips internships research projects and working together with teachers and fellow students. Students will have the opportunity to work directly with geospatial technologies. They will perform fieldwork gather and analyze data and share their results with different groups of people.

5. **Prepare graduates for diverse career paths and lifelong learning**: The FYUGP in Geography seeks to equip students for various careers in government private businesses and non-profit organizations along with preparing them for advanced studies and ongoing education. Graduates will gain various transferable skills such as communication teamwork leadership and problem-solving. These skills will help them adjust to changes in their careers and society.

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

1. **Disciplinary knowledge**: Graduates of the FYUGP in Geography will have a strong and thorough knowledge of the key ideas theories and methods in geography. This includes the different areas within geography such as physical geography human geography and geomatics. They will build a solid understanding of both the theories and real-world evidence in geography allowing them to use this knowledge to examine and explain environmental and social events. They will also be able to explain how geography is important for today's environmental and social problems.
2. **Geospatial literacy**: Graduates of the FYUGP in Geography will have a solid understanding of geospatial skills. They will be able to analyze and interpret geospatial data use geographic information systems (GIS) and apply remote sensing methods. They will gain a deep understanding of the basics of map-making earth measurements and the study of spatial data. They will also learn how to use this knowledge to solve real-world issues.
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 understand complex issues from different viewpoints. They will use knowledge and methods from various fields including ecology economics sociology and political science. They will use this knowledge to create well-rounded and detailed understandings of complicated problems and to come up with new and lasting solutions.
5. **Global and cultural competence**: Graduates of the FYUGP in Geography will possess a strong understanding of global and cultural issues. They will recognize the different cultural social and economic backgrounds that influence environmental and social challenges. They will effectively collaborate with individuals from various cultural backgrounds and will have a clear understanding of how cultural differences affect solutions to environmental and social issues.
6. **Ethical and professional practice:** Graduates of the FYUGP in Geography will be dedicated to acting ethically and professionally. They will understand the ethical and legal matters related to solving environmental and social issues. They will work together responsibly with their coworkers and important partners and they will be dedicated to learning throughout their lives and improving their professional skills continuously.

PEO Objectives:

PEO1 Graduates will acquire an extensive understanding of Geography, which includes concepts, theories, and methodologies that are relevant to contemporary issues and challenges.
PEO2 Graduates will acquire a complete understanding of geography as a multidisciplinary field that encompasses physical, human, and environmental dimensions.
PEO3 Graduates will have a comprehensive understanding of Geography and use theoretical knowledge and practical skills to solve real-world problems and contribute to sustainable development initiatives.
PEO4 Display knowledge of geographic technologies and analytical tools for data collection, visualization, and decision-making.
PEO5 Develop professional skills like critical thinking, problem-solving, and interdisciplinary collaboration, which are necessary for academic success and professional settings
PEO6 Graduates will be motivated to pursue advanced studies and research activities to address the nation's educational needs.

Program Specific Outcomes (PSOs)

The following table describes the outcomes that graduates of the BA/B.Sc. Geography programs aim to accomplish goals once students successfully finish their st udies:

PSO Outcome Description:

PSO1 Graduates will have the ability to solve a variety of problems and be able to critically analyze their findings.

PSO2 The graduates will analyze and interpret results, and encourage innovation by creating ideas that reflect wider geo-environmental contexts.
PSO3 Graduates will put their knowledge to use in designing effective methodologies to tackle real-world problems.
PSO4 Graduates will use learned techniques, skills, and modern tools appropriately to address specific challenges.
PSO5 Graduates will acquire a better understanding of problem-solving, analytical thinking, and creativity.
PSO6 Graduates will have the ability to write comprehensive reports, create impactful presentations, and communicate findings efficiently.
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 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

TEACHINGLEARNINGTOOLS

- 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,
- Toposheet sand Satellite Image
- Globes, Charts, Maps
- Plane Table Set, Prismatic Compass,
- Levelling Staff, Rotameter

ASSESSMENT

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

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

TITLE OF THE COURSE	**:**	**GEOMORPHOLOGY**
COURSE CODE	**:**	**CGEO101**
NATURE OF THE COURSE	**:**	**MAJOR**
TOTAL CREDITS	**:**	**3 CREDITS**
DISTRIBUTION OF MARKS	**:**	**45 (End Sem) + 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 analyze various landforms and their evolution through lectures, tutorials, and practical exercises, equipping them with skills essential for careers in environmental and land-use management.

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.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	a. Meaning, Definition, Significance Nature and Scope of Geomorphology. b. Fundamental Geomorphologic Concepts. c. Introduction to Geomorphic Processes	12	2		14
2 (15 marks)	Geomorphic Processes (Endogenetic)	a. Interior and Structure of the earth and. b. Earth Movements-Diastrophism; Epirogenic, Orogenic movements, Types of Folds and Faults, c. Sudden forces: Earthquakes and Volcanoes, its Causes and distribution. d. Plate tectonic, Concept of Geosyncline	13	2		15
3 (15marks)	Geomorphic Processes (Exogenetic) and Evolution of Landforms	a. Exogenetic Processes-Denudation: Weathering, Erosion and Mass wasting b. Cycle of Erosion: Davis & Penk c. Evolution of Landforms (Erosional and Depositional): Fluvial, Karst, Aeolian, Glacial, and Coastal.	14	2		16
		TOTAL	**39**	**6**		**45**

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

TITLE OF THE COURSE	**:**	**GEOMORPHOLOGY**
COURSE CODE	**:**	**CGEO101-P**
NATUREOFTHECOURSE	**:**	**MAJOR**
TOTALCREDITS	**:**	**1 CREDIT**
DISTRIBUTIONOFMARKS	**:**	**15 (End Sem)**

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(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. Slope Analysis – Wentworth's method and Smith's Method.		2	28	30

Where, L:Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

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

CO1: Understand key concepts and terminologies in geomorphology.
ILO1.1: Recall definitions of geomorphological terms.
ILO1.2: Identify different geomorphic processes.
ILO1.3: List various land forms created by geomorphic processes.

CO2: Explaintheearth'sinteriorstructureandgeomorphicprocesses.
ILO2.1:Describethestructureoftheearth'sinterior.
ILO2.2: Explain the concepts plate tectonics, and geosynclines.
ILO2.3: Discuss the processes of weathering and mass wasting.

CO3: Apply geomorphic knowledge to analyze and interpret landscapes and landforms.
ILO3.1: Use topographical maps to interpret landforms.
ILO3.2: Perform morphometric and slope analysis on various terrains.
ILO3.3: 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.
ILO4.3: Assess the impact of climatic conditions on geomorphic processes.

CO5: Integrate geomorphic principles to solve complex geomorphological problems.
ILO5.1: Combine knowledge of endogenetic and exogenetic processes to explain landform evolution.
ILO5.2: Create models representing different geomorphic processes.

CO6: Critically evaluate geomorphic processes and their implications on landform development.
ILO6.1: Judge the effectiveness of different geomorphic theories.
ILO6.2: Evaluate the role of geomorphic processes in landscape modification

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
Meta cognitive					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

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

Suggested Readings:

1. BloomA.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,RobertW.,(2011),Geosystems:AnIntroductiontoPhysicalGeography, 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. Singh, Savindra (1998) Geomorphology, Pravalika Publication, allahabad
9. Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
10. Thornbury W.D., 1968: Principles of Geomorphology, Wiley.

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

TITLE OF THE COURSE : GEOMORPHOLOGY AND OCEANOGRAPHY
COURSE CODE : MINGEO101
NATUREOFTHECOURSE : MINOR
TOTALCREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS : 45 (End Sem) + 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 analyzing bathymetric data.

Course Objectives

- To introduce students to the fundamental concepts of geomorphology and oceanography.
- To develop and 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.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Introduction to Geomorphology	a. Meaning, Definition, Nature and Scope of Geomorphology. b. Fundamental Geomorphological Concepts.	10	2		12
2 (15 marks)	Geomorphic Processes (Endogenetic And Exogenetic)	a. Interior and Structure of the Earth. b. Earth Movements: Diastrophism; Epeirogenic, Orogenic movements, Types of Folds and Faults, c. Sudden forces: Earthquakes and Volcanoes, its Causes and distribution. d. Exogenic Processes : Weathering, Erosion e. Davisian Cycle of erosion	15	2		17
3 (15 marks)	Oceanography	a. Meaning Definition, Nature and Scope of Oceanography b. Ocean Bottom Relief Features: Continental shelf, Continental slope, Abyssal Plain c. Ocean Salinity and its distribution d. Tides–Causes ,Types and Effects e. Ocean currents–Formation and Effects	14	2		16
		TOTAL	39	6		45

Where, L:Lectures T:Tutorials P:Practicals

M. Hazarika Pdas

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

TITLE OF THE COURSE : GEOMORPHOLOGY AND OCEANOGRAPHY
COURSE CODE : MINGEO101-P
NATUREOFTHECOURSE : MINOR
TOTALCREDITS :1CREDIT
DISTRIBUTIONOFMARKS :15 (End Sem)

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(15 marks)	Practical	Practicals on Toposheet Interpretation, Profile Drawing, Stream Ordering, Bathymetric and Hypsometric Curve.	0	2	20	30

Where, L:Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

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

- **Home assignment 10Marks**

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

CO1: Describe the nature and scope of geomorphology and oceanography.
ILO1.1: Define and differentiate between geomorphology and oceanography.
ILO 1.2: Explain the significance of geomorphic and oceanographic processes in shaping the Earth's surface.
ILO1.3: Analyse geomorphological and oceanographic concepts to understand real world landscapes and marine environments.

CO2: Analyse the processes and land forms associated with endogenetic and exogenetic forces.
ILO2.1: Analyze the causes and effects of endogenetic forces such as tectonic movements and exogenetic forces like weathering and erosion.
ILO2.2: Integrate knowledge of Earth's interior structure and surface processes to explain the formation of specific landforms.

CO3: Evaluate the factors influencing ocean salinity, temperature, 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: Analyze the relationships between oceanic phenomena such as tides, and currents.

CO4: Apply practical techniques for interpreting topographical maps and geomorphic data.
ILO4.1: Apply practical skills to interpret topographical maps and analyze geomorphic data.
ILO4.2: Synthesize information from multiple sources, including topographical map sand field

observations, to draw conclusions about landscape evolution.
ILO4.3: Evaluate the accuracy and reliability of data obtained through practical techniques.

CO 5: Demonstrate effective communication of geomorphologic and oceanographic concepts.
ILO 5.1: Communicate geomorphologic and oceanographic concepts effectively through written reports, presentations, and discussions.

ILO 5.2: Present complex geological information in a clear and accessible manner to diverse audiences.

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	
Meta cognitive			CO4	CO4	CO4	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	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

Where,S:Strong correlation M:Medium correlation

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,RobertW.,(2011),Geosystems:AnIntroductiontoPhysicalGeography, 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. ThornburyW.D.,1968: Principles of Geomorphology, Wiley.
10. Gautam, A (2010):Bhautik Bhugol, Rastogi Publications, Meerut11.
11. Tikkaa, RN(1989):Bhautik Bhugol ka Swaroop, Kedarnath RamNath, Meerut
12. Singh,S(2009):Bhautik Bhugol ka Swaroop, Prayag Pustak, Allahabad.
13. AlanP.Trujillo , HaroldV.Thurman (2016):Essentials of Oceanography,12th Edition, Pearson
13. K.Siddhartha(2018):Oceanography: A Brief Introduction, KitabMahal

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

DETAILED SYLLABUS OF 1ST SEMESTER

TITLE OF THE COURSE : INTRODUCTION TO PHYSICAL GEOGRAPHY
COURSE CODE : MDCGEO101
NATURE OF THE COURSE : MULTIDISCIPLINARY COURSE (GEC)
TOTAL CREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS :60 (EndSem)+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.

Course Objectives:

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

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (10 marks)	Introduction to Physical Geography	a. Definition, Nature and Scope Physical Geography. b. Branches of physical geography	5	1		6
2 (18marks)	Atmosphere	a. Definition, composition, structure of the Atmosphere b. Factors and Distribution of Temperature. c. Concept and types of Cyclone.	12	1		13
3 (17 marks)	Lithosphere And Biosphere	a. Interior and Structure of the Earth. b. Earth Movements: Orogenic and Epeirogenic c. Earthquakes and Volcanoes (Distribution, causes). d. Soil and soil forming processes	12	1		13
4 (15 marks)	Hydrosphere	a. Concept of Hydrological Cycle b. Salinity: Distribution and Significance c. Causes and consequences of Sea level changes.	12	1		13
		TOTAL	**41**	**4**		**45**

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MODESOFIN-SEMESTERASSESSMENT: **40Marks**

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

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.
ILO1.2: Explain how Physical Geography differs from other branches of geography.
ILO1.3: Apply the concepts of Physical Geography to analyze real-world phenomena.
CO2: Describe the composition and structure of the atmosphere.
ILO2.1: Explain the composition of the Earth's atmosphere in terms of gases.
ILO2.2: Illustrate the vertical structure of the atmosphere.
ILO2.3: 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.
ILO3.3: Analyse the influence of air masses on weather patterns in different regions.

CO4: Identify and differentiate between various types of Earth movements.
ILO4.1: Identify the different types of Earth movements, such as orogenic and epeirogenic.
ILO4.2: Differentiate between volcanic and seismic activities.
ILO4.3: Interpret maps and diagrams showing Earth's tectonic activities.

CO5: Explain the concept of the hydrological cycle and its significance.
ILO5.1: Describe the stages of the hydrological cycle.
ILO5.2: Discuss the importance of the hydrological cycle in shaping landscapes.
ILO5.3: Evaluate human impacts on the hydrological cycle and associated ecosystems.

CO6: Analyse the causes and consequences of sea leve lchanges.
ILO6.1: Identify natural and anthropogenic causes of sea level changes.
ILO6.2: Evaluate the impact of sea level changes on coastal regions and ecosystems.
ILO6.3: Propose mitigation strategies to address the effects of sea levelrise.

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		
Meta cognitive						

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:Strongcorrelation M:Mediumcorrelation

SEMESTERII

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

TITLE OF THE COURSE	**:**	**CLIMATOLOGY**
COURSE CODE	**:**	**CGEO202**
NATURE OF THECOURSE	**:**	**MAJOR**
TOTALCREDITS	**:**	**3 CREDITS**
DISTRIBUTIONOFMARKS	**:**	**45 (End Sem) + 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.

Course Objectives:

- Todevelopascientificunderstandingofthephysicalaspects ofEarth'sclimate 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.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 marks)	Atmospheric Temperature and Insolation	a. Definition, Composition and structure of Atmosphere b. Factors, Distribution Temperature; vertical and horizontal. c. Insolation, Heat budget, Temperature inversion	10	2		12
2 (15 marks	Atmospheric pressure and winds	a. Pressure belts, Planetary Winds, Jet Streams, Origin and Mechanism of Monsoon. b. Concept of Air mass and Fronts, Cyclones And Anticyclones, Local winds.	13	3		16
3 (15 marks)	Atmospheric Moisture, Weather and Climate	a. Concept of Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation and its types b. Concept, Elements and factors of Weather and Climate, c. Koeppen's and Thornthwaite's Climatic classification	15	2		17
		TOTAL	**38**	**7**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE	**:**	**CLIMATOLOGY**
COURSE CODE	**:**	**CGE0202-P**
NATUREOFTHECOURSE	**:**	**MAJOR**
TOTALCREDITS	**:**	**1 CREDIT**
DISTRIBUTIONOFMARKS	**:**	**15 (End Sem)**

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(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

Where, L:Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

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

CO1: Understand the fundamental concepts and principles of climatology.
ILO1.1: Identify the components and structure of the atmosphere.
ILO1.2: Explain the factors influencing atmospheric temperature distribution.
ILO1.3: 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 analyze weather maps effectively.
ILO 2.2: Concept and types of pressure belts and planetary winds.
ILO 2.3: Explain the concept of air mass, fronts, cyclones, and anticyclones.

CO3: Apply climatological knowledge to analyze and interpret real-world climatic data.

ILO 3.1: Utilize Climograph, hythergraphs, and ergographs to represent climatic data.

ILO 3.2: Identify climatic regions according to Koppen's method.

CO4: Analyze the relationships between atmospheric variables and their impacts.
ILO4.1: Analyse the relationship between evaporation, humidity, and condensation processes.
ILO4.2: Evaluate the influence of atmospheric pressure systems and wind patterns.

CO5: Propose solutions for climate-related challenges.
ILO5.1: Develop strategies to mitigate the impact of extreme weather events.
ILO5.2: Propose adaptation measures to address the challenges posed by climate change.
ILO5.3: Synthesize interdisciplinary perspectives to address complex climate-related issues.

CO6: Critically evaluate climatic data and climate change theories.
ILO6.1: Critically evaluate the reliability and limitations of climatic data sources.
ILO6.2: Assess the validity of climate change theories and predictions.

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
Meta cognitive			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:Strongcorrelation M:Mediumcorrelation

Suggested Readings:

1. AnthesR.A.,Panofsky H.A.,CahirJ.J.andRangoA.,1978:TheAtmosphere, Columbus.
2. BarryR.G.andCarletonA.M.,2001: Synoptic and Dynamic Climatology, Routledge, UK.
3. BarryR.G.andCorleyR.J.,1998: Atmosphere, Weatherand Climate, Routledge, New York.
4. BattenL.J.,1979: Fundamentals of Meteorology, Prentice-HallInc.,EnglewoodCliffs, New Jersey. 5. Boucher K., 1975: Global Climates, Halstead Press, New York.
5. CritchfieldH.J.,1987:General Climatology, Prentice-Hall of India, NewDelhi
6. Das,P.K.,1968:The Monsoon, National Book Trust, NewDelhi.
7. Hobbs,J.E.,1980:AppliedClimatology,Butterworth.
8. Lal,D.S.,1998:Climatology, Sharda Pustak Bhawan, Allahabad.
9. Lockwood,J.G.,1976:World Climatology-Environmental Approach, Ed.ArnoldLtd.
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. OliverJ.E.andHidoreJ.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 PerryA.(eds.),1997:Applied Climatology: Principlesand Practice, Routledge, USA and Canada.
16. Trewartha G.T.and HorneL.H.,1980:An Introduction to Climate, McGraw-Hill

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

TITLE OF THE COURSE	**:**	**CLIMATOLOGY & BIOGEOGRAPHY**
COURSE CODE	**:**	**MINGEO202**
NATURE OF THE COURSE	**:**	**MINOR**
TOTAL CREDITS	**:**	**3 CREDITS**
DISTRIBUTION OF MARKS	**:**	**45 (End Sem) 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.

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.

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. Horizontal and Vertical Distribution of Temperature, Insolation, Heat budget.	12	1		13
2 (15 Marks)	Atmospheric Pressure and Winds	a. Concept and circulation of Pressure Belts, Jet Streams, Origin and Mechanism of Monsoon. b. Concept of Air mass and Fronts, Cyclones and Anticyclones, Local winds c. Hydrological cycle, Precipitation and its types d. Koeppen's climatic classification	14	1		15
3 (15 Marks)	Biogeography	a. Biogeography: Definition, scope and significance b. Zoo geographical and Floristic regions of the world c. Loss of Biodiversity and its Conservation.	15	2		17
		TOTAL:	**41**	**4**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE	**:**	**CLIMATOLOGY & BIOGEOGRAPHY**
COURSE CODE	**:**	**MINGEO202-P**
NATUREOFTHECOURSE	**:**	**MINOR**
TOTALCREDITS	**:**	**1 CREDIT**
DISTRIBUTIONOFMARKS	**:**	**15 (End Sem)**

MARKS	NAME	CONTENTS	L	T	P	Total Hours
4 (15 Marks)	Practical	a. Interpretation of various weather symbols depicted on maps. b. Preparation of rainfall-temperature graphs; Hythergraph and Climograph c. Mapping of protected areas (National Park, biosphere reserve and wildlife sanctuary) of India. Mapping of Biodiversity hotspots of the world and India	7	3	20	30

Where, L:Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

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.
ILO1.2: Interpret temperature distribution patterns and the mechanisms.
ILO1.3: Process of heating atmosphere and insolation.

CO2: Evaluate the influence of atmospheric pressure and wind patterns on global climate.

ILO2.1: Examine the concept of pressure belts and their types.
ILO2.2: Understanding the impact of jet streams and mechanism of monsoon.
ILO2.3: 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 species.
ILO 3.2: Analyze the major zoogeographical and floristic regions of the world.
ILO3.3: Evaluate the causes and consequences of biodiversity loss and conservation.

CO4: Apply quantitative methods to interpret weather data and climatic classifications.
ILO4.1: Interpret weather symbols depicted on maps to analyze atmospheric conditions.
ILO4.2: Utilize rainfall-temperature graphs, hythergraphs, and Climograph to represent climatic data.
ILO4.3: Demonstrate proficiency in mapping protected areas and biodiversity hotspots.

CO5: Demonstrate proficiency in critical thinking and problem-solving related to climatic and biogeographical issues.
ILO5.1: Critically analyze debates on climate change and biodiversity conservation.
ILO5.2: Apply theoretical concepts to real-world scenarios to propose sustainable solutions.
ILO5.3: 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**

Suggested Readings:

1. AnthesR.A.,PanofskyH.A.,CahirJ.J.andRangoA.,1978:TheAtmosphere, Columbus.
2. Barry R.G.and CarletonA.M.,2001: Synoptic and Dynamic Climatology, Routledge, UK.
3. BarryR.G.andCorleyR.J.,1998: Atmosphere, Weather and Climate, Routledge, New York.
4. BattenL.J.,1979: Fundamentals of Meteorology, Prentice-HallInc., Engle wood Cliffs, New Jersey. Boucher K., 1975: Global Climates, Halstead Press, New York.
5. Critchfield H.J.,1987:General Climatology, Prentice-HallofIndia, NewDelhi
6. Das,P.K.,1968:TheMonsoon,NationalBookTrust,NewDelhi.
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.ArnoldLtd.
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. OliverJ.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 PerryA. (eds.),1997: Applied Climatology: Principles and Practice, Routledge, USA and Canada.
16. TrewarthaG.T.and HorneL.H.,1980:An Introduction to Climate, McGraw-Hill.
17. Cox,C.B.,R.Ladle,andP.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 times cales. Pages 47-65 in M.V. LomolinoandL.
22. R.Heaney,editors. Frontiers of Biogeography: New Directions in the Geography of Nature. Sinauer, Sunderland, MA.

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

TITLE OF THE COURSE	**:**	**FUNDAMENTALS OF GEOMORPHOLOGY**
COURSE CODE	**:**	**MDCGEO202**
NATUREOFTHECOURSE	**:**	**MULTIDISCIPLINARY COURSE (GEC)**
TOTALCREDITS	**:**	**3 CREDITS**
DISTRIBUTIONOFMARKS	**:**	**60(EndSem)+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 the oretical in sights and practical applications, students will gain a comprehensive understanding of geomorphological phenomena and their significance in shaping the Earth's surface.

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, wind, as well as weathering and mass wasting.

UNITS	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Principles of Geomorphology	a. Meaning, Nature and Scope of geomorphology. b. Fundamental Concepts in Geomorphology.	8	4		12
2 (15 Marks)	Interior of the Earth	a. Composition and structure of the earth's interior. 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. Concept of Folds and Faults c. Plate Tectonics: Types of plates d. Earthquake, Volcanos: Causes and distribution	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 and Wind	8	4		12
		TOTAL	**30**	**15**		**45**

MODESOFIN-SEMESTERASSESSMENT: **40Marks**

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

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

Students will be able to:

CO1: Describe the Meaning, Nature, and Scope of Geomorphology
ILO1.1: Define geomorphology and explain its relevance in physical geography.
ILO 1.2: Discuss the historical development and various branches of geomorphology.

CO2: Analyse Fundamental Concepts in Geomorphology
ILO2.1: Illustrate fundamental geomorphological concepts such as landform, erosion, and deposition.
ILO2.2: Compare and contrast different geomorphological processes and their effects.
ILO2.3: Apply the principles of geomorphology to real- world geographic scenarios.

CO3: Explain the Internal Structure of the Earth
ILO3.1: Describe the layers of the Earth based on their physical properties.
ILO3.2: Explain the chemical composition of the Earth's layers.

CO4: Interpret the Nature and Behavior of Seismic Wave sand Their Types
ILO4.1: Differentiate between primary (P) waves, secondary (S) waves, and surface waves.
ILO4.2: Analyse how seismic waves provide information about the Earth's interior.

CO5: Evaluate the Impact of Endogenetic Forces on Landform Evolution
ILO5.1: Describe the processes of earth movements, including sudden and slow movements.
ILO5.2: Explain the formation of folds and faults and their influence on the landscape.
ILO5.3: Analyse the role of plate tectonics in the formation of mountains and other landforms.

CO6: Assess the Processes and Outcomes of Exogenetic Forces
ILO6.1: Identify various types of weathering and mass wasting and their effects on landforms.
ILO6.2: Explain the geomorphic work of running water, underground water, and wind.
ILO 6.3: Assess the interaction between exogenetic processes and resulting geomorphic features.

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:Strongcorrelation M:Mediumcorrelation

SuggestedReadings:

1. Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of India, New Delhi.
2. Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.
3. Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
4. Gautam,A(2010):BhautikBhugol,RastogiPublications,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'sChangingSurface,IndianEdition,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. ThornburyW.D.,1968:PrinciplesofGeomorphology,Wiley.

SEMESTERIII

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

TITLE OF THE COURSE	**:**	**ENVIRONMENTAL GEOGRAPHY**
COURSE CODE	**:**	**CGEO303**
NATUREOFTHECOURSE	**:**	**MAJOR**
TOTALCREDITS	**:**	**3 CREDITS**
DISTRIBUTIONOFMARKS	**:**	**45(End-Sem.) 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.

Course Objectives:

- Understand the fundamental concepts, scope, and developments in environmental geography.
- Analyze the structure, functions, and dynamics of ecosystems, along with their distribution patterns.
- Exploretheintricaterelationshipbetweenhumanactivitiesandtheenvironment across various biomes.
- Examine the causes, impacts, and measures for mitigating environmental degradation.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15Marks)	Environmental Geography	a. Environmental geography – Nature, scope and Significance. b. Man -environment Relationship	12	3	-	15
2 (15Marks)	Ecology & Ecosystem	a. Ecology: Meaning, Nature, Types. b. Ecosystem: Concept, Types, c. Structure and Functions, Distribution Food chain, food web Trophic level of ecosystem	12	3	-	15
3 (15Marks)	Environment Degradation	a. Meaning, cause and impact b. Conservation of environment, water, soil and wetland, forest. Concept of Sustainable Development & its Challenges, EIA	12	3	-	15
		TOTAL	**36**	**9**		**45**

Where, L:Lectures T:Tutorials P:Practicals

M. Hazarika

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

TITLE OF THE COURSE	**:**	**ENVIRONMENTAL GEOGRAPHY**
COURSE CODE	**:**	**CGEO303-P**
NATUREOFTHECOURSE	**:**	**MAJOR**
TOTALCREDITS	**:**	**1CREDIT**
DISTRIBUTIONOFMARKS	**:**	**15(End-Sem.)**

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(15Marks)	Practical	Field Observation and Data Collection and prepare a field report: • 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, soil composition. • Identify different species of plants and animals found in the area.		2	43	45

Where, L: Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others (Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

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

CO1: Demonstrate a comprehensive understanding of environmental geography and concepts.
ILO1.1: Identify key concepts in environmental geography.
ILO1.2: Define the scope and nature of environmental geography.
ILO1.3: Recall the developments in the field of environmental geography.

CO2: Interpret the principles of ecology and their application in understanding ecosystems.
ILO2.1: Explain the principles governing ecological systems.
ILO2.2: Interpret the structure and function of ecosystems.
ILO2.3: Discuss the significance of ecological dynamics in environmental studies.

CO3: Apply ecological concepts to analyse the relationships between human activities and the environment.
ILO3.1: Apply ecological principles to analyse human-environment interactions.
ILO3.2: Propose adaptive strategies for sustainable human-environment coexistence.

CO4: Analyse environmental degradation processes and evaluate conservation strategies.
ILO4.1: Analyse the causes and consequences of environmental degradation.
ILO4.2: Evaluate conservation efforts for water, soil, forests, and marine ecosystems.

CO5: Integrate knowledge from field observations to propose solutions for environmental challenges.
ILO5.1: Synthesize field observations to identify environmental issues.
ILO5.2: Generate hypotheses for addressing environmental problems.
ILO5.3: Develop action plans for environmental conservation based on collected data.

CO6: Evaluate the effectiveness of sustainable development practices and EIA.
ILO6.2: Assess the impact of environmental impact assessments (EIA).
ILO6.3: 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

MappingofCourseOutcomestoProgramOutcomes

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:Strongcorrelation M:Mediumcorrelation

Suggested Readings:

1. BrunnerR.C.,1989, Hazardous Waste Incineration, McGrawHillInc.480p.
2. Jadhav, H&Bhosale,V.M.1995.Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
3. Mckinney, M.L. & School, R.M.1996. Environmental Science systems & Solutions, Web enhanced edition. 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.,andBerg,L.R.(2015). Environment, 8thEdition. Wiley Publishing, USA.
7. Singh, J.S., Singh, S.P., and Gupta, S.R. (2017). Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi. Chapter 1 (Page: 3-28).

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

TITLE OF THE COURSE	**: REMOTE SENSINGAND GIS IN GEOGRAPHY**
COURSE CODE	**: CGEO304**
NATUREOFTHECOURSE	**:MAJOR**
TOTALCREDITS	**:3 CREDITS**
DISTRIBUTIONOFMARKS	**:45(End-Sem.) 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.

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.

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 Sensors. 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. c. Introduction to geo- referencing of topographical map (raster image) 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
		TOTAL	36	9		45

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE : REMOTE SENSINGAND GIS IN GEOGRAPHY
COURSE CODE : CGEO304-P
NATUREOFTHECOURSE :MAJOR
TOTALCREDITS :1CREDIT
DISTRIBUTIONOFMARKS :15(End-Sem.)

MARKS	NAME	CONTENT	L	T	P	Total Hours
(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 and Data Analysis: Pre-processing (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

Where, L:Lectures T:Tutorials P:Practicals

MODESOFIN-SEMESTERASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

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
ILO1.1: Define remote sensing and explain its significance in geographic studies.
ILO1.2: Identify key components and platforms used in remote sensing.
ILO 1.3: Outline the historical milestones in the development of remote sensing technology.
CO2: Analyze and interpret remote sensing data using digital image processing techniques.
ILO2.1: Differentiate between types of digital images and their characteristics.
ILO2.2: 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.
ILO3.1: Define GIS and discuss its core components and functions.
ILO3.2: Differentiate between raster and vector data structures and their applications.

ILO3.3: 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.
ILO4.1: Import and manipulate raster and vector data within a GIS interface,
ILO4.2: Create and edit shape files, and perform spatial analysis such as buffering.
ILO4.3: Conduct GIS-based data visualization and interpretation.
CO5: Apply remote sensing and GIS techniques to practical geographic problems, such as land-use change detection.
ILO5.1: Identify appropriate remote sensing and GIS methods for specific geographic problems.
ILO5.2: Analyse and interpret satellite images for land cover and land-use analysis;
ILO5.3: Develop GIS-based solutions for resource management and urban planning challenges.
CO6: Critically evaluate and communicate remote sensing and GIS research and findings effectively.
ILO6.1: Review and critique recent literature on remote sensing and GIS methodologies.
ILO6.2: 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:Strongcorrelation M:Mediumcorrelation

Suggested Readings:

1. CampbellJ.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.andChipmanJ.W.,2004:*Remote Sensing and Image Interpretation*, Wiley. (Wiley Student Edition).
5. Nag,P.andKudra,M.,1998:*Digital Remote Sensing*, Concept, NewDelhi.
6. Rees,W.G.,2001:*Physical Principles of Remote Sensing*, Cambridge University Press.
7. Singh, R.B.andMurai,S.,1998: *Space-informatics for Sustainable Development*, Oxford and IBH Pub.
8. Wolf, P.R. andDewitt,B.A.,2000:*Elements of Photogrammetry:WithApplications in GIS*, McGraw-Hill.
9. Sarkar,A.(2015):Practicalgeography:A systematic approach. Orient Black Swan Private Ltd., New Delhi
10. Chauniyal, D.D. (2010) Sudur Samvedan evam Bhogolik 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 : MINGEO303
NATUREOFTHECOURSE : MINOR
TOTALCREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS : 45(End-Sem.) 40(In-Sem.)

CourseDescription:

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

CourseObjectives:

- 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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Human Geography	a. Definition, Nature, Major Subfields and Contemporary Relevance of human geography 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. 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. Cultural diffusion: meaning, factors of cultural diffusion	12	3		15
		TOTAL	**36**	**9**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE : HUMAN, SOCIAL AND CULTURAL GEOGRAPHY
COURSE CODE : MINGEO303-P
NATUREOFTHECOURSE : MINOR
TOTALCREDITS : 1 CREDIT
DISTRIBUTIONOFMARKS : 15(End-Sem.)

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(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

Where, L:Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home assignment 10Marks**

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

CO1: Analyze fundamental concepts and contemporary relevance of human geography to recognize its scope and importance in understanding human-environment interactions.
ILO1.1: Describe key concepts in human geography.
ILO1.2: Identify the relevance of human geography in modern contexts.
ILO1.3: 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.
ILO3.1: Calculate and interpret the Human Development Index.
ILO3.2: Compare the development status of different countries.
ILO3.3: 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.
ILO4.2: Categorize different types of space and their significance.
ILO4.3: Analyze 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.
ILO5.1: Identify and map cultural regions of the world.
ILO5.2: Explain the concept and process of cultural diffusion.
ILO5.3: Analyze 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.
ILO6.1: Construct and interpret age–sex pyramids for different regions.
ILO6.2: 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
Meta cognitive		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:Strongcorrelation M:Mediumcorrelation

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 No7,NewDelhi.
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, NewDelhi.
9. Subba Rao B.(1958),'Personality of India', MS University Press, Baroda.
10. PainR,M. Barke, D Fuller, JGough, RMacFarlane, GMowl, (2001), Introducing Social Geographies, Arnold Publishers, London.
11. Dutt NK.,(1986),Origin and Growth of Caste in India, Firma Kin, Calcutta.
12. Taher, M,(2017), Social Geography, Ashok Book Stall, Guwahati.
13. Sopher D. (1980) (ed) 'An Exploration of India: Geographical Perspectives on Society and Culture', Cornell Press, New York.

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

TITLE OF THE COURSE : CLIMATOLOGY
COURSE CODE : MDCGEO303
NATURE OF THE COURSE : MULTIDISCIPLINARY COURSE
(GEC) TOTAL CREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS :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 inter connections 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.

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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Atmosphere	a. Composition and Structure of atmosphere b. Vertical & Horizontal distribution of Temperature. c. Elements and factors of weather and climate.	**8**	**3**		**11**
2 (15 Marks)	Atmospheric Pressure and Winds	a. Atmospheric Pressure–Influencing factors on atmospheric pressure. Vertical and Horizontal Distribution atmospheric pressure, Pressure Belts. b. Wind Types - planetary, seasonal, (land and sea breeze). c. Air-Masses and its types; Cyclones: Tropical and temperate.	**8**	**4**		**12**
3 (15 Marks)	Atmospheric Moisture	a. Humidity: Absolute, Relative and Specific. b. Hydrological cycle and its Component c. Precipitation and its Types.	**7**	**4**		**11**
4 (15 Marks)	Global climate system	a. Koeppen's classification of climate(India) b. Climate Change: Causes and consequences	**7**	**4**		**11**
		TOTAL	**30**	**15**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

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

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.
ILO1.1: Describe the vertical layers of the atmosphere and their characteristics.
ILO1.2: Analyse how atmospheric composition varies with altitude and geographical location.
ILO1.3: Explain the seasonal changes in atmospheric composition and structure.

CO2: Describe the factors influencing atmospheric pressure and the distribution of pressure belts globally.
ILO2.1: Identify and explain the factors that affect atmospheric pressure.
ILO2.2: Discuss the horizontal and vertical distribution of atmospheric pressure.
ILO2.3: 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.
ILO3.1: Explain the causes of various wind patterns, including land and sea breezes.
ILO3.2: 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.
ILO4.1: Define and classify different types of air masses.
ILO4.2: Explain the processes involved in the formation of tropical and temperate cyclones.
ILO4.3: Assess the global distribution and impacts of different cyclone types.

CO5: Interpret the concepts of atmospheric moisture including humidity, hydrological cycle, and precipitation.
ILO5.1: Describe absolute, relative, and specific humidity and their measurement.
ILO5.2: Explain the components and processes of the hydrological cycle.
ILO5.3: 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
ILO6.1: Outline Köeppen's climate classification system with a focus on Indian climates.
ILO6.2: Explain the primary causes and effects of contemporary climate change.
ILO6.3: 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:Strongcorrelation M:Mediumcorrelation

SuggestiveReadings:

1. Routledge,UK.
2. BarryR.G.andCorleyR.J.,1998: *Atmosphere, Weather and Climate*, Routledge, NewYork.
3. CritchfieldH.J.,1987:*GeneralClimatology*,Prentice-HallofIndia,NewDelhi
4. LutgensF.K.,TarbuckE.J.andTasaD.,2009:*TheAtmosphere:AnIntroductionto Meteorology*, Prentice-Hall, Englewood Cliffs, New Jersey.
5. OliverJ.E.andHidoreJ.J.,2002:*Climatology:AnAtmosphericScience*,PearsonEducation, New Delhi.
6. TrewarthaG.T.andHorneL.H.,1980:*AnIntroductiontoClimate*,McGraw-Hill.
7. GuptaLS(2000):JalvayuVigyan,HindiMadhyamKaryanvayNidishalya,Delhi Vishwa Vidhyalaya, Delhi
8. Lal,DS(2006):JalvayuVigyan,PrayagPustakBhavan,Allahabad
9. Vatal,M(1986):BhautikBhugol,CentralBookDepot,Allahabad
10. Singh,S(2009):JalvayuVigyan,PrayagPustakBhawan,Allahabad.

SEMESTER IV

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

TITLE OF THE COURSE : HUMAN, POPULATION AND SETTLEMENT GEOGRAPHY
COURSE CODE : CGEO405
NATUREOFTHECOURSE : MAJOR
TOTALCREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS : 45(End-Sem.) 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 framework sand practical applications, students examine the spatial distribution of human populations, factors influencing settlement patterns, and contemporary issues in human geography.

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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15 Marks)	Human Geography	a. Definition, Nature, Scope & Contemporary Relevance of Human Geography. b. Human adaptation to various geographical regions (Cold regions, hot regions); c. Human groups (Races): Classification & their spatial distribution;	14	2		16

2 (15 Marks)	Population Geography	a. Definition, Nature and Scope of population geography b. Factors affecting distribution & density of population. c. Concept of Population growth & Composition, d. Demographic Transition theory. e. Migration: Types and consequences f. Contemporary Issues- declining sex ratio, HIV/AIDS.	*14*	2		16
3 (15 Marks)	Settlement Geography	a. Concept &Classification of settlement. b. Patterns and types of Rural Settlement. c. Growth of Urban settlement and functional classification of towns. d. Primate city, Christaller's Central Place Theory	12	1		13
		TOTAL	**40**	**5**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE : HUMAN, POPULATION AND SETTLEMENT GEOGRAPHY
COURSE CODE : CGEO405-P
NATUREOFTHECOURSE : MAJOR
TOTALCREDITS : 1 CREDIT
DISTRIBUTIONOFMARKS : 15(End-Sem.)

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(15 Marks)	Practical	a. Preparation of population growth curve – Assam and India (Rural and Urban) b. Preparation of population distribution, density & literacy maps of Assam and India (Rural and Urban) c. Age-sex pyramid for developed and developing countries		10	20	30

Where, L :Lectures T:Tutorials P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others (Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home assignment 10Marks**

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

CO1: Explain and evaluate the significance of Human Geography in societal development and identify its interdisciplinary connections.
ILO1.1: Analyse the contributions of Human Geography to addressing contemporary societal challenges.
ILO1.2: Assess the impact of human activities on geographical landscapes and ecosystems.
ILO1.3: Formulate interdisciplinary approaches to complex geographical issues.

CO2: Apply theoretical frameworks to analyse population dynamics and understand their implications on regional development.
ILO2.1: Interpret demographic data to discern trends in population growth and distribution.
ILO1.2: Evaluate the impact of socio-economic factors on population dynamics.
ILO1.3: Propose strategies for sustainable population management at local and global scales.

CO3: Classify settlements based on their characteristics and assess their socio-economic significance.
ILO3.1: Analyse the factors influencing the location and morphology of rural and urban settlements.
ILO3.2: Compare and contrast settlement patterns across different geographical regions.

ILO3.3: Evaluate the role of settlements in fostering economic development and social cohesion.

CO4: Utilize geographical techniques to analyze population data and settlement patterns.
IL04.1: Apply mapping techniques to represent population distribution and density.
ILO4.2: Interpret demographic indicators to assess regional development disparities.
ILO4.3: Employ spatial analysis tools to identify patterns and trends in settlement geography.

CO5: Critically examine contemporary issues in population dynamics and settlement patterns.
ILO5.1: 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.
ILO5.3: 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.
ILO6.1: Design and conduct spatial analyses to investigate population dynamics and settlement patterns.
ILO6.2: Present research findings effectively using appropriate visual aids and data visualization techniques.
ILO6.3: 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:Strongcorrelation M:Mediumcorrelation

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

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

TITLE OF THE COURSE : POLITICAL GEOGRAPHY
COURSE CODE : CGEO406
NATUREOFTHECOURSE : MAJOR
TOTALCREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS : 45(End-Sem.) 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.

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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15Marks)	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.	12	2	-	14
2 (15Marks)	Geopolitical Theories	a. Geopolitics: Concept and its evolution. b. Geostrategic Theories of Mahan, Mackinder.	12	2	-	14
3 (15Marks)	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), SAARC countries	15	2	-	17
		TOTAL	39	6		45

Where, L:Lectures T:Tutorials P:Practicals

Pdas M. Hazarika

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

TITLE OF THE COURSE : POLITICAL GEOGRAPHY
COURSE CODE : CGEO406-P
NATUREOFTHECOURSE : MAJOR
TOTALCREDITS : 1 CREDITS
DISTRIBUTIONOFMARKS : 15(End-Sem.)

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(15Marks)	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. d. Demarcate Mc Mohan & Redcliffe line on India map		4	26	30

Where, L:Lectures T:Tutorials P:Practicals

MODESOFIN-SEMESTERASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others (Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home assignment 10Marks**

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

- **CO1:** Understand the foundational concepts and scope of Political Geography.
- **ILO1.1:** Define the key concepts and scope of Political Geography.
- **ILO1.2:** Describe various approaches to studying Political Geography.
- **ILO1.3:** 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.
- **ILO2.2**: Summarize the geostrategic theories of Mahan, Mackinder, and.
- **ILO2.3:** Compare the applications and implications of these theories in modern geopolitical scenarios.
- **CO3:** Examine the elements and geographical attributes of states and nation-states**.**
- **ILO3.1:** 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.

- **ILO3.3:** Assess the implications of these attributes on the political stability and identity of states.
- **CO4:** Evaluate the concepts of frontiers, boundaries, and their functions in the context of Political Geography.
- **ILO4.1**: Define the concepts of frontiers and boundaries.
- **ILO4.2**: Classify different types of boundaries and their functions.
- **ILO4.3**: Evaluate how boundaries influence political relationships and conflicts.
-
- **CO5:** Apply practical knowledge through map analysis and shape index calculations related to political reorganization and territorial disputes.
- **ILO5.1**: Create and interpret maps showing there organization of North East India.
- **ILO5.2**: 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:Strongcorrelation M:Mediumcorrelation

Suggested Reading:

1. Adhikari, Sudipta: Political Geography, Rawat Publication, NewDelhi.
2. Adhikari, Sudipta: Political Geography of India, Sarda Pushtak Bhawan,
3. Cox,K.,2002:PoliticalGeography,WileyBlackwell
4. Dikshit,R.D.(1999):PoliticalGeography,AContemporaryPerspectives,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 4TH SEMESTER

TITLE OF THE COURSE : STATISTICAL METHODS IN GEOGRAPHY
COURSE CODE : CGEO407
NATUREOFTHECOURSE : MAJOR
TOTALCREDITS :3 CREDITS
DISTRIBUTIONOFMARKS :45(End-Sem.) 40(In-Sem.)

CourseDescription:

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.

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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15Marks)	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 (15Marks)	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 (15Marks)	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
		TOTAL	**36**	**9**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE : STATISTICALMETHODS IN GEOGRAPHY
COURSE CODE : CGEO407-P
NATUREOFTHECOURSE :MAJOR
TOTALCREDITS :1CREDIT
DISTRIBUTIONOFMARKS :15(End-Sem.)

MARKS	NAME	CONTENTS	L	T	P	Total Hours
4 (15Marks)	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

Where, L:Lectures T:Tutorials P:Practicals

MODESOFIN-SEMESTERASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home assignment 10Marks**

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

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.
ILO2.1: 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.

ILO3.1: Apply sampling techniques to collect representative geographical data.
ILO3.2: Utilize correlation and regression analysis to explore relationships between geographical variables.
ILO3.3: 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.

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:Strongcorrelation M:Mediumcorrelation

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 Mc Cullag hP.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, KitabMahal, Allahabad.
6. KingL,S.,1969:Statistical Analysis in Geography, PrenticeHall.
7. YeatesM.,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 : CGEO408
NATUREOFTHECOURSE : MAJOR
TOTALCREDITS : 3 CREDITS
DISTRIBUTIONOFMARKS : 45(End-Sem.) 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 in sights into the intricate connections between ecosystems, climate, soil, oceanography, and human activities.

Course Objectives:

- To introduce and enhance the learner's understanding of Biogeography and Oceanography and their fundamental concepts.
- To acquaint under graduate 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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (20 Marks)	Biogeography	a. Definition, scope and significance b. factors of world distribution of plants and animals c. Biomes : concept and types d. Soil forming processes, classification and distribution of soil, soil horizon and profile, soil erosion and conservation. e. Majors soil types of India and Assam.	20	2		22
2 (25 Marks)	Oceanography	a. Meaning and significance of Oceanography. b. Configuration of ocean floor- continental shelf, continental slope, deep sea plain; Bottom configurations of the Atlantic, Pacific Indian oceans. c. Salinity and temperature of ocean water. d. Ocean currents of the Atlantic, Pacific and Indian oceans. e. Marine deposits: Definition, Types and Distribution f. Theories of origin of Coral reefs and Atolls-Darwin & Dally's theories.	20	3		23
		TOTAL	**40**	**5**		**45**

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

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

TITLE OF THE COURSE : BIOGEOGRAPHYAND OCEANOGRAPHY
COURSE CODE : CGEO408-P
NATUREOFTHECOURSE :MAJOR
TOTALCREDITS :1CREDIT
DISTRIBUTIONOFMARKS :15(End-Sem.)

MARKS	NAME	CONTENTS	L	T	P	Total Hours
(15 Marks)	Practical	a. Mapping of Phyto-geographic 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

Where, L:Lectures T:Tutorials P:Practicals

MODESOFIN-SEMESTERASSESSMENT:

- **Two Internal Examination- 20Marks**
- **Others(Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

Course Outcomes (COs) and Intended Learning Outcomes (ILOs): Students will be able to:
CO1: State the principles and significance of Biogeography and Oceanography.
ILO1.1: Identify different bio geographic regions and explain their characteristics.
ILO1.2: DescribethesignificanceofoceanographyinunderstandingEarth'sprocesses.
ILO1.3: 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.
ILO2.2: 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.
ILO3.2: Analyse the salinity, temperature, and currents of different ocean basins.
ILO3.3: Evaluate theories explaining the origin of coral reefs and atolls.

CO4: Apply mapping techniques in Biogeography and Oceanography.
ILO4.1: Map phytogeographic and zoogeographic regions of the world.
ILO4.2: Create maps depicting protected areas in Assam/North East India /India.
I**LO4.3:** 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.
ILO6.1: Conduct field work to observe and document biogeographic and oceanographic features.
ILO6.2: Apply practical techniques in soil analysis and mapping of marine resources.
ILO6.3: 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:Strongcorrelation M:Mediumcorrelation

Suggested Readings:

1. Singh. S.: Geomorphology
2. Gataum. A.: Geomorphology
3. Ahmed.E.,1985:Geomorphology,KalyaniPublisher,NewDelhi
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, M ethumand Co. London.
10. Leopold.L.B., Wolman. M.G.,Miller.J.P.,1964:fluvialprocessesin geomorphology, Freeman, Sanfransisco.
11. Penck.W.,1924:MorphologicalAnalysisofLand form s,McMillan,London.
12. HussainH(ed),1994:Bio-geography(PartI&II), AnmolPublications,NewDelhi

13. Robinson,H.,1982:Bio-geography,ELBS,McDonald&Evans.London.
14. Simmons.I.G.,1974:Bio-geography:NaturalandCultural,London.
15. Tiby,1982:Bio-geography.Longman.
16. King.CAM(1972):OceanographyofGeographers.E.Arnold,London
17. Sharma.R.C.etal.(1970):OceanographyforGeographers,ChetnyaPubl. House,Allahabad.

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

TITLE OF THE COURSE : GEOGRAPHY OFR ESOURCES AND ECONOMIC DEVELOPMENT
COURSE CODE : MINGEO404
NATUREOFTHECOURSE :MINOR
TOTALCREDITS :3 CREDITS
DISTRIBUTIONOFMARKS :45(End-Sem.) 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.

Course Objectives:

- Develop an understanding of resources and 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.

UNIT	NAME	CONTENTS	L	T	P	Total Hours
1 (15Marks)	Geography of Resources and	a: Concept of resource; Relationship between resource-base and Economic development	12	2	-	14
	Economic Development	b:Classification and characteristics of resources. c. Functional theory of resource.				
2 (15Marks)	Natural Resource sand 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: Conservation of Natural Resources	14	2	-	16
3 (15Marks)	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	12	3	-	15
		TOTAL	**38**	**7**		**45**

Where, L:Lectures T:Tutorials P:Practicals

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

TITLE OF THE COURSE : GEOGRAPHYOFRESOURCESANDECONOMIC DEVELOPMENT
COURSE CODE : MINGEO404-P
NATURE OF THECOURSE :MINOR
TOTAL CREDITS :1CREDIT
DISTRIBUTION OF MARKS :15(End-Sem.)

4 (15Marks)	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

Where, L:Lectures T:Tutorials P:Practicals

MODESOFIN-SEMESTERASSESSMENT: 40Marks

- **Two Internal Examination- 20Marks**
- **Others (Anyone) - 10Marks**
  - Group Discussion
  - Seminar presentation on any of the relevant topics
  - Debate
- **Home Assignment 10Marks**

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

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: Analyze the relationship between resource base and economic development.
ILO1.3: 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.
ILO2.2: Assess how these resources contribute to economic development in different regions.
ILO2.3: Discuss the concept of development and the rational use of natural resources, including Environmental Impact Assessment (EIA).

CO3: Analyze Patterns of Economic Development and Resource Use
ILO3.1: Compare the development patterns of developed and developing countries.
ILO3.2: 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
ILO5.1: Explain the functional theory of resources in the context of economic geography.
ILO 5.2: Analyze 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: Understanding 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

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 Wileyand Sons, New York.

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