



Anekant Education Society's

Tuljaram Chaturchand College, Baramati

(Autonomous)

Four Year B.A. Degree Program in Geography

(Faculty of Science & Technology)

CBCS Syllabus

SYBA (Geography) Semester -IV

For Department of Geography

Tuljaram Chaturchand College, Baramati

Choice Based Credit System Syllabus (2023 Pattern)

(As Per NEP 2020)

To be implemented from Academic Year 2024-2025

Title of the Programme: FYBA (Geography)**Preamble**

AES's Tuljaram Chaturchand College has made the decision to change the syllabus of across various faculties from June, 2023 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 (PSOs)

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 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 centred 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
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Anekant Education Society's
Tuljaram Chaturchand College, Baramati
(Autonomous)

Board of Studies (BOS) in Geography

2024-25

Sr. No.	Name	Designation
1.	Dr. Arun S. Magar	Chairman
2.	Dr. Asaram S. Jadhav	Member
3.	Mr. Vinayak D. Chavan	Member
4.	Ms. Sayali B. Pawar	Member
5.	Ms. Aysha A. Mulani	Member
6.	Ms. Aisha S. Tamboli	Member
7.	Dr. Santosh Lagad	Vice-Chancellor Nominee
8.	Dr. Pravin Kokane	Expert from other University
9.	Dr. T. P. Shinde	Expert from other University
10.	Dr. Babaji Maskare	Industry Expert
11.	Mr. Ganesh Ghanawat	Meritorious Alumni
12.	Ms. Tilekar Rucha Sachin	Student Representative
13.	Ms. Shaikh Muskan Ekbal	Student Representative

Credit Distribution Structure for F.Y.B.A.-2023-2024 (Geography)

Level	Semester	Major		Minor	OE	VSC, SEC, (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr/Sem	Degree/Cum.Cr.
		Mandatory	Electives							
4.5	I	GEO-101-MJM: Physical Geography (4 credits)	--	--	GEO-116-OE: Principles of Remote Sensing-I (2 credits)	GEO-121-VSC: Land Surveying & Measurement (2 credits)	ENG-131-AEC Functional English-I (2 credit)	CC1 (2 credit)	22	UG Certificate 44 credits
		GEO-102-MJM: Practical in Physical Geography (2 credits)			GEO-117-OE: Principles of Geoinformatics -I (2 credits)	GEO-126-SEC: Fundamentals of Google Earth (2 credits)	GEO-135-VEC: Environmental Pollution and Value Education (2 credits)			
						GEO-137-IKS: Ancient Indian Geographical Thoughts (2 credits)				
	II	GEO-151-MJM: Human Geography (4 credits)	--	GEO-161-MN: Fundamentals of Geography (2 credits)	GEO-166-OE: Principles of Remote Sensing-II (2 credits)	GEO-171-VSC: Map Making in GIS (2 credits)	ENG-181-AEC Functional English-II (2 credit)	CC2 (2 credit)	22	
GEO-152-MJM: Practical in Human Geography (2 credits)			GEO-167-OE: Principles of Geoinformatics -II (2 credits)	GEO-176-SEC Fundamentals of Google Map (2 credits)	GEO-185-VEC: Save The Earth (2 credits)					
Cum Cr.		12	--	2	8	8	10	4	44	

Credit Distribution Structure for S.Y.B.A.-2024-2025 (Geography)

Level I	Semester	Major		Minor	OE	VSC, SEC, (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr/Sem	Degree/Cum .Cr.
		Mandatory	Electives							
4.5	III	GEO 201 MJM Fundamentals of Geomorphology [2 T]	--	GEO 211 MM Geography of India [2 T]	GEO 216 OE Disaster Management[2 T]	GEO 221 VSC Fundamentals of Remote Sensing[2 T]	AEC-[2 T]	CC1 (2 credit)	24	UG Certificate 44 credits
		GEO 202 MJM Fundamentals of Oceanography [2 T]								
		GEO 203 MJM Disaster Management [2 T]		GEO 212 MM Cartographic Techniques for data representation [2 P]			Generic IKS(2 T)	FP (2 credit)		
		GEO 204 MJM Practical in Scale & Projection [2 P]								
	IV	GEO 251 MJM Fundamentals of Population Geography [2 T]	--	GEO 261 MN Geography of Maharashtra[2 T]	GEO 266 OE Practical in Disaster Management [2 P]	GEO 276 SEC Practical in Remote Sensing [2 P]	AEC- (2 credit)	CC2 (2 credit)	22	
		GEO 252 MJM Fundamentals of Settlement Geography [2 T]						CEP (2 Credit)		
		GEO 253 MJM Tourism Geography [2 T]		GEO 262 MN Land Measurement						

		GEO 254 MJM Statistical Techniques [2 P]		Techniques[2 P]						
	Cu m Cr.	16	--	8	4	4	6	8	46	

Course Structure for F.Y.B.A. Geography (2023 Pattern)

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
I	Major Mandatory	GEO-101-MJM	Physical Geography	Theory	04
	Major Mandatory	GEO-102-MJM	Practical in Physical Geography	Practical	02
	Open Elective (OE)	GEO-116-OE	Principles of Remote Sensing-I	Theory	02
	Open Elective (OE)	GEO-117-OE	Principles of Geoinformatics-I	Theory	02
	Vocational Skill Course (VSC)	GEO-121-VSC	Land Surveying and Measurement	Theory	02
	Skill Enhancement Course (SEC)	GEO-126-SEC	Fundamentals of Google Earth	Theory	02
	Ability Enhancement Course (AEC)	ENG-131-AEC	Functional English-I	Theory	02
	Value Education Course (VEC)	GEO-135-VEC	Environmental Pollution and Value Education	Theory	02
	Indian Knowledge System (IKS)	GEO-137-IKS	Ancient Indian Geographical Thoughts	Theory	02
	Co-curricular Course (CC)	--	To be selected from the Basket	Theory	02
	Total Credits Semester-I				
II	Major Mandatory	GEO-151-MJM	Human Geography	Theory	04
	Major Mandatory	GEO-152-MJM	Practical in Human Geography	Practical	02
	Minor	GEO-161-MN	Fundamentals of Geography	Theory	02
	Open Elective (OE)	GEO-166-OE	Principles of Remote Sensing-II	Theory	02
	Open Elective (OE)	GEO-167-OE	Principles of Geoinformatics-II	Theory	02
	Vocational Skill Course (VSC)	GEO-171-VSC	Map Making in GIS	Theory	02
	Skill Enhancement Course (SEC)	GEO-176-SEC	Fundamentals of Google Map	Theory	02
	Ability Enhancement Course (AEC)	ENG-181-AEC	Functional English-II	Theory	02
	Value Education Course (VEC)	GEO-185-VEC	Save The Earth	Theory	02
	Co-curricular Course (CC)	--	To be selected from the Basket	Theory	02
	Total Credits Semester II				
Cumulative Credits Semester I and II					44

Course Structure for S.Y.B.A. Geography (2023 Pattern)

Sem	Course Type	Course Code	Course Name	Theory / Practical	Credits
III	Major Mandatory	GEO 201 MJM	Fundamentals of Geomorphology	Theory	02
	Major Mandatory	GEO 202 MJM	Fundamentals of Oceanography	Theory	02
	Major Mandatory	GEO 203 MJM	Disaster Management	Theory	02
	Major Mandatory	GEO 204 MJM	Practical in Scale & Projection	Practical	02
	Minor (MN)	GEO 211 MN	Geography of India	Theory	02
	Minor (MN)	GEO 212 MN	Cartographic Techniques for data Representation	Practical	02
	Open Elective (OE)	GEO 216 OE	Disaster Management	Theory	02
	Vocational Skill Course (VSC)	GEO 221 VSC	Fundamentals of Remote Sensing	Theory	02
	Ability Enhancement Course (AEC)	MAR 231 AEC	भाषिक उपयोजन व लेखन कौशल्य	Theory	02
		HIN 231 AEC	हहिंदी भाषिा: सजन कौशल्य		
		SAN 231 AEC	प्राथमिक सिंभाषिण कौशल्य		
	Field Project (FP)	GEO-235-FP	Project	Practical	02
Co-curricular Course (CC)	YOG/PES/CUL/NS S/NCC-239-CC	To be selected from the Basket	Theory	02	
Generic IKS	GEN-245-IKS	IKS	Theory	02	
Total Credits Sem-III					24
IV	Major Mandatory	GEO-251-MJM	Fundamentals of Population Geography	Theory	02
	Major Mandatory	GEO-252-MJM	Fundamentals of Settlement Geography	Theory	02
	Major Mandatory	GEO-253-MJM	Tourism Geography	Theory	02
	Major Mandatory	GEO-254-MJM	Statistical Techniques in Geography	Practical	02
	Minor	GEO-261-MN	Geography of Maharashtra	Theory	02
	Minor	GEO-262-MN	Land Measurement Techniques	Practical	02
	Open Elective (OE)	GEO-266-OE	Practical in Disaster Management	Practical	02
	Skill Enhancement Course (SEC)	GEO-276-SEC	Practical in Remote Sensing	Practical	02
	Ability Enhancement Course (AEC)	MAR 281 AEC	लेखन मनमिती व परीक्षण कौशल्ये	Theory	02
		HIN 281 AEC	हहिंदी भाषिा: सिंप्रेिण कौशल		
		SAN 281 AEC	पुगत सिंभाषिण कौशल्य		
	Community Engagement Project (CEP)	GEO-285-CEP	Project	Practical	02
	Co-curricular Course (CC)	YOG/PES/CUL/NS S/NCC-289-CC	To be selected from the Basket	Theory	02
	Total Credits Sem-IV				
Grand Total Sem III + Sem IV					46

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-IV (2023 Pattern)

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: S.Y.B.A.
Semester	: IV
Course Type	: Major Mandatory (Theory)
Course Code	: GEO-251-MJM
Course Title	: Fundamentals of Population Geography
No. of Credits	:02
No. of Teaching Hours	:30

Course Objectives:

1. To introduce students to the key concepts and definitions of population geography, enabling them to understand the basic principles that govern the study of populations.
2. To examine the various components of population growth, including fertility, mortality, migration, and nuptiality, and understand their roles in shaping population trends globally and in India.
3. To make the students aware of the need and importance of population.
4. To familiarize students with classical population theories such as Malthusian theory and Demographic Transition theory, and analyze their relevance to contemporary population issues.
5. To explore the patterns of population growth, distribution, and density in India, including the socio-economic and cultural factors that influence these patterns.
6. To investigate the various aspects of population structure, including age, sex ratio, religion, language, marital status, and literacy, with a focus on their characteristics and distribution in India.
7. To encourage critical thinking about population issues, including the implications of population growth on resources, development, and policy-making.

Course Outcomes:

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

- CO1:** Clearly define key terms related to population and population geography, and explain their significance in the study of human populations.
- CO2:** Articulate the nature, scope, and importance of population geography, and how it differs from and relates to other geographical subfields.
- CO3:** Identify and critically evaluate various sources of population data, understanding their strengths and limitations for demographic analysis.
- CO4:** Analyze the components of population growth, including fertility, mortality, migration, and nuptiality, and assess their impact on population change over time and across regions.
- CO5:** Interpret and explain the spatial patterns of population growth, distribution, and density in India, and discuss the factors influencing these patterns.
- CO6:** Develop the ability to analyze and interpret demographic data, using appropriate methods to draw meaningful conclusions about population trends and issues.
- CO7:** Build a strong foundation in population geography that prepares students for advanced studies or careers in geography, demography, urban planning, and related fields.

Topics and Learning Points**Teaching Hours**

Unit – 1: Introduction to Population Geography	06
1.1 Meaning and definition of Population and Population Geography	
1.2 Nature and Scope	
1.3 Sources of Population Data	
Unit – 2: Population Growth and Distribution	12
2.1 Concept of population growth	
2.2 Component of population growth (Fertility, Mortality, Migration and Nuptiality)	
2.3 Malthus Theory	
2.4 Demographic Transition theory	
2.5 Population growth and trend in India	
2.6 Population distribution of India	
2.7 Population density in India	
Unit – 3: Population Structure and Characteristics	12

- 3.1 Age structure in India
- 3.2 Sex Ratio: definition and affecting factors of sex ratio
- 3.3 Sex ration in India
- 3.4 Religious structure in India
- 3.5 Linguistics structure in India
- 3.6 Marital structure in India
- 3.7 Literacy: definition and measures of literacy
- 3.8 Literacy in India

Reference Books:

1. **Bhende, A. and Kanitkar, T. (2011):** Principles of Population Studies, Himalaya Publishing House, Bombay.
2. **Beaujeu, G. J. (1966):** Geography of Population, Longman Group Ltd.
3. **Chandna, R.C. (Rep.2010):** Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
4. **Clark, J. I. (1973):** Population Geography, Pergamon Press Ltd., Oxford.
5. **Clark, J.I. (1984):** Geography and Population: Approaches and Applications, Pergamon Press Ltd., Oxford.
6. **Musmade Arjun, Sonawane Amit and Jyotiram More, (2015)** Population & Settlement Geography (Marathi) -Diamond Publication Pune.
7. **Agarwala, S.N. (1977):** India's population Problems, Tata McGraw Hill publishing Co. Ltd. , New Delhi.
8. **Bose Ashis et.al. (1974):** Population in India's Development Vikas Publishing House, New Delhi, 1974.
9. **Chandna R.C. (1986):** Geography of Population concepts, Determinants and Patterns, Kalyani Publishers, New Delhi
10. **Crook Nigel:** Principles of Population and Development, Pergamon Press New York, 1997.
11. **Garnier B.J. (1970):** Geography of Population, Longman, London
12. **Pathak, K.B. and F.Ram, (1992) :** Techniques of Demographic analysis. Bombay: Himalaya Publishing house

Mapping of Program Outcomes with Course Outcomes

Weightage: 0= No relation
 2= Moderate or partial relation,
 1= Weak or low relation,
 3= Strong or direct relation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	1	0	1	0	1	0	0
CO2	3	3	2	1	1	2	0	2	0	0
CO3	3	1	1	3	1	2	0	2	2	0
CO4	3	1	1	3	2	3	1	2	1	0
CO5	3	1	2	2	2	3	0	2	1	1
CO6	3	1	1	3	1	3	1	2	2	0
CO7	3	1	1	3	1	3	1	2	1	1

Justification of Mapping

PO1: Critical and Creative Thinking: CO1, CO2, CO3, CO4, CO5, CO6, CO7 Critical and creative thinking is central to defining key terms, analyzing population data, interpreting spatial patterns, and building a foundation in population geography.

PO2: Communication Skill: CO1, CO2, CO3, CO4, CO5, CO6, CO7 Communication skills are needed to articulate definitions, explain the scope of population geography, and present data and findings clearly.

PO3: Multicultural Competence: CO1, CO2, CO3, CO4, CO5 Multicultural competence is necessary for understanding and respecting diverse cultural perspectives in population geography.

PO4: Research Skills: CO3, CO4, CO5, CO6, CO7 Strong research skills are vital for evaluating population data, analyzing components of growth, interpreting spatial patterns, and conducting advanced studies in geography.

PO5: Environmental Awareness: CO2, CO3, CO4, CO5 Environmental awareness is crucial when considering the implications of population growth and distribution, especially in the context of sustainable development.

PO6: Problem-solving Abilities: CO3, CO4, CO5, CO6, CO7 Problem-solving abilities are essential for addressing population-related challenges and deriving meaningful conclusions from demographic data.

PO7: Collaboration and Teamwork: CO4, CO6, CO7 Collaboration is important for working effectively in research teams and group projects.

PO8: Value Inculcation: CO1, CO2, CO3, CO4, CO5, CO6, CO7 Value inculcation is related to ethical considerations in population studies and understanding the human impact on global issues.

PO9: Digital and Technological Skills: CO3, CO4, CO5, CO6, CO7 Digital and technological skills are increasingly important for analyzing population data and conducting spatial analysis.

PO10: Community Engagement and Service: CO5, CO7 Community engagement is linked to understanding and addressing population distribution and related societal issues.

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-IV (2023 Pattern)
CBCS Syllabus as per NEP 2020 for SYBA Geography

Name of the Programme	: SYBA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	IV
Course Type	: Major Mandatory (Theory)
Course Code	: GEO-252- MJM
Course Title	: Fundamentals of Settlement Geography
No. of Credits	02
No. of Lectures	: 30

Course Objectives:

- 1) To introduce the fundamental concepts, definitions, and scope of settlement geography, enabling students to distinguish between rural and urban settlements.
- 2) To examine the role of site and situation in the development and spatial organization of settlements, highlighting their importance in settlement hierarchy.
- 3) To explore the evolution of rural settlements, understanding the processes and factors that have shaped their development over time.
- 4) To analyze the factors influencing the location of rural settlements, including physical, socio-cultural, and economic aspects, with a focus on how these factors contribute to village naming conventions.
- 5) To study the evolution of urban settlements in India, including historical processes and contemporary trends in urbanization.
- 6) To classify and understand different types of urban centers, focusing on the functional classification of cities and their roles within the broader urbanization process in India.
- 7) To develop comparative analytical skills to assess the differences and similarities between rural and urban settlements, preparing students for advanced studies or careers in geography, urban planning, and related fields.

Course Outcomes:

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

- CO1:** Define and explain key concepts in settlement geography, demonstrating a clear understanding of the nature and scope of the field.
- CO2:** Analyze the significance of site and situation in the spatial organization and hierarchy of settlements, and apply this knowledge to real-world examples.
- CO3:** Describe the evolution of rural settlements, identifying the key factors that have influenced their development and spatial distribution.
- CO4:** Evaluate the factors affecting the location of rural settlements, including physical and socio-cultural aspects, and explain how these factors influence village naming.
- CO5:** Explain the historical and contemporary processes driving the evolution of urban settlements in India, with a focus on urbanization trends.
- CO6:** Classify urban centers based on their functional roles within the urban system, and analyze the factors contributing to their classification.
- CO7:** Develop the ability to compare and contrast rural and urban settlements, drawing on theoretical knowledge and practical examples, and apply this understanding to future academic or professional pursuits in geography and related disciplines.

Topics and Learning Points**Teaching Hours****UNIT 1: Introduction to Settlement Geography****10**

- 1.1 Definition and concept of settlement geography
- 1.2 Nature and scope
- 1.3 Site and situation aspect in settlement
- 1.4 Settlement hierarchy

UNIT2: Rural Settlement**10**

- 2.1 Evolution of rural settlement
- 2.2 Concept of rural settlement
- 2.3 Factors affecting on location of rural settlement
- 2.4 Village names based on physical and socio-cultural aspects

UNIT 3: Urban Settlement**10**

- 3.1 Evolution of urban settlement
- 3.2 Concept of urban settlement in India
- 3.3 Classification of urban center and urbanization in India
- 3.4 Functional classification of cities

Reference Books:

1. Alam, S.M. et. al. (1982): Settlement System of India Oxford and IBH Publication Co., New Delhi.
2. Chisholm M. (1967): Rural Settlement and Land use. John Wiley, New York.
3. Clout, H. D. (1977): Rural Geography, Pergamon, Oxford.
4. Doniel, P. and Hopkinson, M. (1986): The Geography of settlement Oliver & Byod, Edinb urgh.
5. Grover, N. (1985): Rural Settlement: A Cultural Geographical Analysis. Inter India Publication, Delhi.
6. Hudson, F.S. (1976): A Geography of Settlements, Macdonald and Evans, New York.
7. Ramchandran, H. (1985): Village clusters and Rural Development. Concept Publication, New Delhi.
8. Rao R. N. (1986): Strategy for Integrated Rural Development. B. R. Publication, Delhi.
9. Sen, L. K. (1972): Readings in Micro level Planning and Rural Growth Centers, National Institute of Community Development, Hyderabad.
10. Srinivas M. N. (1968): Village India, Asia Publication House, Bombay.
11. Wanmati S. (1983): Service Centers in Rural India, B. R. Publication Corporation, Delhi.
12. Musmade A H, Sonawane A E, More J C, (2015): Population & Settlement Geography, (Marathi), Diamond Publication, Pune
13. Bhattacharya: Urban Development in India, Shree publication
14. Brian, R.K. (1996): Landscape of Settlement Prehistory to present, Routledge, London
15. Careter (1972): Fourth edition: The study of Urban Geography, Arnold, London
16. Hall P. (1992): Urban and Regional Planning, Routedge, London
17. K. Siddharth and S. Mukherji: Cities, Urbanization and Urban Systems

Mapping of Program Outcomes with Course Outcomes

Weightage:

0= No relation

2= Moderate or partial relation,

1= Weak or low relation,

3= Strong or direct relation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	2	1	1	0	0	0	0
CO2	3	2	1	2	2	2	1	0	0	0
CO3	3	2	1	2	2	2	1	0	0	0
CO4	3	2	1	3	2	3	1	0	0	0
CO5	3	2	1	2	3	3	1	0	0	0
CO6	3	2	1	3	2	2	1	0	0	0
CO7	3	2	2	2	1	2	2	2	0	0

Justification for CO-PO Mapping

PO1: Critical and Creative Thinking

The entire course is designed to foster critical thinking through the analysis of settlement geography concepts, the evaluation of site and situation factors, and the comparison of rural and urban settlements. CO1, CO2, CO3, CO4, CO5, CO6, and CO7 are heavily aligned with this PO, as they require students to think analytically and creatively about various settlement patterns and processes.

PO2: Communication Skill

Effective communication is integral to explaining key concepts, analyzing spatial organization, and discussing settlement evolution. CO1 to CO7 all involve tasks that require students to articulate their understanding clearly, both in writing and orally, aligning strongly with PO2.

PO3: Multicultural Competence

Understanding settlements involves an appreciation of diverse cultural contexts, especially when analyzing the socio-cultural factors influencing rural and urban development. CO1 to CO7 touch on these aspects, with a moderate emphasis on multicultural competence.

PO4: Research Skills

Research skills are essential for exploring settlement geography. CO1, CO2, CO3, CO4, CO5, CO6, and CO7 all require students to engage in research activities, including data collection, analysis, and interpretation, which is why they are strongly related to PO4.

PO5: Environmental Awareness

Environmental factors play a critical role in settlement location and development. CO2, CO3, CO4, CO5, and CO6 focus on how these factors influence both rural and urban settlements, making them relevant to PO5.

PO6: Problem-solving Abilities

Addressing challenges in settlement geography, such as urbanization and rural development, requires strong problem-solving skills. CO2, CO3, CO4, CO5, CO6, and CO7 involve identifying and analyzing problems related to settlement patterns, aligning well with PO6.

PO7: Collaboration and Teamwork

Many tasks in settlement geography, such as urban planning and rural development projects, require teamwork. CO2, CO3, CO4, CO5, CO6, and CO7 encourage collaboration and are therefore related to PO7.

PO8: Value inculcation

CO7 emphasizes the application of settlement geography knowledge in professional and academic contexts, which includes the inculcation of values such as ethical urban planning and sustainable development, aligning it with PO8.

CBCS Syllabus as per NEP 2020 for SYBA Geography (2023 Pattern)

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: IV
Course Type	: Major Mandatory (Theory)
Course Code	: GEO-253-MJM
Course Title	: Tourism Geography
No. of Credits	: 02
No. of Teaching Hours	: 30

Course Objectives:

- 1 To understand the diverse nature and broad scope of Tourism Geography.
- 2 To provide understanding of recent and emerging types of Tourism.
- 3 To gain insights into specialized forms of tourism.
- 4 To understand the characteristics and sustainability of tourism.
- 5 To explore the socio-cultural determinants of tourism.
- 6 To classify and analyse diverse tourism trends,
- 7 To enabling the students with the dynamic nature of the tourism industry.

Course Outcomes:

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

- CO1.** Understand of the definition, nature, and scope of tourism.
- CO2.** Recognize and articulate the economic, social, and cultural importance of tourism.
- CO3.** Categorize tourism based on nationality, understanding the distinctions between domestic and international tourism.
- CO4.** Analyse the impact of physical determinants such as relief, climate, forests, and water bodies on tourism development and experiences.
- CO5.** Identify the influence of religious, historical, and cultural factors on tourist attractions.
- CO6.** Classify and analyse diverse tourism trends.
- CO7.** Understand the dynamic nature of the tourism industry.

Topics and Learning Points	Teaching Hours
UNIT 1: Introduction to Tourism Geography	10
1.1 Definition, meaning and concepts of tourism	
1.2 Nature and Scope of Tourism Geography	
1.3 Importance of Tourism in Geography	
UNIT 2: Determinants of Tourism Development	10
2.1 Physical (Relief, Climate, Forest, Water)	
2.2 Socio-Cultural (Religious, Historical)	
2.3 Political (Policies)	
2.4 Other (Accessibility, Safety of Tourist)	
UNIT 3: Classification of Tourism	10
3.1 Nationality	
3.2 Travel Time	
3.3 Travel Distance	
3.4 Number of Tourist	
3.5 Purpose of Tourism	

References:

1. Cooper, C. and Hall, M., (2008). *Tourism and Leisure: Issues and Challenges*. Channel View Publications, Bristol.
2. Goeldner, C. R. and Ritchie, J. R. B., (2017). *Tourism: Principles, Practices, Philosophies*. John Wiley & Sons, Hoboken.
3. Singh, V. and Joshi, S., (2012). *Tourism Planning and Development: Concepts and Issues*. Sterling Publishers, New Delhi.
4. Page, S. and Connell, J., (2009). *Tourism: A Modern Synthesis*. Cengage Learning, Hampshire.
5. Seth P.N., (1985), *Successful Tourism Management*, Sterling Publisher Ltd., New Delhi.
6. Mhatre, S., (2015), *Tourism Geography: An Integrated Approach*. Himalaya Publishing House, Mumbai.

Mapping of Program Outcomes with Course Outcomes

Weightage: 0= No Relation, 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	2	2	1	0	0	0	0	0	0	2
CO2	2	2	1	1	1	0	0	0	0	1
CO3	1	1	3	0	0	0	0	0	0	2
CO4	1	1	2	3	2	0	0	0	1	0
CO5	1	1	1	2	3	0	0	0	0	0
CO6	1	1	1	1	1	3	1	0	0	0
CO7	1	1	1	1	1	1	3	0	0	0

Justification:

PO1 Critical and Creative Thinking: CO1 and CO2 require critical thinking about tourism definitions and economic impacts. CO3 involves understanding cultural differences in tourism, requiring diverse thinking approaches. CO4 to CO7 involve factual knowledge and industry dynamics more than critical or creative thinking.

PO2 Communication Skill: CO1 and CO2 require effective communication about tourism concepts and economic impacts. CO3 involves communicating effectively across cultural differences. CO4 to CO7 focus more on factual knowledge and industry-specific terminology.

PO3 Multicultural Competence: CO3 is directly related to understanding cultural differences in tourism. CO1 and CO2 relate to multicultural aspects through understanding tourism definitions and economic impacts. CO4 to CO7 have less direct relation to multicultural competence.

PO4 Research Skills: CO4 requires research skills to analyze physical determinants of tourism. CO5 involves research in cultural influences on tourism.CO1 to CO3 and CO6 to CO7 involve less research and more practical or observational skills.

PO5 Environmental Awareness: CO4 and CO5 require understanding environmental impacts and conservation in tourism.CO1 and CO2 touch on environmental sustainability in tourism.CO3 and CO6 to CO7 have less emphasis on environmental issues.

PO6 Problem-solving Abilities: CO6 requires problem-solving in analyzing tourism trends and challenges.CO1 and CO2 involve problem-solving related to economic impacts and policy analysis.CO3 to CO5 and CO7 involve less direct problem-solving.

PO7 Collaboration and Teamwork: CO7 involves teamwork in understanding the dynamic nature of the tourism industry.CO1 and CO2 touch on collaboration in economic and policy contexts.CO3 to CO6 involve less direct collaboration skills.

PO9 Digital and Technological Skills: CO4 involves using technology to analyze physical determinants of tourism.

PO10 Community Engagement and Service: CO1 and CO3 relate to community engagement in understanding tourism impacts and cultural interactions. CO2 involves community engagement in economic and cultural benefits of tourism.CO4 to CO7 involve less direct community engagement and service activities

CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-IV (2023 Pattern)

Name of the Programme	: SYBA Geography Programme
Code	: UAGEO
Class	: SYBA
Semester	IV
Course Type	: Major Mandatory (Practical)
Course Code	: GEO-254- MJM
Course Title	: Statistical Techniques in Geography
No. of Credits	02
No. of Lectures	60

Course Objectives:

1. To understand Central Tendency and dispersion.
2. To develop the skills of data collection and interpretation.
3. To analyze and calculate inferential statistics.
4. To understand correlation of various geographic phenomena.
5. Students learn how to plan a small group field visit and work in small groups in the field
6. The goal to enhance the students learning experience with field visits and digital techniques.
7. The overall aim of the course is to provide an introduction to fundamental statistical methods used in Geography.

Course Outcomes:

After completion of this course, student will be able to:

CO1: Gain understanding of basic statistical techniques used in Geography.

CO2: Analyze and calculate central tendency techniques used in Geography.

CO3: Understand knowledge about analysis techniques used in research work.

CO4: Gain practical experience and awareness of some skills of field visits and data collection.

CO5: Develop skills by problem-solving, field and/or primary and secondary data collection, analysis and interpretation.

CO6: Develop communication and interactive skills through group work.

CO7: Enhance ability to work as part of a team.

Topics and Learning Points	Teaching Hours
Unit – 1: Introduction to statistical techniques in geography	10
1.1 Applications of statistical techniques in Geography	
1.2 Geographical data	
1.3 Types of statistics: descriptive and inferential statistics	
Unit – 2: Descriptive Statistics	24
2.1 Introduction to descriptive statistics	
2.2 Measures of central tendency: mean, mode and median	
2.3 Measures of dispersion: variance and standard deviation	
(Calculations of above parameters for ungrouped and grouped data)	
Unit – 3: Inferential statistics	20
3.1 Population and sample	
3.2 Hypothesis testing: null and alternative hypothesis	
3.3 The Chi-square test (One sample case)	
3.4 Student's 't' test (Two sample case)	
Unit – 4: Study tour or village/ city survey	06
A short tour of two days duration or a long tour of more than five days duration and preparation of study report	
OR	
A village/ city survey and preparation of report	

Reference:

1. Jadhav A. S. (2022): Statistical Techniques for Geography, Pritam Publication, Jalgaon
2. Singh Lehraj, (1973): Map Work and Practical Geography, Central Book Depot –Allahabad
3. D. Y. Ahirrao and E. K. Karanjkehele, (2002): Pratyakshik Bhugol, Sudarshan Publication, Nashik
4. Pijushkanti Saha & Partha Basu (2007): Advanced Practical Geography, Books and Allied (P) Ltd., Kolkata.
5. Heywood, I., Cornelius, S. and Carver, S. (2011) An Introduction to Geographical Information Systems. Prentice Hall, Fourth Edition.
6. Asis Sarkar (2015): Practical Geography, A Systematic Approach, Orient Black Swan
7. David, E. (1989): Statistics for Geographers.
8. Elhance, D.L., Elhance, V. and Aggarwal B.M. (2014): Fundamentals of Statistics, KitabMahal, Allahabad.
9. Hammond, R. and McCullagh, P. (1978): Quantitative Techniques in Geography, Clarendon Press. Oxford, London.
10. Karlekar, S. and Kale, M. (2006): Statistical Analysis of Geographical Data, Diamond Publication, Pune.
11. Liendsor, J. M. (1997): Techniques in Human Geography, Routledge.
12. Norcliffe, G.B. (1977): Inferential Statistics for Geographers, Hutchinson, London.
13. Rogerson, P.A. (2015): Statistical Methods for Geography, SAGE Publication, London.
14. Wheller, D., Shaw, G. and Barr, S. (2010): Statistical Techniques in Geographical Analysis, David Fulton, Routledge, New York.
15. Yeats, M. H. (1974): An Introduction to Quantitative Analysis in Human Geography.
16. <http://studymaterial.unipune.ac.in:8080/jspui/handle/123456789/201>

Mapping of Program Outcomes with Course Outcomes

Weightage:

0= No relation

2= Moderate or partial relation,

1= Weak or low relation

3= Strong or direct relation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	0	2	0	1	1	0	3	0
CO2	2	1	0	2	0	1	1	0	3	0
CO3	3	2	1	3	0	2	1	0	3	0
CO4	1	2	0	2	0	1	2	0	1	2
CO5	2	2	1	3	0	2	2	0	1	2
CO6	1	3	0	1	0	1	2	0	1	1
CO7	1	2	0	1	0	1	3	0	0	0

Justification for CO-PO Mapping

PO1: Critical and Creative Thinking: CO1 and CO2 involve understanding and applying statistical techniques, which require critical thinking to analyze and interpret data. CO3, CO5, and CO6 involve deeper analysis and problem-solving related to research and field data, which enhances critical and creative thinking.

PO2: Communication Skill: CO4, CO5, and CO6 emphasize communication skills, particularly in the context of presenting and discussing fieldwork, data collection, and analysis. Effective communication is essential for expressing findings and interacting in group settings.

PO4: Research Skills: CO1, CO2, CO3, and CO5 focus on statistical techniques, data analysis, and fieldwork, all of which are integral to developing strong research skills, including problem formulation, data collection, and analysis.

PO6: Problem-solving Abilities: CO3, CO4, and CO5 involve solving problems related to data analysis and fieldwork, which requires problem-solving abilities to address complex research and data collection challenges.

PO7: Collaboration and Teamwork: CO4, CO5, CO6, and CO7 emphasize group work, field visits, and teamwork, highlighting the importance of working effectively in teams and collaborating on projects.

PO9: Digital and Technological Skills: CO1, CO2, and CO3 involve the use of statistical techniques and software for data analysis, which directly relates to digital and technological skills.

PO10: Community Engagement and Service: CO4 and CO5 involve field visits and data collection, which can contribute to community engagement by applying geographic research to real-world contexts and improving local knowledge.

**CBCS Syllabus as per NEP 2020 for SYBA Semester IV
(2023 Pattern)**

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: S.Y.B.A.
Semester	: IV
Course Type	: Minor (Theory)
Course Code	: GEO-261-MN
Course Title	: Geography of Maharashtra
No. of Credits	: 02
No. of Lectures	: 30

Course Objectives:

1. To understand the geological structure and formation of Maharashtra's landforms.
2. To analyze the drainage systems, including major rivers and their basins in Maharashtra.
3. To study the climate patterns and their variations across different regions of Maharashtra.
4. To explore the physiographic divisions of Maharashtra, including the Western Ghats, Deccan Plateau, and coastal plains.
5. To examine the soil types and their distribution across Maharashtra.
6. To assess the natural vegetation and forest types found in various parts of Maharashtra.
7. To investigate the occurrence and impact of natural hazards, such as floods and droughts, in Maharashtra.

Course Outcomes:

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

- CO 1:** Explain the geological structure and formation of Maharashtra's landforms.
- CO 2:** Analyze and describe the major drainage systems and river basins in Maharashtra.
- CO 3:** Interpret climate patterns and understand their regional variations across Maharashtra.
- CO 4:** Identify and differentiate the physiographic divisions of Maharashtra, including the Western Ghats, Deccan Plateau, and coastal plains.
- CO 5:** Classify and describe the various soil types and their distribution in Maharashtra.
- CO 6:** Assess and categorize the natural vegetation and forest types found in Maharashtra.
- CO 7:** Evaluate the occurrence and impacts of natural hazards such as floods and droughts in Maharashtra.

Topics and Learning Points**Teaching Hours****Unit 1: Introduction of Maharashtra****10**

- 1.1 Historical and Political Background of the state
- 1.2 Geographical location of State
- 1.3 Adjoining States
- 1.4 Physical and Administrative Divisions

Unit 2: Physical Setting of Maharashtra**10**

- 2.1 Geological Structure of Maharashtra
- 2.2 Physical Structure of (Mountain, Plateau, Plains)
- 2.3 Drainage Pattern (East and West Flowing Rivers)
- 2.4 Major Soil Types and Distribution

Unit 3: Climate of Maharashtra**10**

- 3.1 Climatic Regions of Maharashtra
- 3.2 Distribution of Rainfall
- 3.3 Drought prone Areas: problems and Management
- 3.4 Flood Areas: Problems and Management

Reference:

1. S.G. Khedkar, 2014, Maharashtra: A Political History, New Century Book House.
2. M.R. Karanjkar, 2010, Maharashtra: History and Culture, Shubhi Publications.
3. V.S. Kulkarni, 2007, Geography of Maharashtra, Concept Publishing Company.
4. A.V. Deshmukh, 2012 Maharashtra: Geography, History and Culture, Prabhat Prakashan.
5. N. S. Apte, 2015, Maharashtra: A Comprehensive Overview, Mapin Publishing.
6. N.V. Chitnis, 2008, Geology of Maharashtra, University of Pune Press.
7. S. R. Subhedar, 2011, The Geology of Maharashtra: An Introduction, Himalaya Publishing House.
8. Savadi, M.R., 2011. Geography of Maharashtra. Vishwavidyalaya Prakashan, Pune. (Marathi)
9. More, J.C., 2014. Geography & Agriculture for MPSC Examination. Atharv Publication, Pune. (Marathi)

Mapping of Program Outcomes with Course Outcomes

Weightage: 0= No Relation

1= Weak or low relation

2= Moderate or partial relation,

3= Strong or direct relation

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

Justification:

PO1: Critical and Creative Thinking: CO1, CO2, CO3, and CO4 strongly relate to critical and creative thinking by requiring complex analysis of geological, drainage, and climatic data. CO5 and CO6 involve moderate critical thinking for data evaluation, while CO7 requires strong critical thinking for assessing natural hazards.

PO2: Communication Skills: Effective communication is crucial for CO1, CO2, and CO4 in explaining geographical concepts. CO3 and CO7 need clear presentation of climate and hazard data, with a moderate need for CO5 and CO6 in describing soil and vegetation.

PO3: Multicultural Competence: CO1 and CO2 support multicultural understanding through regional insights, while CO6 and CO7 emphasize ecological and community values, contributing to global awareness.

PO4: Research Skills: CO1, CO2, CO3, and CO7 strongly relate to research skills for hypothesis testing and data analysis. CO5 and CO6 require moderate research skills for soil and vegetation studies.

PO5: Environmental Awareness: CO1 and CO4 enhance environmental awareness through understanding landforms, while CO5 and CO6 support conservation. CO7 addresses environmental degradation and disaster management.

PO6: Problem-Solving Abilities: CO1, CO2, CO3, and CO4 solve issues related to landforms, drainage, and climate. CO5 and CO6 address soil and vegetation management, and CO7 focuses on disaster management.

PO7: Collaboration and Teamwork: CO1 and CO4 involve teamwork in geological and physiographic research. CO5 and CO6 require team-based efforts for soil and vegetation assessments, and CO7 may need collaborative work for hazard management.

PO8: Value Inculcation: CO1 and CO4 promote ethical practices in research and conservation. CO5 and CO6 encourage responsible stewardship, while CO7 includes ethical considerations for disaster response.

PO9: Digital and Technological Skills: CO1 and CO5 use digital tools for analysis, while CO6 and CO7 involve technology for mapping and analyzing vegetation and hazards.

PO10: Community Engagement and Service: CO1 and CO4 inform community conservation efforts, and CO6 and CO7 engage communities in environmental protection and disaster preparedness.

**CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-IV
(2023 Pattern)**

Name of the Programme	: SYBA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	IV
Course Type	: Minar (Practical)
Course Code	: GEO-262-MN
Course Title	: Land Measurement Techniques
No. of Credits	02
No. of Lectures	60

Course Objective:

1. To gain an understanding of the meaning, definitions, and importance of land measurement techniques, including their scope and applications.
2. To develop skills in measuring areas of various shapes (circle, square, rectangle, triangle, and uneven shapes) using traditional methods.
3. To understand and apply concepts of different area units such as Guntha, Ekar, Hector, and Square Kilometer, including their conversions.
4. To acquire practical knowledge and skills in handling advanced measurement instruments such as GPS, Total Stations, and GNSS.
5. To learn to conduct GPS measurements and record data including Latitude, Longitude, and Altitude, and apply these measurements to practical scenarios.
6. To develop skills in using Total Stations for measuring points and areas, and understand the associated techniques for accurate data collection.
7. To gain proficiency in conducting GNSS (DGPS) measurements and interpreting data for land measurement purposes.

Course Outcomes:

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

CO1: Demonstrate a clear understanding of land measurement terminology, scope, and applications, and identify career opportunities related to land measurement.

CO2: Accurately measure areas of various geometric shapes using traditional techniques and convert these measurements between different units.

CO3: Convert areas between units such as Guntha, Ekar, Hector, Square Kilometer, and Square Meter with proficiency.

CO4: Handle GPS equipment effectively, perform measurements, and analyze data including Latitude, Longitude, and Altitude.

CO5: Conduct precise measurements using Total Stations, including plotting points and calculating areas, and interpret the resulting data.

CO6: Perform GNSS (DGPS) measurements accurately and apply the data to practical land measurement scenarios, understanding the benefits and limitations.

CO7: Interpret land records such as 7/12 Utara or Extract and apply this knowledge to practical land measurement and analysis tasks.

Topics and Learning Points	Teaching Hours
UNIT 1: Introduction to land measurement techniques	12
1.1 Meaning and definitions Land Measurement	
1.2 Scope, Importance and applications of the study	
1.3 Career opportunities	
UNIT 2: Traditional measurement techniques	24
2.1 Measurement of area (Circle, Square, Rectangle, Triangle, Uneven shape)	
2.2 Concepts of Guntha (R), acre, Hector and Square Kilo miter	
2.3 Measurement of Guntha, acre and Hector	
2.4 Conversion of area (R in to acre, hector into acre, Square km into square meter, square meter to square feet)	
UNIT 3: Advanced measurement techniques	24
3.1 Introduction and handling techniques of GPS, Total Station and GNSS	
3.2 Conducting GPS point with Latitude, Longitude and Altitude	
3.3 Plotting techniques GPS point on graph paper and measurement of area	
3.4 Conducting total station points and measurement of area	

3.5 Conducting GNSS (DGPS) points and measurement of area

3.6 Reading of 7/12 Utara or Extract (Village sample 7 and 12)

References:

1. Sharma J. P., 2010, Prayogic Bhugol, Rastogi Publishers, Meerut.
2. Singh R. L. and Singh R. P. B., 1999, Elements of Practical Geography, Kalyani Publishers.
3. Slocum T. A., McMaster R. B. and 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. and Dutta P. K., 2012, Prayogatama Bhugol, Central Book Depot, Allahabad
7. Ahirrao Y., Karanjkehele E. K., 2002, Practical Geography, Sudarshan Publication, Nashik
8. Karlekar S. N., 2008, Statistical Methods, Diamond Publication, Pune
9. Kanetkar T. P., Kulkarni S. V., 1986, Surveying and Leveling, Pune Vidyarthi Griha Publication, Pune
10. Kumbhare A., Practical Geography, Sumeru publication, Dombivali.
11. Saha P., Basu P., 2007, Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata
12. V. J. Patil and A. P. Chaudhari, 2016 Pratyakshik Bhugol, Prashant Publication.

Converting areas and understanding different units involves research-based problem-solving. Conducting measurements with GPS, Total Stations and GNSS involves research and data interpretation.

PO6: Problem-solving Abilities: All land measurement techniques require problem-solving skills.

PO7: Collaboration and Teamwork: CO7 Collaboration might be needed for interpreting and applying land records in practical scenarios.

PO8: Value Inculcation: CO1 Understanding career opportunities and scope can include ethical considerations. CO7 Interpreting land records could involve understanding and applying ethical practices.

PO9: Digital and Technological Skills: Handling GPS, Total Station and DGPS equipment's require strong digital and technological skills.

PO10: Community Engagement and Service: CO1 Understanding career opportunities could relate to community service. CO7 Interpreting land records can be important for community service and local engagement.

**CBCS Syllabus as per NEP 2020 for SYBA Semester IV
(2023 Pattern)**

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: S.Y.B.A.
Semester	: IV
Course Type	: Open Elective (Practical)
Course Code	: GEO-266-OE
Course Title	: Practical in Disaster Management
No. of Credits	: 02
No. of Lectures	: 60

Course Objectives:

1. To provide students with an understanding of natural disasters, focusing on earthquake preparedness and response.
2. To develop skills for managing flood situations, including prediction, evacuation, and water rescue techniques.
3. To equip students with knowledge and techniques for fire safety and response, including the use of firefighting equipment.
4. To train students in accident management, with a focus on first aid for common injuries and CPR methods.
5. To educate students on handling hazardous situations, such as gas leaks, with an emphasis on safety procedures and preventive measures.
6. To impart knowledge on managing biological hazards, specifically snake bites, including identification, first aid, and preventive awareness.
7. To prepare students to respond effectively to cloudbursts, flash floods, and LPG cylinder leaks, covering survival techniques, safety protocols, and post-disaster management.

Course Outcomes:**By the completion of the course, students will be able to:**

- CO 1:** Understand and apply earthquake preparedness and response techniques, including creating emergency plans and conducting drills.
- CO 2:** Develop and implement flood management strategies, including flood prediction, evacuation procedures, and water rescue techniques.
- CO 3:** Demonstrate knowledge and skills in fire safety and response, including the use of firefighting equipment and evacuation procedures.
- CO 4:** Apply accident management skills, including providing first aid for common injuries and performing CPR.
- CO 5:** Handle hazardous situations such as gas leaks effectively, with a focus on safety procedures and preventive measures.
- CO 6:** Manage biological hazards like snake bites by identifying venomous species, administering first aid, and promoting preventive awareness.
- CO 7:** Respond effectively to cloudbursts, flash floods, and LPG cylinder leaks, utilizing survival techniques, safety protocols, and post-disaster management strategies.

Topics and Learning points	Teaching Hours
Unit 1: Natural Disasters and Emergency Response	20
1.1 Earthquake Preparedness and Response	
Understanding seismic zones	
Creating emergency plans and kits	
Conducting earthquake drills	
1.2 Flood Management	
Flood prediction and early warning systems	
Evacuation procedures and flood relief camps	
Water rescue techniques	
1.3 Thunderstorm and Lightning Disasters	
Understanding the formation and impact of thunderstorms and lightning	

Safety measures and immediate response actions during thunderstorms
Lightning strike first aid and prevention strategies

Unit 2: Fire, Accidents, and Hazardous Situations Management **20**

2.1 Fire Safety and Response

Types of fires and firefighting techniques
Use of fire extinguishers and safety equipment
Evacuation procedures in case of a fire

2.2 Accident Management and CPR Techniques

First aid for common injuries (fractures, burns, etc.)
Cardiopulmonary Resuscitation (CPR) methods
Managing road traffic accidents and accident reporting

2.3 Gas Leakage Response

Handling gas leaks in homes and industries
Evacuation and ventilation procedures
Use of safety equipment and preventive measures

Unit 3: Biological Hazards and Miscellaneous Disasters **20**

3.1 Snake Bite Management

Identifying venomous and non-venomous snakes
First aid for snake bites
Preventive measures and awareness

3.2 Cloudburst and Flash Flood Response

Understanding cloudburst phenomena
Immediate response and survival techniques
Post-disaster assessment and rehabilitation

3.3 Handling Home Cylinder Leaks

Identifying and responding to LPG cylinder leaks
Safety protocols for leak prevention
Emergency response and evacuation during a leak

Reference:

1. **Subramanian, R.** (2010). Disaster Management: Text and Case Studies. Vikas Publishing House.
2. **Agarwal, P., & Shrikhande, M.** (2006). Earthquake Resistant Design of Structures. Prentice Hall India.
3. **Singh, R. B.** (2006). Natural Hazards and Disaster Management. Rawat Publications.
4. **Sharma, S. P., & Sharma, P.** (2011). Flood Risk Assessment and Management. Atlantic Publishers.
5. **Gupta, M. C.** (2003). Disaster Management in India. Kalpaz Publications.
6. **Joshi, S. N.** (2012). River and Coastal Floods: Guidelines for Emergency Management. New India Publishing Agency.
7. **Hegde, H. V.** (2006). Manual of First Aid Management of Snakebite. Jaypee Brothers Medical Publishers.
8. **Tripathy, R. S.** (2012). Handbook on Snakebite First Aid. Aavishkar Publishers.
9. **Sharma, B. K.** (2016). Clinical Management of Snakebite in India. Jaypee Brothers Medical Publishers.

Mapping of Program Outcomes with Course Outcomes

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

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

Justifications

PO1: Critical and Creative Thinking: Critical and creative thinking is essential for developing effective disaster response strategies. CO1 (earthquake preparedness) and CO4 (accident management) involve innovative problem-solving, as do CO6 (biological hazards) and CO7 (various disaster scenarios).

PO2: Communication Skill: Effective communication is key for clear instructions and ensuring safety protocols are followed. CO4 (first aid) and CO5 (hazardous situations) rely heavily on communication, with less emphasis on CO1 (earthquake preparedness) and CO7 (disaster response).

PO3: Multicultural Competence: Cultural sensitivity is important for effective disaster management. CO2 (flood management) and CO3 (fire safety) require awareness of diverse needs, as do CO6 (biological hazards) and CO7 (disasters).

PO4: Research Skills: Research skills are crucial for refining disaster management strategies. CO1 (earthquake preparedness) and CO2 (flood prediction) benefit from research, as do CO4 (accident management) and CO5 (hazardous situations).

PO5: Environmental Awareness: Understanding environmental impacts is vital for sustainable disaster management. CO1 (earthquake preparedness), CO2 (flood management), and CO7 (disaster responses) require strong environmental awareness.

PO6: Problem-solving Abilities: Problem-solving is central to managing disasters effectively. This includes CO1 (earthquake preparedness), CO2 (flood management), and CO4 (accident management), as well as CO6 (biological hazards) and CO7 (disasters).

PO7: Collaboration and Teamwork: Collaboration is key for disaster management efforts. CO4 (accident management) and CO7 (disaster response) especially benefit from teamwork, while CO1 (earthquake preparedness) and CO2 (flood management) also see some benefit.

PO8: Value Inculcation: Ethical considerations are crucial in disaster response. CO4 (first aid) and CO7 (disaster response) involve significant value-based approaches, though CO1 (earthquake preparedness) and CO2 (flood management) are less focused on this.

PO9: Digital and Technological Skills: Technology plays a role in disaster management, particularly for CO5 (hazardous situations) and CO7 (disaster response). However, its impact is less in CO1 (earthquake preparedness) and CO3 (fire safety).

PO10: Community Engagement and Service: Community engagement is essential for effective disaster management. CO1 (earthquake preparedness), CO2 (flood management), and CO7 (disaster response) all require strong community involvement and education.

**CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-IV
(2023 Pattern)**

Name of the Programme	: B.A. Geography
Programme Code	: UAGEO
Class	: S.Y.B.A.
Semester	IV
Course Type	: Skill Enhance Course (Practical)
Course Code	: GEO-276-SEC
Course Title	: Practical in Remote Sensing
No. of Credits	02
No. of Teaching Hours	60

Course Objectives:

1. To Understand the fundamentals of aerial photography and its applications.
2. To Determine the scale of aerial photographs accurately.
3. To Learn techniques for calculating object height from aerial photographs.
4. To Develop the skills to interpret single vertical aerial photographs.
5. To Understand the concept of stereo pairs in aerial photography for 3D mapping.
6. To Explore IRS (Indian Remote Sensing) satellite systems, their formats, and data products.
7. To Learn about different IRS satellite image formats and their uses.

Course Outcomes:

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

- CO1.** Explain the basics of aerial photography and identify its application areas.
- CO2.** Demonstrate the ability to calculate the scale of aerial photographs.
- CO3.** Determine object heights from aerial photographs using appropriate methods.
- CO4.** Proficiently interpret single vertical aerial photographs.
- CO5.** Develop skill in using stereo pair aerial photographs for creating maps
- CO6.** Gain thorough understanding of the IRS satellite data systems and formats used in remote sensing.
- CO7.** Identify and utilize various IRS satellite image formats for specific applications.

Topics and Learning Points	Teaching Hours
UNIT 1: IRS Satellite Data Systems and Formats	20
1.1 Determination of Scale of Aerial Photographs	
1.2 Determination of Object Height on Aerial Photographs	
1.3 Determination of Focal Length of Aerial Photographs	
UNIT 2: IRS Satellite Data Systems and Formats	20
2.1 Introduction to Reference Systems of IRS Satellites	
2.2 Data Products from IRS Satellites	
2.3 IRS Satellite Image Formats	
2.4 IRS Data Preprocessing Techniques	
UNIT 3: Interpretation of Satellite Images	20
3.1 Overview of Satellite Image Interpretation	
3.2 Interpretation of Land Cover and Land Use from Satellite Images	
3.3 Interpretation of Single Vertical Aerial Photographs	
3.4 Interpretation of Stereo pair of Aerial Photographs	

References:

1. **Colwell, R. N. (1983).** Manual of Remote Sensing. American Society of Photogrammetry.
2. **Campbell, J. B., & Wynne, R. H. (2011).** Introduction to Remote Sensing (5th ed.). Guilford Press.
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6. **Wolf, P. R., Dewitt, B. A., & Wilkinson, B. E. (2014).** Elements of Photogrammetry with Applications in GIS (4th ed.). McGraw-Hill Education.
7. **Atkinson, K. B. (1996).** Close Range Photogrammetry and Machine Vision. Whittles Publishing.
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9. **Kumar, P. S. (2011).** *IRS-1C: India's Remote Sensing Satellite*. ISRO.
10. **Richards, J. A. (2013).** Remote Sensing Digital Image Analysis (5th ed.). Springer.
11. **Campbell, J. B., & Wynne, R. H. (2011).** Introduction to Remote Sensing (5th ed.). Guilford Press.
12. **Mikhail, E. M., Bethel, J. S., & McGlone, J. C. (2001).** Introduction to Modern Photogrammetry. Wiley.
13. **McGlone, J. C. (2004).** Manual of Photogrammetry (5th ed.). American Society for Photogrammetry and Remote Sensing.
14. **Slama, C. C. (1980).** Manual of Photogrammetry (4th ed.). American Society for Photogrammetry and Remote Sensing.

Mapping of Program Outcomes with Course Outcomes

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

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

Justification

PO1: Critical and Creative Thinking: CO1, CO3, CO4, CO5, and CO6 are strongly linked to critical and creative thinking, as they require analyzing aerial and satellite data. CO2 and CO7 moderately involve critical thinking through technical tasks.

PO2: Communication Skill: All COs (CO1 - CO7) contribute moderately to communication skills by requiring students to explain complex concepts in aerial photography and satellite data.

PO3: Multicultural Competence: The connection is weak, as COs focus on technical skills rather than multicultural engagement.

PO4: Research Skills: CO1 to CO6 are strongly related to research skills, involving methodological analysis of aerial and satellite data. CO7 has a moderate connection, focusing on satellite data formats.

PO5: Environmental Awareness: The link is weak, as COs focus on technical skills rather than directly addressing environmental issues.

PO6: Problem-solving Abilities: CO1, CO4, CO5, and CO6 are strongly related to problem-solving in aerial and satellite data interpretation. CO2 and CO3 have a moderate link.

PO7: Collaboration and Teamwork: CO5, CO6, and CO7 moderately involve teamwork, particularly in mapping and satellite data tasks. The other COs emphasize individual skills.

PO8: Value Inculcation: The connection is weak, as the COs focus on technical skills without explicitly addressing broader ethical values.

PO9: Digital and Technological Skills: All COs (CO1 - CO7) are strongly related to digital and technological skills, involving software use for data analysis.

PO10: Community Engagement and Service: The connection is weak, as the COs are more focused on technical skills than on community service.

**CBCS Syllabus as per NEP 2020 for S.Y.B.A. Semester-IV
(2023 Pattern)**

Name of the Programme	: SYBA Geography
Programme Code	: UAGEO
Class	: SYBA
Semester	: IV
Course Type	: Project
Course Code	: GEO-285-CEP
Course Title	: Community Engagement Project (CEP)
No. of Credits	: 02
No. of Hours	: 60

Course Objective:

1. To enable students to recognize and understand a variety of geographic issues and challenges affecting local and global communities.
2. To teach students how to use geographic tools and technologies, such as GIS (Geographic Information Systems), to analyze and address community issues.
3. To enhance students' skills in engaging with community members and stakeholders through effective communication and collaboration.
4. To develop students' ability to design and implement solutions to geographic problems, integrating both theoretical knowledge and practical applications.
5. To encourage students to work with professionals from other disciplines to address complex geographic issues within communities.
6. To instil an understanding of ethical considerations and responsibilities when conducting community-based research and projects.
7. To provide students with the opportunity to critically reflect on the impact of their work on communities and learn from their experiences to improve future practices.

Course Outcomes:

After completion of this project, students will able to:

- CO1:** Identify and articulate key geographic issues and challenges within a community, supported by evidence from their research.
- CO2:** Demonstrate proficiency in using geographic tools and technologies, such as GIS, to analyze spatial data and support community projects.
- CO3:** Show competence in engaging with community members and stakeholders, facilitating productive discussions and collaboration.
- CO4:** Design and implement innovative and practical solutions to geographic problems, demonstrating effective application of geographic concepts.
- CO5:** Work successfully with individuals from various disciplines, integrating diverse perspectives and expertise to address complex community issues.
- CO6:** Apply ethical practices in their community engagement efforts, ensuring respect for community members and adherence to ethical guidelines.
- CO7:** Provide a critical evaluation of their projects, reflecting on their effectiveness and impact on the community, and suggesting improvements for future endeavors.

Standard Operating Procedures (SOP) of the Course:

As per the guidelines of the National Education Policy (NEP) 2020, students enrolled in undergraduate programs are required to complete a two-credit Community Engagement Programme (CEP) as part of their coursework. This CEP must be completed in Semester IV (SYBA) to qualify for the award of the B.A. degree. To facilitate the implementation of this requirement, the Board of Studies (BOS) has developed the following Standard Operating Procedure (SOP).

1. Preparation of SOP and Course Material

The Board of Studies (BOS) is responsible for the preparation of the Standard Operating Procedure (SOP), the structure of the CEP, and the associated coursework curriculum to ensure alignment with the NEP 2020 objectives.

2. Notification to Students

The department will issue an official notification to all eligible students informing them about the commencement of the Community Engagement Programme coursework and the related procedures.

3. Conducting Coursework

The department will conduct mandatory coursework sessions to equip students with the necessary knowledge and skills required for effectively undertaking the CEP, including research methodologies, fieldwork, and community engagement practices.

4. Application for Guide Allocation

Students will form groups of three and submit an application, in the prescribed format, to the Head of the Department (HOD) requesting the allocation of a CEP guide.

5. Guide Allocation

A departmental committee will review the applications and allocate guides to the student groups, following departmental policies and criteria for the selection of suitable guides.

6. Publication of Student-Guide Allocation List

The department will publish the list of student groups along with their respective CEP guides to facilitate collaboration and planning.

7. Topic Finalization

Each student group will meet with their assigned guide to discuss and finalize the topic of their Community Engagement Programme, ensuring it aligns with the curriculum and community needs.

8. Questionnaire Development

If necessary, students will develop a questionnaire for data collection as part of their fieldwork. This will be done under the guidance of their CEP guide to ensure its relevance and appropriateness to the chosen topic.

9. Fieldwork and Data Collection

Students will carry out fieldwork or field surveys in the designated community or area to collect relevant data and insights that will form the foundation of their CEP project.

10. Data Analysis and Presentation

Students will analyze the data collected from the fieldwork and present their findings in a structured format. Guidance from the assigned CEP guide will be sought to ensure accuracy and relevance.

11. Project Preparation

The final CEP report will be prepared by the student group, following the format prescribed by the department. The report will be completed under the supervision of the assigned guide to ensure it meets academic and community engagement standards.

12. Assessment and Evaluation

The completed CEP projects will be assessed and evaluated according to the guidelines laid out by the examination department. Evaluation will focus on both the academic quality and the practical community impact of the project.

13. Inclusion of Geo-tagged Photographs

The final report must include geo-tagged photographs taken during fieldwork or survey activities, serving as evidence of the students' engagement with the community.

14. Inclusion of Study Area Map

The report must also include a map of the study area to provide geographical context for the fieldwork or community survey conducted.

15. Project Length

The final CEP report should consist of 20 to 25 pages, documenting the entire process, findings, and conclusions of the Community Engagement Programme.

This SOP provides a comprehensive guide for the successful completion of the Community Engagement Programme in accordance with the NEP 2020 and departmental requirements.

Topics and Learning Points

Unit 1: Planning and Preparation for CEP Work	Teaching Hours
1.1 Defining the CEP Topic	15
1.2 Scope of the Study Area	
1.3 Identifying Key Research Questions for Field Study	
1.4 Understanding the CEP Objectives	
1.5 Ethical Considerations in CEP Work	
1.6 Creating a CEP 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: CEP Report Preparation and Presentation**20**

- 3.1 Analyzing Field Data (Quantitative and Qualitative Methods)
- 3.2 Structuring the CEP 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 CEP Report

References:

1. Mukherjee, Neela (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

Weightage: 0= No relation 1= Weak relation
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CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	3	3	3	0	0	0	3
CO2	0	0	0	3	0	0	0	0	3	3
CO3	3	3	3	0	0	0	3	0	0	3
CO4	3	0	0	0	3	3	3	0	0	3
CO5	3	0	3	0	0	3	3	0	0	3
CO6	0	0	0	0	0	3	3	3	0	3
CO7	3	0	0	3	0	3	0	3	0	3

Justification:

PO1 (Critical and Creative Thinking): Critical thinking is essential in CO1 for identifying geographic issues, while CO3 involves diverse perspectives in community engagement. CO4 emphasizes innovative solutions to problems, CO5 requires interdisciplinary approaches, and CO7 focuses on reflective evaluation.

PO2 (Communication Skills): CO3 demonstrates communication skills in engaging with community members, while CO1 requires clear articulation of geographic issues. These outcomes emphasize the importance of effective communication in presenting complex ideas during community projects.

PO3 (Multicultural Competence): CO3 involves engaging with diverse community members, necessitating respect for different cultures. CO1 highlights the importance of understanding diverse communities, and CO5 ensures inclusive solutions through interdisciplinary approaches.

PO4 (Research Skills): CO1 relies on research for identifying key issues, while CO2 emphasizes the use of geographic tools like GIS. CO7 requires reflection and synthesis of data, ensuring students can explore and evaluate issues effectively.

PO5 (Environmental Awareness): Environmental awareness is directly linked to CO1, where students identify environmental challenges, and CO4, where solutions to geographic problems often involve environmental sustainability.

PO6 (Problem-solving Abilities): Problem-solving is central in CO1 for issue identification, while CO4 highlights solution design. CO5 reflects interdisciplinary collaboration, and CO6 emphasizes ethical problem-solving. CO7 involves evaluating the effectiveness of problem-solving efforts.

PO7 (Collaboration and Teamwork): CO3 involves collaboration in community engagement, while CO4 and CO5 emphasize teamwork in designing solutions. CO6 ensures ethical collaboration within teams, crucial for achieving common goals.

PO8 (Value Inculcation): CO6 reflects ethical application in community engagement, and CO7 emphasizes critical reflection on ethical implications, ensuring students practice responsible and value-driven behavior.

PO9 (Digital and Technological Skills): CO2 highlights proficiency in geographic tools like GIS, which aligns with digital and technological skills. CO10 reflects the use of digital tools in community service initiatives.

PO10 (Community Engagement and Service): Community engagement is central to CO1, where identifying issues lays the foundation. CO3 reflects successful engagement, CO4 involves community-centered solutions, and CO7 emphasizes reflecting on the community impact of projects.