Anekant Education Society's

Tuljaram Chaturchand College, Baramati

(Empowered Autonomous)

Four Year B.A. Degree Program in Geography

(Faculty of Science)

CBCS Syllabus

SYBA (Geography) Semester III

For Department of Geography

Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati

Choice Based Credit System Syllabus (2024 Pattern)

(As Per NEP 2020)

To be implemented from Academic Year 2025-2026

Preamble

AES's Tuljaram Chaturchand College has made the decision to change the syllabus of across various faculties from June, 2024 by incorporating the guidelines and provisions outlined in the National Education Policy (NEP), 2020. The NEP envisions making education more holistic and effective and to lay emphasis on the integration of general (academic) education, vocational education and experiential learning. The NEP introduces holistic and multidisciplinary education that would help to develop intellectual, scientific, social, physical, emotional, ethical and moral capacities of the students. The NEP 2020 envisages flexible curricular structures and learning based outcome approach for the development of the students. By establishing a nationally accepted and internationally comparable credit structure and courses framework, the NEP 2020 aims to promote educational excellence, facilitate seamless academic mobility, and enhance the global competitiveness of Indian students. It fosters a system where educational achievements can be recognized and valued not only within the country but also in the international arena, expanding opportunities and opening doors for students to pursue their aspirations on a global scale.

In response to the rapid advancements in science and technology and the evolving approaches in various domains of Geography and related subjects, the Board of Studies in Geography at Tuljaram Chaturchand College, Baramati - Pune, has developed the curriculum for the Geography, which goes beyond traditional academic boundaries. The syllabus is aligned with the NEP 2020 guidelines to ensure that students receive an education that prepares them for the challenges and opportunities of the 21st century. This syllabus has been designed under the framework of the Choice Based Credit System (CBCS), taking into consideration the guidelines set forth by the National Education Policy (NEP) 2020, LOCF (UGC), NCrF, NHEQF, Prof. R.D. Kulkarni's Report, Government of Maharashtra's General Resolution dated 20th April and 16th May 2023, and the Circular issued by SPPU, Pune on 31st May 2023.

A Geography degree equips students with the knowledge and skills necessary for a diverse range of fulfilling career paths. Graduates in Geography find opportunities in various fields, including urban planning, GIS analysis, disaster preparedness, teaching, environmental science, remote sensing analysis, transportation planning, demography, hydrology, and many other domains. Throughout their three-year degree program, students explore the spatial organization of both natural and human phenomena across different scales, from local to global. They learn to identify and analyze features on the Earth's surface, understand their

spatial patterns, and compare similarities and differences between different places. The curriculum also delves into the intricate relationship between humans and the environment, examining how physical and cultural landscapes evolve over time. Students specializing in physical geography gain an understanding of the processes that shape Earth's climate, create landforms, and influence the distribution of plant and animal life. By acquiring these comprehensive skills and knowledge, graduates are well-prepared to embark on rewarding careers that contribute to a better understanding of our world and address the challenges of our ever-changing planet.

Overall, revising the geography syllabus in accordance with the NEP 2020 ensures that students receive an education that is relevant, comprehensive, and prepares them to navigate the dynamic and interconnected world of today. It equips them with the knowledge, skills, and competencies needed to contribute meaningfully to society and pursue their academic and professional goals in a rapidly changing global landscape.

Programme Specific Outcomes POS

1. Ability of Problem Analysis: Student will be able to analyse the problems of physical as well as cultural environments of both rural and urban areas. Moreover, they will try to find out the possible measures to solve those problems.
2. Conduct Social Survey Project: They will be eligible for conducting social survey project, which is necessity for the assessment of development status of a particular group or section of the society.
3. Individual and Teamwork: Works effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
4. Application of Modern Instruments: Students will be able to apply various modern instruments for data collection and field survey.
5. Application of GIS and Modern Geographical Map Making Techniques: Students will learn how to prepare map based on GIS by using the modern geographical map-making techniques.
6. Critical Thinking: Students will be able to understand and solve the critical problems of physical and cultural environment.
7. Development of Observation Power: As a student of Geography, they will be capable to develop their observation power through field experience and in future, they will be able to identify the socio-environmental problems of a locality.
8. Development of Communication Skill and Interaction Power : After the completion of the course, they will be efficient in their communication skill as well as power of social interaction.
9. Effective Citizenship: Demonstrate empathetic social concern and equity-centre national development and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
10. Enhancement of the Ability of Management: Demonstrate knowledge and understanding of the management principles and apply these to their own work, as a member and leader in a team, to manage projects. They will perform effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
11. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions and accept responsibility for them.
12. Understand Environmental Ethics and Sustainability: Understand the impact of the acquired knowledge in societal and environmental contexts and demonstrate the knowledge of need for sustainable development.
13. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context social, environmental and technological changes.
14. Presentation Skill: Students are being able to understand and write effective reports and design credentials, make effective demonstrations, give and receive clear instruction.

Anekant Education Society's

Tuljaram Chaturchand College, Baramati

(Empowered Autonomous)

Board of Studies (BOS) in Geography

Academic Year 2025-2026 to 2027-2028

Sr. No.	Name	Designation
1	Dr. Arun S. Magar Head & Associate Professor, Department of Geography, T. C. College, Baramati	Chairman
2	Dr. Asaram S. Jadhav Associate Professor, Department of Geography, T. C. College, Baramati	Member
3	Mr. Vinayak D. Chavan Assistant Professor, Department of Geography, T. C. College, Baramati	Member
4	Ms. Sayali B. Pawar Assistant Professor, Department of Geography, T. C. College, Baramati	Member
5	Ms. Aisha S. Tamboli Assistant Professor, Department of Geography, T. C. College, Baramati	Member
6	Ms. Priyanka S. Pawar Assistant Professor, Department of Geography, T. C. College, Baramati	Member
7	Dr. Savita Kulkarni Head & Associate Professor, Department of Geography, Annasaheb Magar College, Hadapsar, Pune	Vice-Chancellor Nominee, Subject Expert, SPPU Pune
8	Dr. Tukaram P. Shinde Head & Associate Professor, Department of Geography, Mudhoji College, Phaltan	Subject Expert from Outside the Parent University
9	Dr. Prashant Patil Associate Professor, Department of Geography, Shivaji University, Kolhapur	Subject Expert from Outside the Parent University
10	Dr. Shrikant Gabale Managing Director, Graphias Solutions Pvt. Ltd., Pune	Representative from Industry/Corporate Sector/Allied Areas
11	Ms. Raje Akshata GIS Expert	Member of the College Alumni
12	Ms. Kale Pranita Sanjay SYBA Geography Student	UG Student
13	Ms. Tilekar Rucha Sachin M.A./M.Sc. Geography I Student	PG Student

Credit Distribution Structure for S.Y.B.A. (Geography)

Level	Semes	Major		Minor	OE	VSC, SEC, (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr/Sem	Degree/Cum.Cr.
		Mandatory	**Electives**							
5.0	III	**GEO-201-MRM** Fundamentals of Geomorphology [2T] **GEO-202-MRM** Fundamentals of Oceanography [2T] **GEO-203-MRM** Practical in Scale & Projection [2 P]	--	**GEO-206-MN** Geography of India [2 T] **GEO-207-MN** Practical in Cartographic Techniques for [2 P]	**GEO-208-OE** Disaster Management [2 T]	**GEO-204-VSC** Fundamentals of Remote Sensing [2 T]	**AEC** MAR/HIN/SAN-210-AEC [2 T] **GEO-209-IKS** Ancient Indian Geographical Thoughts	**GEO-205-FP** (2 P) **CC** (Yoga/PES /CUL/NSS/ NCC-211-CC [2 T]	22	UG 44 credits
5.0	IV	**GEO-251-MRM** Fundamentals of Population Geography [2T] **GEO-252-MRM** Fundamentals of Settlement Geography [2T] **GEO-253-MRM** Practical in Statistical Techniques in Geography [2P]	--	**GEO-256-MN** Geography of Maharashtra [2T] **GEO-257-MN** Practical in Land Measurement [2 P]	**GEO-258-OE** Practical in Disaster Management [2 P]	**GEO-254-VSC** Practical in Remote Sensing [2P] **GEO-259-SEC** Practical in Cartographic Techniques [2 P]	**AEC** MAR/HIN/SAN-260-AEC [2 T]	**CC** (Yoga/PES /CUL/NSS/ NCC [2 T] **GEO-255-CEP** Community Engagement Project (2P)	22	

Course and Credit Structure for F.Y.B.A. Geography (2024 Pattern)

Sem	Course Type	Course Code	Course Title	Theory / Practical	Credits
I	DSC-I (General)	-101-GEN	-------	Theory	04
	DSC-II (General)	-101-GEN	-------	Theory	04
	DSC-III (General)	GEO-101-GEN	Physical Geography	Theory	02
		GEO-102-GEN	Practical in Physical Geography	Practical	02
	Open Elective (OE)	GEO-103-OE	Tourism Geography	Theory	02
	Skill Enhancement Course (SEC)	GEO-104-SEC	Fundamentals of Google Map	Theory	02
	Ability Enhancement Course (AEC)	ENG-104-AEC	-----	Theory	02
	Value Education Course (VEC)	GEO-105-VEC	Environment Education	Theory	02
	Generic Indian Knowledge System (GIKS)	GEN-106-IKS	------	Theory	02
				Total Credits	**22**
II	DSC-I (General)	-151-GEN	-----	Theory	04
	DSC-II (General)	-151-GEN	-----	Theory	04
	DSC-III (General)	GEO-151-GEN	Human Geography	Theory	02
		GEO-152-GEN	Practical in Human Geography	Practical	02
	Open Elective (OE)	GEO-153-OE	Practical in Tourism Geography	Practical	02
	Skill Enhancement Course (SEC)	GEO-154-SEC	Practical in Google Earth	Practical	02
	Ability Enhancement Course (AEC)	ENG-154-AEC	----	Theory	02
	Value Education Course (VEC)	GEO-155-VEC	Environmental Awareness	Theory	02
	CC	YOG/PES/CUL/NSS/NCC-156-CC	To be selected from the CC Basket	Theory	02
				Total Credits	**22**
				Grand Total Sem I + Sem II	**44**

Course and Credit Structure for S.Y.B.A. Geography (2024 Pattern)

Sem.	Course Type	Course Code	Course Title	Theory/ Practical	Credits
III	Major Mandatory	GEO-201-MRM	Fundamentals of Geomorphology	Theory	02
	Major Mandatory	GEO-202-MRM	Fundamentals of Oceanography	Theory	02
	Major Mandatory	GEO-203-MRM	Practical in Scale & Projection	Practical	02
	Vocational Skill Course (VSC)	GEO-204-VSC	Fundamentals of Remote Sensing	Theory	02
	Field Project(FP)	GEO-205-FP	Field Project	Practical	02
	Minor (MN)	GEO-206-MN	Geography of India	Theory	02
	Minor (MN)	GEO-207-MN	Practical in Cartographic Techniques	Practical	02
	Open Elective (OE)	GEO-208-OE	Disaster Management	Theory	02
	Subject Specific IKS	GEO-209-IKS	Ancient Indian Geographical Thoughts	Theory	02
	Ability Enhancement Course (AEC)	MAR-210-AEC		Theory	02
		HIN-210-AEC			
		SAN-210-AEC			
	Co-curricular Course (CC)	YOG/PES/CUL/NSS/NCC-211-CC	To be selected from the Basket	Theory	02
	Total Credits Sem-I				**22**
IV	Major Mandatory	GEO-251-MRM	Fundamentals of Population Geography	Theory	02
	Major Mandatory	GEO-252-MRM	Fundamentals of Settlement Geography	Theory	02
	Major Mandatory	GEO-253-MRM	Practical in Statistical Techniques in Geography	Practical	02
	Vocational Skill Course (VSC)	GEO254VSC	Practical in Remote Sensing	Practical	02
	Community Engagement Project (CEP)	GEO-255-CEP	Community Engagement Project	Practical	02
	Minor	GEO-256-MN	Geography of Maharashtra	Theory	02
	Minor	GEO-257-MN	Practical in Land Measurement Techniques	Practical	02
	Open Elective (OE)	GEO-258-OE	Practical in Disaster Management	Practical	02
	Skill Enhancement Course (SEC)	GEO-259-SEC	Practical in Cartographic Techniques	Practical	02
	Ability Enhancement Course (AEC)	MAR-260-AEC		Theory	02
		HIN-260-AEC			
		SAN-260-AEC			
	Co-curricular Course (CC)	YOG/PES/CUL/NSS/NCC-261-CC	To be selected from the Basket	Theory	02
	Total Credits				22
	Grand Total Sem III + Sem IV				**44**

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Major Mandatory (Theory)
Course Code	: GEO-201-MRM
Course Title	: Fundamentals of Geomorphology
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To describe the geological scale and its significance in understanding landforms.
2. To explain the internal structure of the Earth and its role in geomorphic processes.
3. To analyze the Theory of Plate Tectonics and its implications for landscape evolution.
4. To recognize the types of weathering and their associated landforms.
5. To understand the fundamental concepts of fluvial and coastal processes, including erosion, transportation, and deposition.
6. To identify and describe the major fluvial and coastal landforms resulting from these processes.
7. To evaluate the importance of fluvial and coastal processes in shaping landscapes and influencing human activities.

Course Outcomes:

By the end of the course, students will be able to:

CO1. Demonstrate an understanding of the geological scale and its application in geomorphological studies.

CO2. Explain the internal structure of the Earth and its relevance to landform development.

CO3. Analyse and interpret the Theory of Plate Tectonics in relation to landscape formation.

CO4. Identify different types of weathering and recognize their respective landforms.

CO5. Demonstrate a comprehension of the basic principles underlying fluvial and coastal processes

CO6. Recognize and differentiate between various fluvial and coastal landforms.

CO7. Analyze and discuss the significance of fluvial and coastal processes in landform evolution and societal contexts.

Topics and Learning Points

UNIT 1: Introduction to Geomorphology **Teaching Hours**

1.1 Definition, nature, and scope of geomorphology **10**

1.2 Branches of geomorphology

1.3 Geological scale

1.4 Internal structure of the Earth

1.5 Theory of Plate Tectonics

UNIT 2: Weathering and Mass Movement **10**

2.1 Definition and basic concepts

2.2 Weathering: types and related landforms

2.3 Mass movement: types and related landforms

2.4 Importance of weathering and mass movements

UNIT 3: Fluvial and Coastal Processes **10**

3.1 Definition and basic concepts

3.2 Process of erosion, transportation, and deposition

3.3 Fluvial landforms

3.4 Coastal landforms

3.5 Importance of fluvial and coastal processes

References:

1. Bloom, A.L. (2012). Geomorphology: A Systematic Analysis of Late Cenozoic Landforms. Prentice-Hall of India, New Delhi.

2. Chorley, R.J., Schumm, S.A., &Sugden, D.E. (1984). Geomorphology. Methuen, London.

3. Gregory, K.J., & Goudie, A.S. (2014). The SAGE Handbook of Geomorphology. SAGE, London.

4. Holmes. (1944). Principles of Physical Geology. Thomas Nelson and Sons Ltd, London.

5. Huggett, R.J. (2008). Fundamentals of Geomorphology. Routledge, London and New York.

6. Goudie, A.S. (2004). Encyclopedia of Geomorphology. Routledge, London and New York.

7. Kale, V.S., & Gupta, A. (2010). Introduction to Geomorphology. Universities Press, Hyderabad.

8. Migon, P. (2010). Geomorphological Landscapes of the World. Springer, London/New York.

Mapping of Program Outcomes with Course Outcomes

Weightage: 0 = No relation, 1 = Weak relation, 2 = Moderate relation, 3 = Strong relation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	2	2	1	1	1	1	1
CO2	3	2	1	2	2	2	1	1	1	1
CO3	3	2	1	3	2	3	1	1	1	1
CO4	3	2	1	2	3	3	1	1	1	1
CO5	3	2	1	2	3	2	1	1	1	1
CO6	2	2	1	2	3	2	2	1	1	1
CO7	2	2	1	2	3	2	2	1	1	1

Justification for Ratings

PO1 (Critical and Creative Thinking)

CO1, CO2, CO3, CO4, and CO5 involve analyzing, interpreting, and critically assessing geomorphological processes, plate tectonics, and landform development. CO6 and CO7 require applying analytical skills to understand weathering, mass movements, and fluvial/coastal processes.

PO2 (Communication Skill)

CO1 and CO2 involve effectively communicating geomorphological concepts and processes. CO3 to CO7 require presenting and explaining findings related to landform development, tectonics, and environmental dynamics clearly and systematically.

PO3 (Multicultural Competence)

All COs contribute to understanding global geomorphological processes and environmental dynamics, fostering awareness of diverse geological and environmental conditions across regions.

PO4 (Research Skills)

CO3 involves detailed analysis of plate tectonics and internal Earth structure, requiring strong research skills. CO1, CO2, CO4, CO5, CO6, and CO7 engage students in investigating, analyzing, and interpreting geomorphological phenomena, fostering inquiry-based learning.

PO5 (Environmental Awareness)

CO4, CO5, CO6, and CO7 emphasize understanding environmental processes such as weathering, erosion, and mass movements, enhancing environmental awareness. CO1, CO2, and CO3 build foundational knowledge about the Earth's systems and landforms.

PO6 (Problem-solving Abilities)
CO4 involves analyzing and interpreting geomorphological factors, fostering problem-solving skills. CO3, CO5, CO6, and CO7 encourage understanding complex interactions between geomorphic processes and environmental changes.

PO7 (Collaboration and Teamwork)
CO6 and CO7 require collaboration in studying weathering, mass movements, and fluvial/coastal processes. CO1 to CO5 may involve group discussions and cooperative analysis of geomorphological concepts.

PO8 (Value Inculcation)
All COs promote value inculcation by fostering an understanding of geomorphological processes and their implications for sustainable environmental practices, encouraging ethical thinking about land use and environmental management.

PO9 (Digital and Technological Skills)
All COs involve the use of digital tools such as GIS, remote sensing, and geomorphological models, promoting familiarity with technology and enhancing students' skills in data interpretation and analysis.

PO10 (Community Engagement and Service)
All COs contribute to enhancing awareness of geomorphological challenges, enabling students to engage in community-based solutions related to environmental management, disaster mitigation, and sustainable development.

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Major Mandatory (Theory)
Course Code	: GEO-202-MRM
Course Title	: Fundamentals of Oceanography
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To understand the basic knowledge of Oceanography.
2. To study coastal geomorphology by focusing on how coastal regions are formed.
3. To study processes of waves, tides, and streams go through to create boulders, coral
4. To understand importance of coastal zone with future resources approach.
5. To know the geological, physical, chemical and biological features and process that affect the surface of the ocean.
6. To differentiate between underwater formation, sea water formations, sea water composition and qualities.
7. To develop an appreciation for the diversity and importance of life in the ocean.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Develop a foundational understanding of the basic concepts and principles of oceanography.

CO2: Analyze coastal geomorphology by examining the formation and evolution of coastal regions.

CO3: Investigate the processes of waves, tides, and currents that contribute to the formation of boulders, coral reefs, and other coastal features.

CO4: Assess the importance of coastal zones with a focus on their potential as future resource hubs.

CO5: Understand the geological, physical, chemical, and biological features and processes that influence the ocean's surface.

CO6: Differentiate between underwater formations, seawater composition, and the qualities of marine environments.

CO7: Cultivate an appreciation for the diversity and ecological importance of marine life.

Topics and Learning Points

UNIT 1: Introduction to Oceanography **Teaching Hours**

1.1 Definition and Meaning of Oceanography **10**

1.2 Principles, Nature, and Scope of Oceanography

1.3 Age and Origin of Oceans

UNIT 2: Ocean Waves and Tides **10**

2.1 Definition and Terms

2.2 Wave Theories

2.3 Classification of Waves and Tides

2.4 Tidal Currents and Rip Currents

UNIT 3: The Ocean **10**

3.1 Continental Margin: Continental Shelves and Slopes

3.2 Oceanic Ridges and Rises

3.3 Abyssal Plains and Oceanic Trenches

3.4 Coral Reefs and Atolls

References:

1. Basu, S. K. (Ed.). (2003). Handbook of Oceanography. Global Vision, Delhi.
2. Davis, R. A. (1972). Oceanography. Addition Wesley Publishing Co.
3. Garrison, T. (1999). Oceanography. Brooks/Cole Wadsworth, New York.
4. Garrison, T. (2004). Essentials of Oceanography. Thompson, Australia.
5. Gross, M. G. (1982). Oceanography. Prentice Hall, Inc., New Jersey.
6. King, C. A. M. (1962). Oceanography for Geographers (Ed.). Edward Arnold.
7. Sharma, &Vatal. (1962). Oceanography for Geographers. Chaitanya Publishing House, Allahabad.
8. Thurman, H. V. (1985). Introductory Oceanography. Bell & Howell Co., London.
9. Weisberg, J., & Howard, P. (1974). Introductory Oceanography. McGraw Hill, Kogakusha, Tokyo.

Mapping of Program Outcomes (PO) with Course Outcomes (CO)

0 = No relation, 1 = Weak relation, 2 = Moderate relation, 3 = Strong relation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	2	2	1	1	1	1	1
CO2	3	2	1	2	2	2	1	1	1	1
CO3	3	2	1	3	2	3	1	1	1	1
CO4	3	2	1	2	3	3	1	1	1	1
CO5	3	2	1	2	3	2	1	1	1	1
CO6	2	2	1	2	3	2	2	1	1	1
CO7	2	2	1	2	3	2	2	1	1	1

Justification for Ratings

PO1 (Critical and Creative Thinking):

CO1, CO2, CO3, and CO4 demand a strong foundational grasp and analytical approach to understand basic concepts, coastal geomorphology, and dynamic ocean processes.

CO5, CO6, and CO7 also require analytical reasoning, albeit at a slightly lower intensity, to interpret complex geological and environmental data.

PO2 (Communication Skills):

Effective communication is essential across all COs—from presenting fundamental concepts (CO1) and coastal analysis (CO2) to discussing complex processes (CO3–CO7).

PO3 (Multicultural Competence):

While less direct, all COs benefit from an understanding of diverse global oceanic phenomena and coastal environments.

PO4 (Research Skills):

CO3 (investigating wave, tide, and current processes) and CO2 (analyzing coastal geomorphology) require significant research, as do CO1, CO4, CO5, CO6, and CO7 to varying extents.

PO5 (Environmental Awareness):

A strong emphasis is placed on understanding and preserving marine and coastal ecosystems (CO4, CO5, CO6, and CO7), while the other COs build the context for this awareness.

PO6 (Problem-solving Abilities):

CO3, CO4, CO5, CO6, and CO7 involve identifying and solving complex issues related to ocean dynamics and coastal resource management.

PO7 (Collaboration and Teamwork):

CO6 and CO7 particularly encourage group-based evaluation of marine environments, whereas the other outcomes may involve collaborative projects or discussions.

PO8 (Value Inculcation):

All COs are designed to instill a sense of responsibility and ethical consideration towards the marine environment.

PO9 (Digital and Technological Skills):

Digital tools and data analysis play a role in all COs, from modeling oceanographic processes to mapping coastal regions.

PO10 (Community Engagement and Service):

Understanding oceanography equips students to contribute to community-based environmental initiatives and sustainable practices, a common thread across all COs.

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Major Mandatory (Practical)
Course Code	: GEO-203-MRM
Course Title	: Practical in Scale and Projection
No. of Credits	: 02
No. of Teaching Hours	: 60

Course Objectives:

1. To enable students to understand definitions, elements, classification, and practical uses of maps.
2. To develop students' awareness of different types of map scales.
3. To equip students with the ability to convert map scales between metric and British measurement systems.
4. To train students to apply various projections and cartographic techniques effectively.
5. To acquaint students with basic statistical data relevant to geographic studies.
6. To provide students with an understanding of the principles of surveying, its importance, and its utility in geographical study.
7. To enable students to justify the selection of a map projection for specific mapping projects based on criteria such as accuracy, scale, and audience.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Interpret and understand different types of map scales, including verbal, graphic, and fractional scales.

CO2: Calculate scale conversions accurately to represent real-world distances on maps.

CO3: Understand the concept of map projection and its application in cartography.

CO4: Identify and select appropriate map projections based on specific mapping requirements and objectives.

CO5: Evaluate the impact of distortion in map projections on various map properties such as area, shape, distance, and direction.

CO6: Analyze the advantages and limitations of different map projections in preserving spatial relationships.

CO7: Demonstrate proficiency in using GIS software to adjust map scales and transform projections, and convert spatial data between different coordinate systems and map projections accurately.

Topics and Learning Points

Unit 1: Map Scales **Teaching Hours**

1.1 Map Scale: Definition and Types **20**

1.2 Conversion of Verbal Scale to Numeric and Vice-Versa

1.3 Construction of Simple Graphical Scale

1.4 Construction of Comparative Graphical Scale

Unit 2: Introduction to Map Projection **10**

2.1 Definition and Need of Map Projection

2.2 Basic Concepts of Projection: Latitude, Longitude, Parallel of Latitude

2.3 Meridian of Longitude, Prime Meridian, Equator, Direction

2.4 Calculation of Time Based on Meridian and GMT

2.5 Classification of Map Projections

Unit 3: Construction of Map Projection **30**

3.1 Zenithal Polar Gnomonic Projection

3.2 Conical Projection with One Standard Parallel

3.3 Mercator's Projection

3.4 Mollweide's Projection

3.5 Universal Transverse Mercator (UTM) Projection

References:

1. Singh Lehraj, (1973):Map Work and Practical Geography, Central Book Depot Allahabad
2. D.Y. Ahirrao and E. K. Karanjkhele, (2002) : Pratyakshik Bhugol, Sudarshan –Nashik
3. P.G.Saptarshi andS.R.Jog, Statistical Methods
4. S.N. Karlekar, (2008):Statistical Methods, Diamond – Pune
5. T.P. Kanet karand S.V. Kulkarni, (1986): Survey in ground Leveling, Pune Vidyrthi Griha Prakashan –Pune
6. Arjun Kumbhare, Practical Geography
7. Pijushkanti Saha & Partha Basu. (2007), 'Advanced Practical Geography', Books and Allied (P) Ltd, Kolkata

Mapping of Program Outcomes with Course Outcomes

1 = Weak or low relation, 2 = Moderate or partial relation, 3 = Strong or direct relation

(COs)	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	1	2	1	1	1	1	1	1
CO 2	3	2	1	2	1	2	1	1	1	1
CO 3	2	1	1	2	1	1	1	1	1	1
CO 4	3	2	1	3	2	3	1	1	2	1
CO 5	2	1	1	2	1	1	1	1	1	1
CO 6	3	2	1	3	2	2	2	1	2	1
CO 7	3	2	2	3	2	3	2	2	3	2

Justification for the Mapping

PO1 (Critical and Creative Thinking):

CO1, CO2, CO3, CO4, CO5, CO6, and CO7 encourage critical thinking by requiring students to analyze map types, scales, and projections, evaluate the impact of distortion, and creatively apply GIS tools for spatial data transformation.

PO2 (Communication Skill):

CO1, CO2, CO3, CO4, CO5, CO6, and CO7 enhance communication by requiring students to explain map concepts, articulate projection choices, and convey the effects of distortion, along with demonstrating GIS operations effectively.

PO3 (Multicultural Competence):

CO1, CO2, CO3, CO4, CO5, CO6, and CO7 promote multicultural competence by encouraging understanding of different global mapping systems, diverse geographic contexts, and the application of projection methods across regions.

PO4 (Research Skills):

CO1, CO2, CO3, CO4, CO5, CO6, and CO7 foster research skills by requiring students to investigate cartographic techniques, analyze projection types, assess distortion impacts, and apply GIS technologies in spatial data management.

PO5 (Environmental Awareness):

CO1, CO2, CO3, CO4, CO5, CO6, and CO7 instill environmental awareness by highlighting the importance of accurate map projections and scales in representing natural phenomena and analyzing environmental data effectively.

PO6 (Problem-solving Abilities):

CO2, CO4, CO5, CO6, and CO7 involve identifying and solving complex spatial problems such as accurate scale conversions, selecting appropriate projections, minimizing distortion impacts, and applying GIS software to transform spatial data.

PO7 (Collaboration and Teamwork):

CO4, CO6, and CO7 encourage teamwork by promoting group-based evaluation of projections, collaborative problem-solving in mapping tasks, and applying GIS tools for collective data analysis.

PO8 (Value Inculcation):

All COs are designed to instill ethical responsibility by emphasizing the importance of accurate spatial representation, reducing distortion, and maintaining integrity in cartographic practices.

PO9 (Digital and Technological Skills):

CO4, CO6, and CO7 emphasize the use of digital tools such as GIS software for adjusting scales, transforming projections, and converting spatial data between different coordinate systems.

PO10 (Community Engagement and Service):

CO7 promotes community engagement by encouraging the use of GIS technologies to address real-world mapping challenges, ensuring accurate spatial representation for societal benefit.

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Vocational Skill Course (Theory)
Course Code	: GEO-204-VSC
Course Title	: Fundamentals of Remote Sensing
No.of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To understand the fundamental principles of remote sensing and its application in various fields.
2. To explore the historical development of remote sensing technologies and their impact on modern practices
3. To differentiate between active and passive remote sensing techniques and understand their respective advantages and limitations.
4. To comprehend the concept of map scale and its significance in interpreting satellite images.
5. To familiarize students with different types of remote sensing and their applications.
6. To familiarize the students with remote sensing principles, EMR, types and platform.
7. To develop proficiency in image classification techniques and their importance in remote sensing and GIS applications.

Course Outcomes:

By the end of the course, students will be able to:

CO 1. Demonstrate a thorough understanding of the fundamental principles of remote sensing and its application in fields such as agriculture, forestry, geology.

CO 2. Evaluate the historical development of remote sensing technologies and their impact

on modern practices.

CO 3. Understand active and passive remote sensing techniques.

CO 4. Apply knowledge of map scale concepts to effectively interpret satellite Images.

CO 5. Analyze different types of remote sensing and their applications in remote sensing.

CO 6. Discuss the EMR, EMS and types of remote sensing.

CO7. Implement image classification techniques proficiently, understanding their significance in remote sensing**.**

Topics and Learning Points

Unit 1: Introduction to Remote Sensing **Teaching Hours**

1.1 Definition and Principle of Remote Sensing **08**

1.2 History of Remote Sensing

1.3 Types of Remote Sensing – Active & Passive

1.4 Advantages of Remote Sensing

Unit 2: Electromagnetic Energy **10**

2.1 Stages in Remote Sensing

2.2 Electromagnetic Radiation and Electromagnetic Spectrum

2.3 Interaction of EMR with Atmosphere – Scattering, Absorption

2.4 Interaction of EMR with Earth's Surface Features

Unit 3: Remote Sensing Platform and Sensors **12**

3.1 Types of Platforms – Ground-based, Air-based, Space-based

3.2 Orbit – Geo-stationery and Sun-synchronous

3.3 Sensor Types and Characteristics

References:

1. Anji Reddy, M. (2004). Geoinformatics for environmental management. B.S. Publications.
2. Chang, T. K. (2002). Geographic information systems. Tata McGraw Hill.
3. Heywood, I., Cornelius, S., & Crver, S. (2003). An introduction to geographical information systems. Pearson Education.
4. Sabins, F. F. Jr. (1987). Remote sensing: Principles and interpretation. W.H. Freeman & Co.
5. Campbell, J. B., Wynne, R. H., & Thomas, V. A. (2022). Introduction to remote sensing. Guilford Press.
6. Bunkin, A., & Voliak, K. (2001). Laser remote sensing of the ocean. John Wiley and Sons.
7. Gibson, P., & Power, C. H. (2000). Introductory remote sensing: Principles and concepts. Routledge.
8. Hayes, M. L. (1991). Introduction to remote sensing. Taylor and Francis Publication.
9. Curran, P. J. (1985). Principles of remote sensing. Longman.

Mapping of Program Outcomes with Course Outcomes

1 = Weak or low relation, 2 = Moderate or partial relation, 3 = Strong or direct relation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	2	2	1	1	1	2	1
CO2	3	2	1	2	1	1	1	1	1	1
CO3	3	2	1	2	2	2	1	1	1	1
CO4	2	2	1	3	2	3	1	1	1	1
CO5	3	2	1	2	3	2	1	1	1	1
CO6	3	2	1	2	3	2	2	1	1	1
CO7	2	2	1	2	3	2	2	1	1	1

Justification for the Mapping:

PO1 (Critical and Creative Thinking):

CO1, CO2, CO3, CO4, CO5, CO6, and CO7 encourage critical thinking by requiring students to analyze remote sensing principles, assess technological advancements, evaluate the impact of EMR, and creatively apply classification techniques for data interpretation.

PO2 (Communication Skills):

CO1, CO2, CO4, CO5, CO6, and CO7 enhance communication by requiring students to effectively explain remote sensing concepts, articulate classification techniques, and convey interpretations of satellite images and EMR interactions.

PO3 (Multicultural Competence):

CO1, CO2, CO4, CO5, and CO7 promote multicultural competence by encouraging the application of remote sensing in diverse geographic contexts, fostering understanding of global environmental changes, and applying classification techniques to various ecosystems.

PO4 (Research Skills):

CO4, CO5, and CO7 foster research skills by requiring students to analyze satellite images, investigate EMR interactions, assess classification techniques, and apply remote sensing concepts to solve complex problems in diverse environments.

PO5 (Environmental Awareness):

CO1, CO4, CO5, and CO6 instill environmental awareness by emphasizing the role of remote sensing in monitoring natural resources, analyzing ecological changes, and assessing the impact of human activities on the environment.

PO6 (Problem-solving Abilities):

CO2, CO3, CO5, CO6, and CO7 involve identifying and solving complex spatial problems such as assessing EMR interactions, selecting appropriate remote sensing methods, minimizing classification errors, and applying image interpretation techniques.

PO7 (Collaboration and Teamwork):

CO4, CO6, and CO7 encourage teamwork by promoting group-based tasks to analyze remote sensing data, collaboratively evaluate EMR interactions, and apply image classification techniques for better decision-making.

PO8 (Value Inculcation):

All COs are designed to instill ethical responsibility by emphasizing the importance of accurate environmental data representation, promoting sustainable practices, and ensuring integrity in remote sensing applications.

PO9 (Digital and Technological Skills):

CO4, CO6, and CO7 emphasize the use of advanced digital tools such as remote sensing software for image classification, EMR analysis, and spatial data interpretation to develop technical proficiency.

PO10 (Community Engagement and Service):

CO1, CO5, and CO7 promote community engagement by encouraging the use of remote sensing technologies to address real-world environmental challenges, contributing to sustainable development and disaster management.

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Project (Practical)
Course Code	: GEO-205-FP
Course Title	: Field Project
No. of Credits	: 02
No. of Teaching Hours	: 60

Course Objectives:

1. To develop students' ability to design and implement effective research questionnaires for community-based studies.
2. To enhance students' skills in collecting and analyzing socio-economic and environmental data.
3. To foster critical thinking and problem-solving through real-world geographical research.
4. To deepen understanding of the relationship between human activities and geographical factors.
5. To promote active engagement with local communities to address geographical issues.
6. To build students' competence in synthesizing and presenting research findings.
7. To prepare students for advanced academic research or professional roles in geography-related fields.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Demonstrate the ability to design and implement effective research questionnaires for community-based studies.

CO2: Exhibit enhanced skills in collecting and analyzing socio-economic and environmental data.

CO3: Apply critical thinking and problem-solving skills in conducting real-world geographical research.

CO4: Display a deeper understanding of the relationship between human activities and geographical factors.

CO5: Actively engage with local communities to address and resolve geographical issues.

CO6: Demonstrate competence in synthesizing and presenting research findings clearly and effectively.

CO7: Prepare for advanced academic research or professional roles in geography-related fields.

SOP for the Filed Project

As per the NEP-2020 credit and course structure, students in UG programs are required to complete a two-credit Field Project in SYBA Semester III to be eligible for the award of a B.A. degree. To meet this requirement, our Board of Studies has prepared a Standard Operating Procedure (SOP) and format for conducting the Field Project. The detailed SOPs are provided below.

1. **Preparation of SOP and Course Material:**

The Board of Studies (BOS) will prepare the SOP, project format, and curriculum for the Field Project coursework.

2. **Notification to Students:**

The department will issue a notice instructing students to attend the coursework for the Field Project.

3. **Conducting Coursework:**

The department will conduct the necessary coursework to prepare students for undertaking the Field Project.

4. **Application for Guide Allocation:**

Groups of three students will submit an application in the prescribed format to the HOD for the allocation of a Field Project guide.

5. **Guide Allocation:**

A departmental committee will allocate guides to students in accordance with the department's rules and policies.

6. **Publication of list of students and guide:**

The list of student groups and their allotted guides will be published.

7. **Topic Finalization:**

Students will meet with their assigned guide to finalize the topic of their Field Project.

8. **Questionnaire Development:**

Students will prepare a questionnaire under the guidance of their Field Project guide.

9. **Fieldwork and Data Collection:**

Students will conduct fieldwork/field surveys to collect relevant data and information.

10. **Data Analysis and Presentation:**

Students will analyze and present the collected data.

11. **Project Preparation:**

Students will prepare the Field Project report in the prescribed format provided by the department, under the guidance of their assigned guide.

12. **Assessment and Evaluation:**

The Field Project will be assessed and evaluated according to the guidelines provided by the exam department.

13. **Inclusion of Geo-tagged Photographs:**

The Field Project must include geo-tagged photographs of the fieldwork/survey.

14. **Inclusion of Study Area Map:**

The Field Project should contain a map of the study area.

15. **Project Length:**

The Field Project report should be between 20 to 25 pages

Topics and Learning Points

Unit 1: Planning and Preparation for Field Work **Teaching Hours**

1.1 Defining the Fieldwork Topic **15**

1.2 Scope of the Study Area

1.3 Identifying Key Research Questions for Field Study

1.4 Understanding the Fieldwork Objectives

1.5 Ethical Considerations in Field Work

1.6 Creating a Fieldwork Plan

Unit 2: Fieldwork Data Collection **25**

2.1 Selecting the Fieldwork Methods (Surveys, Interviews, Observations)

2.2 Collecting Primary Data from the Field

2.3 Recording and Organizing Field Data (Photographs, Maps, Notes)

2.4 Handling Challenges in Data Collection

2.5 Post-Fieldwork Data Compilation and Preliminary Analysis

Unit 3: Fieldwork Report Preparation and Presentation **20**

3.1 Analyzing Field Data (Quantitative and Qualitative Methods)

3.2 Structuring the Fieldwork Report

3.3 Writing the Introduction and Study Area Description

3.4 Formulating Objectives and Hypothesis

3.5 Writing the Methodology and Data Analysis Sections

3.6 Discussing Results and Significance of Findings

3.7 Conclusion and Recommendations

3.8 Bibliography and References

3.9 Preparing for Oral Presentation of the Report

3.10 Submission of the Final Fieldwork Report

References:

1. Mukherjee, N. (2002). *Participatory Learning and Action with 100 Field Methods.* Concept Publishing, New Delhi.
2. Rao, P. S. (2006). *Research Methodology for Social Sciences.* Anmol Publications, New Delhi.
3. Kothari, C. R. (2004). *Research Methodology: Methods and Techniques.* New Age International Publishers, New Delhi.
4. Sundaram, K. V. (2007). *Geography Fieldwork and Techniques.* Concept Publishing, New Delhi.
5. Singh, R. L. (1994). *Elements of Practical Geography*. Kalyani Publishers, New Delhi.

Mapping of Program Outcomes with Course Outcomes

1 = Weak or low relation, 2 = Moderate or partial relation, 3 = Strong or direct relation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	2	3	2	2	3	2	3	2
CO2	3	2	2	3	3	3	2	2	3	2
CO3	3	2	2	3	2	3	2	2	3	2
CO4	3	2	2	2	3	3	2	2	2	3
CO5	2	3	3	2	3	2	3	2	2	3
CO6	3	3	2	3	2	3	2	2	3	2
CO7	3	2	2	3	2	3	2	2	3	2

Justification for the Mapping

PO1: Critical and Creative Thinking

All COs demonstrate a strong alignment with critical thinking (CO1, CO2, CO3, CO4). The design of questionnaires (CO1), analysis of socio-economic data (CO2), and application of problem-solving skills in research (CO3) require analytical and creative thought processes to assess real-world problems.

PO2: Communication Skills

Communication is integral to most COs, especially CO1 (designing questionnaires) and CO6 (presentation of research findings), where clear expression of complex data and ideas is essential. Engaging with communities (CO5) also requires strong verbal and written communication.

PO3: Multicultural Competence

CO5 (community engagement) and CO3 (understanding diverse socio-cultural impacts) directly engage with the values of multicultural competence, allowing students to work with and understand diverse groups and geographical contexts.

PO4: Research Skills

All COs, especially CO1, CO2, and CO6, focus on research skills. Designing questionnaires, collecting and analyzing data, and synthesizing findings require rigorous research methodologies, in line with PO4's focus on hypothesis testing, data interpretation, and project design.

PO5: Environmental Awareness

Environmental awareness is strongly linked to CO2 (collecting and analyzing environmental data) and CO4 (understanding human-geography relationships), where students study the impact of human activities on the environment and work towards sustainability.

PO6: Problem-solving Abilities

CO3 (critical thinking) and CO5 (engaging with communities to resolve issues) contribute to problem-solving abilities, as students identify geographical issues and propose solutions through innovative methods.

PO7: Collaboration and Teamwork

CO5 emphasizes teamwork through community engagement, where students collaborate with local populations to address geographical issues. CO1 (questionnaire design) and CO2 (data collection) also involve working in teams for effective outcomes.

PO8: Value Inculcation

Many COs, particularly CO5 (community engagement), focus on ethical engagement with communities and understanding the broader implications of geographical research on human well-being and environmental sustainability.

PO9: Digital and Technological Skills

CO1 (questionnaire design), CO6 (data presentation), and CO2 (data analysis) align with digital skills, as students utilize tools like GIS, data processing software, and digital platforms to conduct and present their research effectively.

PO10: Community Engagement and Service

CO5 directly engages with this PO by focusing on community-based studies and working with local populations to address geographical and environmental issues, fostering a sense of responsibility and service.

CBCS Syllabus as per NEP 2020 for S.Y.B.A Semester- III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Minor (Theory)
Course Code	: GEO-206-MN
Course Title	: Geography of India
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To understand the location, extent, and neighboring countries of India, highlighting their significance.
2. To gain knowledge of the physiographic divisions of India and their characteristics.
3. To analyze the drainage systems of India, differentiating between the Himalayan and Peninsular River systems.
4. To comprehend the climatic conditions of India and understand the mechanism of monsoon.
5. To explore the effects of climatic phenomena such as El-Nino and La-Nina on India's monsoon.
6. To develop critical thinking skills by evaluating the relationship between physiography, drainage, and climate in India.
7. To enhance research and analytical skills through understanding India's natural geography.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Demonstrate an understanding of India’s location, extent, and its relationship with neighboring countries.

CO2: Explain the physiographic divisions of India along with their characteristics and importance.

CO3: Analyze the drainage systems of India and identify the differences between the Himalayan and Peninsular river systems.

CO4: Explain the seasonal climatic variations in India and describe the origin and mechanism of the monsoon.

CO5: Assess the impacts of El-Nino and La-Nina on India's monsoon system.

CO6: Evaluate the interplay between physiography, drainage, and climate and their influence on India's geography.

CO7: Apply geographical knowledge and analytical skills for advanced research or professional roles in geography.

Topics and Learning Points

Unit 1: Location and Physiography of India	**Teaching Hours**
1.1 Location and Extent of India: Absolute and Relative	**12**
1.2 Neighboring Countries of India	
1.3 Physiographic Divisions of India	
1.4 Characteristics and Importance of Physiographic Divisions	
Unit 2: Drainage System	**10**
2.1 Meaning, Definition, and Concept of Drainage System	
2.2 The Himalayan River System	
2.3 The Peninsular River System	
Unit 3: Climate	**08**
3.1 Main Seasons and Associated Weather Conditions	
3.2 Monsoon: Origin and Mechanism	
3.3 El-Nino and La-Nina	

References:

1. Khullar, R. D. (2007). *India – A Comprehensive Geography*. Kalyani Publishers, New Delhi.
2. Aher, A. B., Chaodhari, A. P., & Chaodhari, Archna. (2015). *Regional Geography of India.* Prashant Publication, Jalgaon.
3. Khullar, D. R. (2006). *India – A Comprehensive Geography*. Kalyani Publishers, New Delhi.
4. Krishnan, M. S. (1968). *Geology of India and Burma.* 4th Edition. HigginBothams Private Ltd., Madras.
5. Nag, P., & Gupta, S. S. (1992). *Geography of India.* Concept Publishing Company, New Delhi.
6. Singh, R. L. (Ed.). (1971). *India – A Regional Geography.* National Geographical Society of India, Varanasi.

Mapping of Program Outcomes (POs) with Course Outcomes (COs)

1 = Weak or low relation, 2 = Moderate or partial relation, 3 = Strong or direct relation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	3	2	1	1	2	2	1
CO2	3	2	1	3	3	1	1	1	2	1
CO3	3	2	1	3	3	2	1	1	2	1
CO4	3	2	1	3	3	2	2	1	2	1
CO5	2	2	1	2	3	3	2	1	1	1
CO6	3	2	2	3	3	3	2	2	2	1
CO7	3	2	1	3	2	2	2	2	2	2

Justification for the Mapping

PO1: Critical and Creative Thinking

CO1, CO2, CO3, and CO6 demonstrate a strong relationship as they involve analysis and critical evaluation of India's geography, drainage systems, and climatic phenomena. Students are encouraged to think analytically, develop hypotheses, and apply critical thinking to geographical problems.

PO2: Communication Skills

CO1, CO6, and CO7 align with communication skills through the presentation of research findings and the ability to articulate complex geographical concepts effectively. Students develop skills in structuring reports, presenting data, and engaging in discussions that convey their understanding of India’s geographical diversity.

PO3: Multicultural Competence

CO1 promotes understanding of India's neighboring countries and their influence, fostering multicultural awareness. It equips students to appreciate cultural diversity, understand geopolitical dynamics, and enhance their competence in engaging with different communities.

PO4: Research Skills

CO2, CO3, and CO6 demonstrate research skills by analyzing India’s physiography, drainage, and climate and applying that knowledge to real-world scenarios. These

outcomes prepare students for conducting fieldwork, interpreting data, and producing well-structured research reports that reflect scientific rigor.

PO5: Environmental Awareness

CO4 and CO5 highlight environmental considerations by exploring monsoon mechanisms, El-Nino, La-Nina, and their environmental impacts. Students gain insights into sustainable resource management, ecological balance, and climate change adaptation strategies that are essential for informed decision-making.

PO6: Problem-solving Abilities

CO5 and CO6 promote problem-solving skills by assessing the relationship between geography and climate, encouraging innovative solutions. Students learn to identify geographical challenges and propose strategies that address community-specific environmental and socio-economic issues.

PO7: Collaboration and Teamwork

CO6 and CO7 encourage teamwork and collaboration by involving field-based projects and data synthesis. Through collaborative learning, students develop interpersonal skills and the ability to work effectively with diverse groups to achieve common objectives.

PO8: Value Inculcation

CO1, CO5, and CO7 focus on ethical engagement, environmental sustainability, and responsible citizenship. Students are encouraged to adopt ethical practices in fieldwork and research while addressing societal concerns with a sense of responsibility and empathy.

PO9: Digital and Technological Skills

CO6 involves the use of digital platforms, GIS, and data analysis techniques in research. Students develop technological proficiency, enabling them to handle spatial data, analyze geographic patterns, and visualize findings effectively.

PO10: Community Engagement and Service

CO5 and CO7 emphasize community-based research and engagement, fostering responsibility and service. Through active engagement with local communities, students gain practical exposure to real-world challenges and contribute to solutions that enhance community resilience.

CBCS Syllabus as per NEP 2020 for S.Y.B.A Semester- III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Minor (Practical)
Course Code	: GEO-207-MN
Course Title	: Practical in Cartographic Techniques
No. of Credits	: 02
No. of Teaching Hours	: 60

Course Objectives:

1. To introduce students to the fundamental concepts, types, and uses of maps.
2. To provide knowledge on map scale definitions and different types of scales.
3. To familiarize students with quantitative methods for representing data through graphs and charts.
4. To develop an understanding of qualitative methods used in geographic data representation.
5. To enhance students' ability to analyze and interpret data using various cartographic techniques.
6. To equip students with the skills needed to create and effectively utilize visual representations of data.
7. To encourage critical thinking and problem-solving through data interpretation and representation.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Demonstrate an understanding of the basic concepts, types, and applications of maps.

CO2: Apply knowledge of map scales and their types for accurate measurement and representation.

CO3: Utilize quantitative techniques such as line graphs, bar graphs, and pie charts to represent data effectively.

CO4: Apply qualitative techniques like symbol, dot, choropleth, isopleths, and flow diagrams in data representation.

CO5: Analyze and interpret geographic data using various cartographic methods.

CO6: Develop proficiency in presenting data through visual means, enabling clear and accurate communication of information.

CO7: Apply critical thinking skills to evaluate and choose appropriate methods for data representation and interpretation.

Topics and Learning Points

Unit 1: Map and Map Scale **Teaching Hours**

1.1 Map: Definitions and Elements **20**

1.2 Types of Maps

1.3 Uses of Maps

1.4 Map Scale: Definitions and Types

Unit 2: Quantitative Methods of Data Representation **20**

2.1 Simple and Multiple Line Graph

2.2 Simple, Multiple, and Compound Bar Graph

2.3 Pie Chart

Unit 3: Qualitative Methods of Data Representation **20**

3.1 Symbol Method

3.2 Dot Method

3.3 Choropleth Method

3.4 Isopleths Method

3.5 Flow Diagram

References:

1. Sharma, J. P. (2010). Prayogic Bhugol. Rastogi Publishers, Meerut.
2. Singh, R. L., & Singh, R. P. B. (1999). Elements of Practical Geography. Kalyani Publishers.
3. Slocum, T. A., McMaster, R. B., & Kessler, F. C. (2008). Thematic Cartography and Geovisualization (3rd Edition). Prentice Hall.
4. Tyner, J. A. (2010). Principles of Map Design. The Guilford Press.
5. Sarkar, A. (2015). Practical Geography: A Systematic Approach. Orient Black Swan Private Ltd., New Delhi.
6. Singh, R. L., & Dutta, P. K. (2012). Prayogatama Bhugol. Central Book Depot, Allahabad.
7. Ahirrao, Y., & Karanjkhele, E. K. (2002). Practical Geography. Sudarshan Publication, Nashik.
8. Saptarshi, P. G., & Jog, S. R. Statistical Methods.
9. Karlekar, S. N. (2008). Statistical Methods. Diamond Publication, Pune

Mapping of Program Outcomes (POs) with Course Outcomes (COs)

1 = Weak or low relation, 2 = Moderate or partial relation, 3 = Strong or direct relation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	2	1	1	1	2	2	1
CO2	2	2	1	3	1	1	1	1	2	1
CO3	3	2	1	3	2	2	2	1	3	2
CO4	3	2	1	3	2	2	2	1	3	2
CO5	3	3	2	3	3	3	3	2	3	2
CO6	3	3	2	2	2	3	2	2	3	3
CO7	3	2	2	2	3	3	2	2	2	3

Justification for the Mapping

PO1: Critical and Creative Thinking

CO1, CO3, CO4, and CO5 require critical thinking to analyze data and creatively use different cartographic techniques to visually represent complex information.

PO2: Communication Skills

CO2, CO6, and CO7 emphasize effective communication by teaching students to represent and interpret data clearly through graphs, charts, and maps.

PO3: Multicultural Competence

CO1 promotes understanding of various methods used globally for data representation, fostering cultural awareness and diversity in mapping techniques.

PO4: Research Skills

CO2, CO3, and CO5 focus on data collection, analysis, and visualization through different cartographic methods, enhancing research capabilities.

PO5: Environmental Awareness

CO5 and CO7 introduce students to geographic and environmental data representation, contributing to an understanding of sustainable development.

PO6: Problem-solving Abilities

CO3, CO5, and CO7 strengthen problem-solving abilities by encouraging students to select appropriate data representation techniques to address real-world geographic problems.

PO7: Collaboration and Teamwork

CO5 and CO6 emphasize collaborative work in field-based data collection and representation, promoting teamwork in problem-solving scenarios.

PO8: Value Inculcation

CO1, CO5, and CO7 foster ethical and responsible use of geographical data and promote ethical research practices.

PO9: Digital and Technological Skills

CO3, CO6, and CO7 align with digital skills by encouraging the use of digital tools and GIS techniques for data representation.

PO10: Community Engagement and Service

CO5 and CO7 promote active community engagement by encouraging the application of mapping techniques to address local issues effectively.

CBCS Syllabus as per NEP 2020 for S.Y.B.A Semester- III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Open Elective (Theory)
Course Code	: GEO-208-OE
Course Title	: Disaster Management
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To introduce students to the fundamental concepts of geography in relation to disaster management.
2. To understand the nature, causes, and impacts of disasters.
3. To explore the role of geography in disaster management, including hazard mapping, risk assessment, and emergency response planning.
4. To analyze the impacts of disasters on people and the environment and understand how geospatial technologies can be used to mitigate these impacts.
5. To examine the role of government agencies, NGOs, and communities in disaster management.
6. To understand the psychological and emotional impacts of disasters on individuals and communities.
7. To learn methods for assessing the risks associated with different types of disasters.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Understand the basic concepts of geography related to disaster management.

CO2: Analyze the relationship between physical geography and natural disasters.

CO3: Explore the impact of human activities on natural disasters.

CO4: Learn about local disaster and risk assessment.

CO5: Understand the role of geospatial technologies in disaster management.

CO6: Understand the role of government agencies, NGOs, and communities in disaster management.

CO7: Evaluate the importance of the ocean in life.

Topics and Learning Points

Unit 1: Introduction to Disaster Management and Geography **Teaching Hours**

1.1 Definition of Hazard and Disaster, Types of Disasters **10**

1.2 Introduction to Disaster Management Cycle

1.3 Role of Geography in Disaster Management

1.4 Global and Regional Trends in Disasters

Unit 2: Natural and Man-made Disasters **10**

2.1 Tectonic Hazards: Earthquake

2.2 Climatic Hazards: Cyclone, Floods, and Droughts

2.3 Geomorphic Hazards: Landslides and Avalanches

2.4 Human-Induced Hazards: Industrial Accidents, Oil Spills, and Nuclear Disasters

2.5 Global Warming and Climate Change

Unit 3: Government Agencies, NGOs, and Communities in Disaster Management **10**

3.1 Government Agencies in Disaster Management

3.2 NGOs in Disaster Management

3.3 Communities in Disaster Management

3.4 Students in Disaster Management

References:

1. Susan L. Cutter, David A. Johnston, and Christopher T. Emrich.
2. Saptarshi P. G., More J. C., Ugale V. R. (2009), Geography and Natural Hazard, Diamond, Pune.
3. Savindra Singh (2000), Environmental Geography, Prayag Pustak Bhavan, Allahabad.
4. Singh, S. (1998), Geomorphology, Prayag Pustak Bhavan, Allahabad.
5. A.H. Choudhar, P. N. Salve, S. M. Kadam, R. H. Choudhar, V. C. Ithape (2010), Contemporary Issues and Geography, Atharva, Pune.

Mapping of Program Outcomes (POs) with Course Outcomes (COs)

1 = Weak or low relation, 2 = Moderate or partial relation, 3 = Strong or direct relation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	1	1	1	1	1	1	1	1
CO2	1	1	2	1	1	1	1	1	1	1
CO3	1	3	2	1	1	1	3	1	1	1
CO4	3	1	1	2	1	2	1	1	1	1
CO5	1	1	1	1	1	1	1	1	3	1
CO6	1	1	3	1	1	2	1	1	1	2
CO7	2	1	1	1	1	1	1	1	1	1

Justification for the Mapping

PO1: Critical and Creative Thinking

CO1 and CO4 demonstrate critical thinking by encouraging students to analyze spatial patterns, vulnerabilities, and risks in disaster management. CO7 enhances critical thinking by evaluating the causes and impacts of disasters and proposing innovative solutions..

PO2: Communication Skills

CO3 and CO7 align with communication skills by promoting the articulation of complex geographical concepts and disaster-related findings through structured reports and presentations.

PO3: Multicultural Competence

CO2 and CO6 promote multicultural competence by exploring the impact of human activities on natural disasters and understanding the role of diverse communities, government agencies, and NGOs in disaster management.

PO4: Research Skills

CO2 and CO4 contribute to research skills by analyzing natural disasters, conducting risk assessments, and engaging in literature reviews, data collection, and stakeholder analysis to support disaster management practices.

PO5: Environmental Awareness

CO4 enhances environmental awareness by analyzing the causes of disasters and exploring mitigation and adaptation strategies. CO6 promotes awareness by understanding the role of geospatial technologies and sustainable practices in disaster management.

PO6: Problem-solving Abilities

CO4 and CO6 enhance problem-solving abilities by fostering analytical thinking, developing innovative solutions for disaster risk reduction, and engaging stakeholders in effective disaster management.

PO7: Collaboration and Teamwork

CO3 emphasizes teamwork and collaboration by encouraging partnerships and resource sharing in understanding the impact of human activities on natural disasters. CO6 promotes collaborative learning by engaging with communities and government agencies to address disaster management challenges.

PO8: Value Inculcation

CO7 promotes value inculcation by fostering ethical practices and responsible behavior while addressing the societal impacts of disasters and encouraging community engagement.

PO9: Digital and Technological Skills

CO6 strengthens digital and technological skills by introducing the use of geospatial technologies, data visualization, and GIS applications in disaster management.

PO10: Community Engagement and Service

CO5 enhances community engagement and service by encouraging students to apply mapping techniques and geospatial tools to address real-world disaster management challenges and improve community resilience.

CBCS Syllabus as per NEP 2020 for S.Y.B.A Semester- III (2024 Pattern)

Name of the Programme	: BA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: III
Course Type	: Subject Specific IKS (Theory)
Course Code	: GEO-209-IKS
Course Title	: Ancient Indian Geographical Thoughts
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

1. To introduce the students with ancient Indian geographers and their contribution.
2. To understand the historical development of geography and various allied subjects.
3. To know the universe and its origin and different theories regarding it.
4. To understand astronomical concepts and their relevance to geography.
5. To understand the mathematical thermos.
6. To introduce the principles of mathematical and astronomical thermos.
7. To understand the impact of exploration and discoveries in subject matter.

Course Outcomes:

By the end of the course, students will be able to:

CO1: Understand ancient Indian geographers and their contribution.

CO2: Know the historical development of geography and various allied subjects.

CO3: Familiarize with the universe and its origin and different theories regarding it.

CO4: Understand astronomical concepts and their relevance to geography.

CO5: Analyze the mathematical thermos.

CO6: Understand principles of mathematical and astronomical thermos.

CO7: Understand the impact of exploration and discoveries in subject matter.

Topics and Learning Points

Unit 1: Ancient Indian Geographers **Teaching Hours**

1.1 Varahamihira **10**

1.2 Brahmagupta

1.3 Bhaskaracharya

1.4 Aryabhatta

Unit 2: Discoveries in Mathematics and Astronomy **10**

2.1 Universe and its origin

2.2 Eclipse

2.3 Earth

2.4 Latitude and Longitude

2.5 Cardinal Point

Unit 3: The Impact of Exploration and Discoveries **10**

3.1 Discovery of continents

3.2 Mountains and rivers

3.3 The Ganga

3.4 The Tsangpo

References:

1. Cooke, R. U., and Doornkamp, J. C. (1974). Geomorphology in Environmental Management. Clarendon Press, Oxford.
2. Coffey, W. J. (1981). Geography: Towards a General Spatial Systems Approach. Mathuen, London.
3. Dikshit, R. D. (1997). Geographical Thought: A Contextual History of Ideas. Published by A.K. Ghosh, Prentice-Hall of India Pvt. Ltd., New Delhi.
4. Frazire, J. W. (1982). Applied Geography. Prentice Hall, Englewood Cliffs.
5. Hertshone, R. (1959). Perspectives of Nature of Geography. Rand MacNally and Co.
6. Hussain, M. (1995). Evolution of Geographical Thought. Rawat Publications, Jaipur.
7. Singh, I. (2006). Diverse Aspects of Geographical Thought. ALFA Publications, New Delhi.

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CO2	2	1	2	3	1	1	1	1	1	1
CO3	3	2	2	3	2	2	1	1	1	1
CO4	3	1	1	2	2	2	1	1	1	1
CO5	2	1	1	1	1	2	1	1	1	1
CO6	3	1	1	2	1	3	1	2	2	1
CO7	2	1	1	1	1	2	2	2	1	3

Justification for the Mapping

PO1: Critical and Creative Thinking

CO1, CO3, and CO4 demonstrate critical and creative thinking by encouraging students to analyze the contributions of ancient Indian geographers, understand the origin of the universe, and explore astronomical concepts. These activities stimulate analytical thinking and problem-solving abilities.

PO2: Communication Skills

CO1 and CO3 align with communication skills by promoting the articulation of complex geographical concepts and discoveries effectively. CO7 enhances communication by encouraging students to present findings about the impact of exploration and discoveries in subject matter.

PO3: Multicultural Competence

CO1 and CO2 promote multicultural competence by fostering an understanding of ancient Indian geographers and the historical development of geography, enabling students to appreciate diverse perspectives and knowledge systems.

PO4: Research Skills

CO2 and CO3 contribute to research skills by encouraging students to analyze the historical evolution of geography, conduct literature reviews, and understand different theories about the origin of the universe. CO6 enhances research skills by exploring mathematical and astronomical thermos.

PO5: Environmental Awareness

CO4 and CO5 enhance environmental awareness by introducing concepts such as eclipses, latitude and longitude, and other astronomical phenomena relevant to the understanding of Earth's environment and processes.

PO6: Problem-solving Abilities

CO5 and CO6 strengthen problem-solving abilities by encouraging students to analyze and apply mathematical and astronomical principles to address geographical problems and inquiries.

PO7: Collaboration and Teamwork

CO5 and CO7 promote teamwork and collaboration by encouraging students to work together in understanding the impact of discoveries, analyze historical data, and engage in group activities related to mathematical and astronomical concepts.

PO8: Value Inculcation

CO1 and CO6 inculcate values by fostering respect for ancient knowledge systems and emphasizing the importance of ethical practices in geographical and astronomical research.

PO9: Digital and Technological Skills

CO6 enhances digital and technological skills by encouraging the application of digital tools and GIS techniques to analyze astronomical data and understand spatial patterns.

PO10: Community Engagement and Service

CO7 promotes community engagement and service by encouraging students to explore the impact of geographical discoveries on society and apply their knowledge to address real-world issues effectively.