Savitribai Phule Pune University, Pune

B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	Major Core
Course Code	**:**	**GEO-201- MJ**
Course Title	**:**	**Fundamentals of Geomorphology**
Type of course	**:**	Theory
Total Credits	**:**	04
Workload	**:**	(15 hours / credit) 4 credits x 15 hours = 60 hours in semester

Objectives of the Course:

1. Understand the Fundamentals of Geomorphology**:** Familiarize students with the fundamentals, and branches of geomorphology while emphasizing its significance in understanding Earth's surface processes and landforms.
2. Analyze Tectonic and Weathering Processes: Explore the theories of plate tectonics, seafloor spreading, and the classification of crustal movements and weathering processes
3. Examine Erosional and Depositional Processes and Human Interactions

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction of Geomorphology	1. Definition of geomorphology 2. Nature and scope of geomorphology 3. Branches of geomorphology 4. Significance of geomorphology	10
2.	Tectonics and Crustal Movements	1. Origin of continents and oceans i. Theory of plate tectonics ii. Theory of sea floor spreading 2. Classification of crustal movements i. Slow movements- folding and faulting and its types ii. Rapid movements - volcanism and earthquakes: causes, consequences	16
3.	Weathering	1. Definition of Weathering 2. Types of weathering (i) Physical (ii) Chemical (iii) Biological	10

Topic No	Topic Name	Sub Topic	No. of Hours
4.	Agents of Erosion and Deposition	1. Erosional and depositional landforms created by the following geomorphic agents (i) River (ii) Sea wave	12
5.	Applied Geomorphology	1. Definition and significance of applied geomorphology 2. Concept of Geomorphosites 3. Human activity and geomorphology (i) Settlement (ii) Mining (iii) Urbanization (iv) Land Degradation	12

Course Outcomes:

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

CO 1 : Define geomorphology and explain its scope, including the relationship with other Earth sciences.

CO 2 : Identify the main branches of geomorphology and their applications.

CO 3 : Evaluate the significance of geomorphology in understanding landscape formation, environmental processes, and human activities.

CO 4 : Explain the origin of continents and oceans using the theories of plate tectonics and sea floor spreading.

CO 5 : Classify slow and rapid crustal movements and their effects on the Earth's surface.

CO 6 : Apply knowledge of tectonic processes to understand landform development, including mountain ranges, valleys, and faults.

CO 7 : Identify and describe the major agents of erosion and deposition, including rivers, sea waves, and wind.

CO 8 : Relate the processes of erosion and deposition to real-world geomorphological features and landscapes.

CO 9 : Explain the concept of applied geomorphology and its relevance to real-world

CO 10 : Apply geomorphological knowledge to environmental hazard assessment.

References:

1. Allison, R.J. (2005), Applied Geomorphology: Theory and Practice, Wiley, New York.
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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	Major Core
Course Code	**:**	**GEO-202-MJP**
Course Title	**:**	**Practicals in Fundamentals of Geomorphology**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. Develop Skills in Geomorphological Mapping and Analysis: Equip students with the ability to interpret SOI topographic sheets, identify geomorphological features and utilize tools like Google Earth for enhanced spatial understanding of landforms.
2. Techniques for Slope and Drainage Basin Analysis: Train students to measure slope angles, classify drainage patterns, construct and interpret cross-sectional profiles, and apply Strahler's stream order method for geomorphological assessment
3. Gain Hands-On Experience in Field Mapping and Report Wring: Provide practical exposure to mapping, identifying landforms and preparing reports

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Geomorphological Tools and Techniques	1. Introduction to SOI topographic sheets and understanding geomorphological features based on contour patterns/relief 2. Identifying fluvial features such as 'V' shaped valley, gorge, waterfall, potholes, meanders, deltas, floodplains etc. using contour patterns or Google Earth programming 3. Identifying coastal features: beaches, sea cliff, sea island etc. using contour patterns or Google Earth	15
2.	Slope and Drainage Basin Analysis	1. Measuring slope angles 2. Identifying drainage patterns and their geomorphological significance	15

Topic No	Topic Name	Sub Topic	No. of Hours
		3. Profile- Drawing and interpretation of cross-section of river 4. Stream order and number by Strahlers method	
3.	Field Mapping Techniques (Field excursion)	1. Techniques for mapping landforms in the field using SOI toposheet or GPS 2. Field survey for locating bench mark/spot height / triangulation mark with reference to SOI toposheet 3. Identifying landforms in the field (at least any two depositional or erosional landforms of fluvial /coastal/ aeolian) 4. Report writing on the basis of geomorphic landscape **(Conduct a field visit or field excursion lasting one or more days)**	30

Course Outcomes:

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

CO1 : Demonstrate proficiency in interpreting SOI topographic sheets to identify geomorphological features such as relief and contour patterns

CO2 : Recognize and explain the formation and characteristics of fluvial/coastal landforms sing topographic maps or Google Earth.

CO3 : Measure and interpret slope angles to understand their implications for geomorphic processes and landscape development

CO4 : Identify and analyze drainage patterns and explain their geomorphological significance, emphasizing their role in watershed and terrain evolution

CO5 : Create and interpret cross-sectional profiles of landscapes to understand elevation changes, landform processes, and spatial relationships

CO6 : Apply Strahler's method to classify stream orders and assess drainage basin characteristics effectively

CO7 : Use SOI topographic maps and GPS devices to map landforms accurately during field excursions

CO8 : Conduct field surveys and Compile a detailed report summarizing field observations, including mapped data, identified landforms, and geomorphological interpretations

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Web References:

1. Bench Mark and Spot Height Guidelines (Survey of India): SOI Publications.
2. Field Mapping Techniques using GPS: National Geographic Resources.
3. Google Earth Tutorials and Tools: earth.google.com
4. Survey of India (SOI) Resources: www.surveyofindia.gov.in
5. Survey of India Topographic Map Field Guide.
6. Tools for Field Geomorphology: Tutorials from USGS.
7. NASA Earth Observatory: earthobservatory.nasa.gov

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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	VSC
Course Code	**:**	**GEO-221- VSC**
Course Title	**:**	**Introduction to Cartography**
Type of course	**:**	Theory
Total Credits	**:**	02
Workload	**:**	(15 hours / credit) 2 credits x 15 hours = 30 hours

Objectives of the Course:

1. To understand the principles and historical development of cartography and its evolution over time.
2. To introduce the students with the fundamental concepts and techniques of cartography.
3. To enable students to use various data visualization techniques in Cartography.
4. To recognize the importance of cartography in various fields and applications.

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Cartography	1. Definition of cartography 2. History of cartographic techniques 3. Essence of cartography i. Atlas ii. Globe iii. Map 4. Branches of cartography 5. Importance and applications of cartographic techniques	12
2.	Map and Map Scale	1. Map i. Definition ii. Aspects iii. Types 2. Map Scale i. Definition ii. Types of map scale: verbal, representative fraction and graphical	08

3.	Map Projections	1. Meaning 2. Classification of map projection on the basis of use and construction 3. Selection of map projection 4. Concept and significance of UTM Projection	10

Course Outcome:

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

CO1: Understand the fundamental concepts in cartography.

CO2: Recognize the importance and application of cartographic techniques in understanding map, map scale, and projection

CO3: Appreciate the importance of skill development and education in cartographic techniques.

References:

1. Bhopal Singh, R.L., and Dutta, P. K.,(2012), Prayogatama Bhugol, Central Book Depot, Allahabad.
2. Cuff J. D. and Mattson M. T.,(1982),Thematic Maps : Their Design and Production, Methuen Young Books.
3. Dent B.D., Torguson J.S., and Holder T.W., (2008), Cartography Thematic Map Design 6th Edition), Mcgraw-Hill Higher Education
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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A.(Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	:	VSC
Course Code	**:**	**GEO -222 -VSC**
Course Title	**:**	**Introduction to Surveying**
Type of course	**:**	Theory
Total Credits	**:**	02
Workload	**:**	(15 hours / credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To acquaint students with the principles, significance, and modern techniques in surveying.
2. To familiarize the students with the basic aspects of linear, areal and vertical measurements in surveying.
3. To understand the structures, functions, merits and demerits of land surveying instruments.
4. To enhance skills for accurate land measurements and surveying

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Land Measurement	1. Definition of land measurement 2. Development of land measurement 3. Types of land measurement a. Linear methods, b. Areal methods 4. Importance of land measurement	08
2.	Surveying	1. Definition of surveying 2. Types of surveys: Plane surveying and geodetic surveying 3. Classification of survey a. On the basis of area b. On the basis of objectives c. On the basis of survey instruments (conventional and modern) 4. Importance of Surveying	08

3.	Introduction to Survey Instruments	1. Structure, function, merits and demerits of following survey instruments a. Plane table b. Dumpy c. GPS d. Total station 2. Applications of land measurement and surveying in Geography	14

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Grasp fundamental surveying principles and the importance of modern techniques.

CO 2 : Develop skills in linear, areal and vertical measurements of land.
CO 3 : Acquire a comprehensive understanding of surveying instruments.

CO 4 : Gain employment opportunities in land measurement and surveying.

References:

1. Ahirrao, D. Y. And Karanjkhele, E.K., (2002), Pratyakshik Bhugol, Sudarshan Publication, Nashik.
2. Bygott, J. (1955). Map work and Practical Geography.5th Edition, University Tutorial Press, London.
3. Davis, R.E. and Foote, F.S. (1953). Surveying, McGraw-Hill Book Co., New York.
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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B. A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	FP / OJT / CEP
Course Code	**:**	**GEO -231-FP**
Course Title	**:**	**Field Visit and Report Writing**
Type of course	**:**	Field Project
Total Credits	**:**	02
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To give hands-on experience and practical training to students in different sectors related to geography
2. To develop marketable skills among students and to apply their knowledge in real situations
3. To expose students to different industrial, educational and research institutes and future employers and help them gain experience in writing technical reports

Guidelines:

- A field visit to a geographical area should be conducted in pre-approved locations that provide opportunities to observe and analyze geographical phenomena, including natural landscapes, urban environments, or socio-economic settings.
- Faculty members will provide guidance and supervision throughout the field visit. Students must adhere to their instructions.
- Students are required to actively participate in data collection, group discussions, and assigned tasks while working effectively with peers and supervisors.
- Students must submit a field report, highlighting their observations about the geographical phenomena studied.
- The field report should follow the prescribed format, including Title Page, Table of Contents, Introduction, Objectives, significance of the study, Study Area, Methodology, Techniques and tools used for data collection, Observations, Description, Major findings and Summary.
- Maps, Grphas, Digrams and Geotagged photographs should be included in the final report.
- The final field report should be submitted in both printed and digital formats to the department.

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Gain practical exposure by conducting field visits to various geographical locations, observing and analyzing natural, urban, and socio-economic environments.

CO 2 : Develop essential research skills by applying field-based data collection techniques, mapping, surveys and interviews.

CO 3 : Improve technical writing skills by preparing structured field report that includes research objectives, methodology, data analysis, and observations.

CO 4 : Cultivate industry-relevant skills through hands-on training, field exposure, and interactions with professionals in education, research, and various sectors.

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Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	Minor
Course Code	**:**	**GEO -241-MN**
Course Title	**:**	**Physical Geography of India**
Type of course	**:**	Theory
Total Credits	**:**	02
Workload	**:**	(15 hours / credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To understand the location and physical divisions of India.
2. To understand the drainage systems of India.
3. To study the major seasons and their characteristics in India.
4. To understand the soil and forest types and their distribution.

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Location and Physical Setting	1. Location, relation with neighboring countries 2. Physical divisions a. The Northern Mountains b. The North Indian Plains c. The Peninsular Plateau d. The Coastal Lowlands and Islands	10
2.	Drainage System and Climate	1. Drainage system a. East flowing rivers- Ganga, Bramhputra, Godawari, Krushna and Kaveri b. West flowing rivers- Indus, Narmda, Tapi and Vashishti 2. Major Seasons and weather associated with them a. Summer b. Monsoon c. Winter	12
3.	Soil and Forest	1. Soil types and distribution 2. Soil conservation	8

		3. Forest types and distribution 4. Forest conservation	

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Remember the location and physical features of India.

CO 2 : Understand and explain the drainage system of India.

CO 3 : Understand the characteristics of major seasons of India

CO 4 : Understand the major soil and forest types and their distribution.

References:

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16. Wadia, D. N. (1959), Geology of India. MacMillan and Company, London and Madras.

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Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	Minor
Course Code	**:**	**GEO -242 -MNP**
Course Title	**:**	**Practicals in Map Reading**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To introduce the basic concepts in Map Reading
2. To enable students to use various Scales and Projection Techniques in Geography.
3. To acquaint students with the utility of various Projections in Geographical knowledge.
4. To explain the elementary and essential principles of practical work in Geography.

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Map	1. Map: definition and elements 2. Classification of map: based on scale and purpose 3. Use of map	08
2	Map Scale	1. Definition 2. Types of scale: verbal, numerical and graphical 3. Conversion of scale (British and Metric system) a. Verbal scale to representative fraction b. Representative fraction into verbal scale 4. Construction of simple graphical scale (At least two examples from each)	16
3.	Introduction to Map Projection	1. Definition and types of map projection 2. Basic concepts of projection: latitude, longitude, parallel of latitude, meridian of longitude, prime meridian, equator, direction 3. Calculation of time basis on meridian and GMT (Calculation of minimum two examples)	18

4.	Interpretation of Maps and Excursion	1. Introduction to Survey of India toposheets - marginal information, conventional signs and symbols and colours in S.O.I. toposheets 2. Interpretation of S.O.I. toposheets (At least one map of mountain, plateau, plain and costal region) 3. One-day field excursion for orientation of maps and toposheets, reading of maps in the field.	18

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Develop practical skill and use of map scale and projection.

CO 2 : Understand the new techniques, accuracy and skills of map making.

CO 3 : Understand and prepare different kinds of maps.

CO 4 : Recognize basic themes of map making.

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.
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12. Karlekar Shrikant- Bhoogol Shastratil Sanshodhan Paddhati,
13. Monkhouse F.J. - Maps & Diagrams, Methuen and Co., London, 1971 (3rd Edition, Revised).
14. NCERT - Textbook for Class-12, Practical Work in Geography Part II

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Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	Minor
Course Code	**:**	**OE -201-GEO**
Course Title	**:**	**Political Geography**
Type of course	**:**	Theory
Total Credits	**:**	02
Workload	**:**	(15 hours / credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To address the students about the magnitude and nature of geopolitical problems before the country of the world.
2. To acquaint the students with the nature of geographical factors influencing the geopolitical situations in India and world.
3. To explain the key concepts of Political Geography

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Political Geography	1. Definition, nature and scope 2. Historical development 3. Concept of geopolitics	08
2.	Concepts in Political Geography	1. Nation, state and nation state 2. Nation building 3. Frontiers and boundaries 4. Maritime boundaries	12
3.	Current Political Issues	1. Political Issues i. India - Pakistan ii. Russia-Ukraine iii. Problems in Bangladesh 2. International river water disputes of India 3. Geopolitical importance of Indian ocean	10

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Understand how Geography affects politics and how politics affects Geography

CO 2 : Understand the basic concepts in Political Geography

CO 3 : Distinguish between nation, state, frontier and boundaries

CO 4 : Understand major political conflicts and issues of the India and World

References:

1. Adhikari, S. Political Geography, Rawat Publication, Jaipur.
2. Dixit ,R. D. Political Geography, Tata McGraw Hill Pub. Co. Ltd., New Delhi.
3. Dwivedi, R. L. Political Geography. Chaitanya Prakashan Allahabad.
4. K Siddhartha. Nation Sate theory and Geopolitics: An introductory Political Geography, Kisalaya Publication, Patana
5. Majid Husain. Political Geography, Anmol Publisher
6. Moor R. Modern Political Geography. McMillan, London.
7. Painter J and Jeffery A. Political Geography, Sage Publication
8. Pounds N.G. Political Geography. McGraw Hill, London.
9. Taylor, P. J. Political Geography ,Longman Group UK Ltd.
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12. प्रा. जयकुमार मगर, राजकीय भूगोल, विद्या प्रकाशन, नागपूर
13. प्रा. लाटकर प्रा. आपटे राजकीय भूगोल, विद्या प्रकाशन, नागपूर
14. प्रा. भागवत ए. व्ही. राजकीय भूगोल, नरेंद्र प्रकाशन पुणे

Savitribai Phule Pune University, Pune
B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	III
Name of Vertical Group	**:**	IKS
Course Code	**:**	**GEO- 201- IKS**
Course Title	**:**	**Indian Geographical Knowledge**
Type of course	**:**	Theory
Total Credits	**:**	02
Workload	**:**	(15 hours / credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To introduce students about Geogrpahical IKS
2. To demonstrate the multifaceted nature of IKS and its importance in contemporary society.
3. To explain the Geographical knowledge in vedas, vedangas, Upavedas and Puranas.
4. To know the development of Indian Geographical knowledge and its importance in contemporary society.

   To motivate students to study Indian Geographical knowledge in detail and explore their application potential

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Indian Knowledge System (IKS)	1. Concept of IKS 2. Nature and Scope of IKS 3. IKS based approaches on knowledge paradigms 4. IKS from ancient to medieval period.	08
2.	Indian Geographical knowledge	1. Geographical Literature - Vaidikas, Puranas, the Ramayana, the Mahabharata, the works of Buddhists, Jains and Gandhian philosophy. 2. Geographical concepts in ancient India – eclipses, earth, size of earth, latitude and longitude, atmosphere, weather and climate, division of celestial sphere (Panchang), planetary computation 3. Regional geography of ancient India: continents, Bharatvarsa, mountains and rivers	12

		4. Gandhian ideas of regional development, concept of gramswaraj as microregional approach.	
3.	Practices of Indian Knowledge in Geography	1. Ancient routes of trade (Inland and Overseas) 2. Observatories in historical India – Rajasthan, Delhi, Uttar Pradesh and Madhya Pradesh 3. Indian geographical knowledge and cultural practices in India. (agriculture, festivals, architecture), 4. Gandhian approach towards agriculture, architecture, resource management and environment. 5. Gandhian philosophy for climate adaptation.	10

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Understand the IKS

CO 2 : Utilize the multifaceted nature of IKS and its importance in contemporary society.

CO 3 : Explain the Geographical knowledge in vedas, vedangas, Upavedas and Puranas.

CO 4 : Acquire the development of Indian Geographical knowledge and its importance in contemporary society.

CO 5 : Study Indian Geographical knowledge in detail and explore their application potential

References:

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3. Kantawala, S.G. (1999). "Purāṇas: Source of Ancient Indian History & Culture
4. Bhagwat, B. (2009). "Kalpa-Vedāṅga: Origin & Development", Adarsha Sanskrit Shoda Samsthan, Pune, Selected portions from the book.
5. Vartak, P.V. (1995). "Veda and Jyotish", Issues in Veda and Astrology, H Pandya (Ed.)
6. Sundaram, A.V. (1995). "Astrology: Its usefulness and Limitations in Modern Times",
7. Ali. S. M., The Geography of Puranas, Peoples publishing House New Delhi
8. Dube B. 1967 Geographical concepts in ancient India, The National Geography Society of India, HU Varansasi
9. Majumdar S.N. 1924 Cunningham's Ancient Geography of India Culcutta
10. Sircar D.C. 1960 Studies in the Ancient and Medieval India
11. Rana P.B. Singh Geographical thoughts in India: Snapshots and visions for the 21st Century

Savitribai Phule Pune University, Pune
B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B. A.
Semester	**:**	IV
Name of Vertical Group	**:**	Major Core
Course Code	**:**	**GEO-251-MJ**
Course Title	**:**	**Introduction to Population and Settlement Geography**
Type of course	**:**	Theory
Total Credits	**:**	04
Workload	**:**	(15 hours / credit) 4 credits x 15 hours = 60 hours in semester

Objectives of the Course:

1. Understand the foundations of population and settlement Geography
2. Examine the population growth and its components
3. Study the population theories and policies
4. Explore the concepts and distribution of settlements
5. Analyze rural and urban settlements

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Population Geography	1. Definition, nature and scope of population geography 2. Relation of population geography with other disciplines 3. Concepts a. Population as Resource b. Over Population c. Optimum Population d. Under Population	08
2.	Components and Growth of Population	1. Concept of population growth 2. Factors affecting population growth 3. Components of population growth a. Fertility b. Mortality c. Migration 4. Spatio-temporal variation in population growth (special reference to India) 5. Impact of over population in India	12

3.	Population Theory and Policies	1. Population Theories- Malthusian theory 2. Population Policies of India 3. Population Policies of Norway	08
4.	Introduction to Settlement Geography	1. Definition, nature and scope of settlement geography 2. Factors affecting growth and distribution of settlement 3. Concepts in settlement geography a.) Site and situation of settlements b.) Growth of settlements c.) Rehabilitated settlements d.) Ideal village e.) Planned city	12
5.	Rural Settlement	1. Pattern of settlement 2. Characteristics and function of rural settlement	08
6.	Urban Settlement	1. Concepts i. Town ii. City iii. Metropolitan City iv. Megalopolis v. Conurbation vi. Smart City vii. CBD 2. Rural-Urban Fringe 3. Kingsley Davis Model of urbanization 4. Urbanization in India 5. Problems associated with urbanization in India	12

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Understand the core concepts and interdisciplinary nature of population and settlement Geography

CO 2 : Analyze population growth and its determinants

CO 3 : Evaluate population theories and policies

CO 4 : Understand settlement distribution and growth dynamics

CO 5 : Understand challenges of urbanization and settlement planning

References:

1.Chandna, R.C. (2010), Population Geography, Kalyani Publisher.

2. Daniel, P.A. and Hopkinson, M.F. (1989). The Geography of Settlement, Oliver and Boyd, London.

3. Hassan, M.I. (2005), Population Geography, Rawat Publications, Jaipur

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7. Hans Raj (1978), Fundamentals of Demography
8. Hudson F.S. (1976), Geography of Settlements
9. Bhende, A. and Kanitkar, T. (2011), Principles of Population Studies, Himalaya Publishing House, Bombay.
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11. Chandna, R.C. (Rep.2010), Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
12. Khullar, D. R. (2011), India A Comprehensive Geography, Kalyani Publication, New Delhi.
13. Michel Chisholm (1973), Studies in Human Geography, London.
14. Ahirrao V. R, Varat T.M., Alizad S.S, and Dhapate C.D. (1990).Settlement Geography, Gaaj Prakashan Keadgaon, Ahmednagar.
15. Gharpure V.T. (1999), Settlement Geography, Pimplapure and Co. Publisher, Nagpur.
16. Landge A. A., Wani B. K., Pawar R.S. and Aher S.A, (2020), Population Geography (Marathi Edition), Atharv Publication, Jalgaon.

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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	Major Core
Course Code	**:**	**GEO- 252-MJP**
Course Title	**:**	**Practicals in Population and Settlement Geography**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours/credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To develop analytical skills for measuring population growth and dynamics
2. To apply methods of population density and projection
3. To learn practical applications of settlement geography
4. To conduct case studies in settlement analysis

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Measures of Population Growth	1. Measures of Fertility i. Crude Birth Rate (CBR) ii. General Fertility Rate (GFR) iii. Age Specific Fertility Rates (ASF) 2. Measures of Mortality Rate i. Crude Death Rate (CDR) ii. Infant Mortality Rate (IMR) iii. Age Specific Mortality Rates (ASMR) (Calculation, plotting and interpretation of one example of each method)	15
2	Measures of Population Density and Population Projection	1. Measures of Population Density i. Arithmetic Population Density ii. Physiological Population Density iii. Agricultural Population Density 2. Population Projections i. Total Projections and Regional Projections ii. High, Medium and Low Projections of Population	18

		3. Measures of Population Projection i. Mathematical Method (Arithmetic Method, Geometric Method) ii. Growth Component Method (Calculation, plotting and interpretation of one example of each method)	
3.	Practicals in Settlement Geography	1. Gravity Model 2. Lorenz Curve, Gini Coefficient for assessment of amenities in settlements 3. Urbanization Curve	12
4.	Case Studies	1. A case study of demography and amenities in nearby village **or** 2. A case study of Ideal Village	15

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Analyze population growth and mortality trends using quantitative techniques

CO 2 : Apply methods to assess population density and projection

CO 3 : Utilize quantitative models in settlement studies

CO 4 : Integrate theory and practice through case studies

References:

1. Brian, R.K. (1996), Landscape of Settlement Prehistory to present, Routledge, London.
2. Careter (1972), Fourth edition: The study of Urban Geography, Arnold, London.
3. Agarwala, S. N. (1962), Age at Marriage in India, Allahabad: Kitab Mahal Pvt. Ltd.
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11. Ashish Bose (1974), Studies in India's Urbanization-1901-71 Tata McGraw-Hill, Delhi.
12. Hudson F.S. (1976), Geography of Settlements.
13. Singh, R. L. Reading in Rural Settlement Geography.

14. Yeats, M. H. (1974), An introduction to Quantitative Analysis in Human Geography.
15. Liendsor, J. M. (1997), Techniques in Human Geography, Routledge.
16. Landge A. A., Wani B. K., Pawar R.S. and Aher S.A, (2020), Population Geography (Marathi Edition), Atharv Publication, Jalgaon.

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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	VSC
Course Code	**:**	**GEO-271-VSC**
Course Title	**:**	**Practicals in Cartography**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To Enhance students' understanding of maps, map scales, and the process of map-making.
2. To understand the various cartographic and projection techniques in Geography.
3. To utilize the knowledge about cartographic techniques and Projection Techniques
4. Develop skills in representing data accurately and creatively using different cartographic representations, such as graphs, diagrams, and maps.

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction of Map	1. Meridians, parallels, graticule, prime meridian, equator and direction 2. Calculation of time basis on meridian and GMT 3. Thematic mapping techniques- properties, uses and limitations. 4. Diagrams: Drawing of diagrams along with appropriate scale - One dimensional, Two dimensional and Three dimensional.	10
2.	Map Scale	1. British and Metric measurement system 2. Conversion of map scale (British and Metric System) a. Verbal scale to representative fraction b. Representative fraction to verbal scale 3. Construction of simple graphical scale 4. Construction of comparative graphical Scale	10

3.	Cartographic Technique	1. Techniques of representation of data a. Simple line graph b. Simple bar graph c. Pie diagram d. Choropleth map e. Isopleth method f. Flow diagram	20
4.	Construction, Properties and Use of Map Projections	1. Zenithal projection (Zenithal Polar Gnomonic Projection) 2. Conical projection Conical projection with one standard parallel / Simple conical projection 3. Cylindrical projection (Cylindrical equal-area projection) 4. Mercator projection	20

Course Outcomes:

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

CO 1 : Understand and explain the fundamental concepts of maps, including their classifications and the importance of map scales in cartography.

CO 2 : Apply various cartographic techniques to represent geographical data visually, utilising appropriate methods and tools for accurate portrayal.

CO 3 : Construct different types of maps and diagrams, demonstrating proficiency in using thematic mapping techniques and map projections.

CO 4 : Critically analyze and interpret maps, evaluating their effectiveness in conveying information and making geographical decisions.

References:

1. Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press.
2. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
3. Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi.
4. Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
5. Rhind D. W. and Taylor D. R. F., (eds.), 1989: Cartography: Past, Present and Future, Elsevier, International Cartographic Association.
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7. Sharma J. P., 2010: Prayogic Bhugol, Rastogi Publishers, Meerut.
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12. Singh, R L & Dutta, P K (2012) PrayogatmakBhugol, Central Book Depot, Allahabad

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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	VSC
Course Code	**:**	**GEO - 272 -VSC**
Course Title	**:**	**Practicals in Surveying**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To equip students with the practical skills and theoretical knowledge required for accurately measuring distances, converting area units, and computing areas using various surveying techniques.
2. To immerse students in the hands-on essentials of measuring linear, vertical, and areal aspects of surveying with real-world applications.
3. To train students with practical experience and knowledge in utilizing GPS technology.
4. To enhance skills for accurate land measurements and surveying

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Measurement of Distances and Computation of Areas	1. Distance measurements by taping a. Measure a road for a length of minimum 500 meters adjacent to college campus b. Measure an area of a building/plot/agricultural farm/garden in vicinity of the college campus 2. Area conversion measured by students *a.* Square meter to *Guntha* b. Square meter to acre c. *Bigha* to hectare d. Square foot to acre e. Measure a square mile area from a toposheet and convert it into hectare f. Measure square kilometer area from a toposheet	16

		and convert it into square mile 3. Computation of areas a. Measure an area by division into simple figures such as triangles, squares, rectangles, trapezoids, circles, etc. calculate the total area measured by these figures. b. Compute the area of the tract by offsets from straight line	
2.	Plane Table Survey	1. Survey an area with the help of plane table a. Radiation method b. Intersection method (Two examples of each method)	20
3.	Dumpy/Auto Level Survey and GPS Survey	1. Survey along a line with the help of Dumpy/Auto Level a. Collimation plain method b. Rise and fall method (Two examples of each method) 2 Survey of an area with the help of GPS a. Plotting of area on a graph with the help of data collected by GPS	24

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Understand fundamental surveying principles and the importance of modern techniques.

CO 2 : Develop skills in linear, areal and vertical measurements of land.

CO 3 : Acquire a comprehensive understanding of surveying instruments.

CO 4 : Gain employment opportunities in land measurement and surveying.

References:

1. Ahirrao, D. Y. And Karanjkhele, E.K., (2002), Pratyakshik Bhugol, Sudarshan Publication, Nashik.
2. Bygott, J. (1955). Map work and Practical Geography.5th Edition, University Tutorial Press, London.
3. Davis, R.E. and Foote, F.S. (1953). Surveying, McGraw-Hill Book Co., New York.
4. Deshpande, G.B. (1991). Surveying, Everest Publishing House, Pune.
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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	FP/OJT/CEP
Course Code	**:**	**GEO-281-CEP**
Course Title	**:**	**Community Engagement Programme**
Type of course	**:**	Practical
Total Credits	**:**	02 CEP
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To enable students to realize and understand the realities of society.
2. To make students aware of their inner strength and help them to find out solutions on society problems.
3. To develop an understanding of ethical considerations and responsibilities when conducting community based research and projects.
4. To teach students how to use geographical tools and technologies to analyze and address community issues.
5. To help students to initiate developmental activities in the community in coordination with public and government authorities.

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Social Awareness Programme	▪ Organization of Following Program (Any Two) i. Clean India Mission Campaign ii. AIDS Awareness Rally iii. Anti Drugs Campaign iv. Blood Donation Camp v. Tree Plantation Program vi. Water Conservation Program	18
2.	Field Visit and Interaction	▪ Organization of Field Visit and Interaction (Any One) i. Gram Panchayat ii. Nagarpalika iii. Panchayat Samiti iv. Mahanagarpalika v. Zilla Parishad etc	18

3.	Socio Economic Survey and Report Writing	▪ Organization of Socio-Economic Survey of any Village/City i. Field Visit and Data Collection (Survey, Interviews, Observations etc) ii. Recording and Organizing Field Data (Photographs, Maps, Diagrams, Notes etc) iii. Data Analysis, Presentation and Interpretation iv. Finding, Conclusion and Recommendations v. Submission of Final Report	24

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Analyze and assess the needs and challenges faced by a community through fieldwork and surveys

CO 2 : Design comprehensive and feasible engagement programmes to address specific community issues

CO 3 : Demonstrate the ability to execute and monitor community engagement projects effectively

CO 4 : Evaluate the impact of community initiatives using qualitative and quantitative methods

CO 5 : Reflect on personal learning and growth through engagement activities and teamwork

CO 6 : Apply ethical practices and promote inclusivity and sustainability in community projects

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.

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B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	Minor
Course Code	**:**	**GEO-291-MN**
Course Title	**:**	**Physical Geography of Maharashtra**
Type of course	**:**	Theory
Total Credits	**:**	02
Workload	**:**	(15 hours/credit) 2 credits x 15 hours = 30 hours in semester

Objectives of the Course:

1. To acquaint students with Geography of our State.
2. To make students aware of the magnitude of problems and prospects in Maharashtra.
3. To help students understand the inter relationship between the subject and the society.
4. To help students understand the recent trends in regional studies.

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Administrative Set up of Maharashtra	1. Geographical location 2. Adjoining states 3. Administrative divisions	10
2.	Physiography and Climate	1. Physical structure (mountain, plateau and plains) 2. Drainage pattern (east and west flowing rivers) 3. Major seasons and weather associated with them	12
3.	Soil and Forest	1. Soil types and distribution 2. Soil Conservation 3. Forest types and distribution 4. Forest Conservation	08

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Ability to describe and analyze the administrative structure of Maharashtra.

CO 2 : Explain the physical features of Maharashtra

CO 3 : Explore and describe the climatic diversity of Maharashtra.

CO 4 : Assess the environmental and resource management challenges facing Maharashtra.

References:

1. Dikshit K.R ., Maharashtra in Maps,
2. Deshpande C. D. , Maharashtra
3. Sadhu Arun, Maharashtra, National Book Trust
4. Savadi A. B., Geography of Maharashtra: Nirali Prakashan, Pune.
5. Dastane S., Maharashtra, Ramchandra and company, Pune
6. Sawadi A. B., The Mega State Series : Nirali Publication, Pune.
7. Maharashtra state Agricultural Atlas
8. Karve I., Maharashtra its Land and people,
9. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune

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Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	Minor
Course Code	**:**	**GEO-292-MNP**
Course Title	**:**	**Practicals in Weather Observation**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours / credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. Comprehend the mechanisms and functions of weather instruments: To understand the working principles, construction, and applications of various weather instruments
2. Develop practical skills in using weather instruments: To gain hands-on experience in operating weather instruments and recording accurate meteorological data.
3. Interpret and analyze meteorological data: To learn the methods of interpreting weather information obtained from weather maps.

Topics and Learning Points

Topic No.	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Weather Instruments	1. Understanding weather Instruments: mechanisms, functions, and usage i. Measurement of temperature: Simple Thermometer ii. Measurement of humidity: Hygrograph iii. Measurement of precipitation: Rain Gauge iv. Measurement of air pressure: Barograph v. Identification of wind direction: Wind Vane vi. Measurement of wind velocity: Cup Anemometer 2. Practical activities: i. Demonstrating the use of weather instruments ii. Recording and interpreting climatological readings	20
2.	Isobaric Patterns	1. Drawing of isobaric patterns and associated weather i. Cyclone ii. Anticyclone	20

Topic No.	Topic Name	Sub Topic	No. of Hours
		iii. Ridge iv. Trough v. Wedge 2. Secondary depression and Col	
3.	Weather Maps	1.Introduction to IMD weather maps/reports 2. Symbols in daily weather report used by (IMD) 3.Reading and interpretation of weather maps of three seasons: i. Summer ii. Monsoon iii. Winter 4. Weather applications: Mausam, Meghdoot, Damini 5. Visit to nearby weather station	20

By the end of this course, student will be able to:

Course Outcomes:

CO 1 : Explain the mechanisms and functions of weather instruments
CO 2 : Demonstrate the use of weather instruments
CO 3 : Record and interpret weather data
CO 4 : Understand and interpret the IMD weather maps
CO 5 : Identify meteorological symbols
CO 6 : Analyze isobaric patterns
CO 7 : Evaluate seasonal weather conditions
CO 8 : Develop practical skills in weather forecasting
CO 9 : Engage in field observations and reporting

References:

1. World Meteorological Organization. (1983). Guide to meteorological instruments andmethods of observation. Secretariat of the World MeteorologicalOrganization.
2. Jarraud,M. (2008). Guide to meteorological instruments and methods of observation (WMO No. 8). World Meteorological Organization: Geneva, Switzerland.
3. M. Rajeevan**, Indian Climate and Weather Systems,** Springer India, 2016 Barry, R. G., & Chorley, R. J. (2010). *Atmosphere, Weather, and Climate*. Routledge.
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2. India Meteorological Department (IMD): www.imd.gov.in
3. National Weather Service: www.weather.gov

Savitribai Phule Pune University, Pune
B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	GE/OE
Course Code	**:**	**OE -251- GEO**
Course Title	**:**	**Introduction to GPS**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours/credit) 2creditsx 30 hours = 60 hours in semester

Objectives of the Course:

1. To introduce the students to the basic concepts of GPS.
2. To acquaint the students with the utility and applications of GPS.
3. To prepare map with the help of GPS survey.

Topics and Learning Points:

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to GPS	1.Definition of GPS 2. Components of GPS – space, control & user segments 3. GPS Applications- civil applications, navigation, environmental studies, disaster management, urban and rural planning, agriculture, military applications 4.Surveying and mapping 5.Introduction to IRNSS	10
2.	GPS Equipment and Data Collection	1. Types of GPS devices: handheld, differential, and high-precision receivers 2. Satellite signals and codes 3. GPS time and coordinate systems 4. GPS field survey methods: static, kinematic, real-time 5. Data logging, waypoints, routes, and tracks 6. Conduct survey using GPS instrument 7. Manual plotting of survey data: on 2D & 3D graph	20

3.	GPS Data Processing and Integration (Software Based)	1. Data Import - Downloading and Format Types (e.g.GPX, KML, CSV) 2. Integration with GIS software (any professional or open source GIS software) 3. Post-processing techniques 4. Calculation of area 5.Mapping (Layout Creation / Map Making)	30

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Acquire knowledge about the concepts of GPS.

CO 2 : Understand the various applications of GPS.

CO 3 : Conduct field surveys using GPS instrument.

CO 4 : Gain skills to prepare maps with the help of GPS data.

References:

- Ahmed, E. L. Rabbany(2002): Introduction to Global Positioning Systems, ArtechHouse, Boston
- Agrawal N. K. (2012). Essentials of GPS, 3rd ed., BSP Books Pvt. Ltd.
- Alfred Leick (2004). GPS Satellite Surveying. 3rd ed. John Wiley and Sons Inc.,
- Bao, J., Tsui, Y. (2005): Fundamentals of Global Positioning System Receivers, John Wiley Sons, Inc.,Hoboken.
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Savitribai Phule Pune University, Pune
B.A. (Geography) as per NEP 2020

Name of the Programme	**:**	B.A. (Geography)
Class	**:**	S.Y.B.A.
Semester	**:**	IV
Name of Vertical Group	**:**	SEC
Course Code	**:**	**SEC- 251- GEO**
Course Title	**:**	**Practical in Fundamentals of Statistics**
Type of course	**:**	Practical
Total Credits	**:**	02
Workload	**:**	(30 hours/credit) 2 credits x 30 hours = 60 hours in semester

Objectives of the Course:

1. To introduce students with the fundamental concepts and applications of statistics
2. To explore different types of data and introduce major sampling techniques used in statistical analysis
3. To apply descriptive statistics, including measures of central tendency and dispersion, to summarize and analyze data efficiently

Topics and Learning Points

Topic No	Topic Name	Sub Topic	No. of Hours
1.	Introduction to Statistics	1. Definition and concepts of statistics 2. Scope of statistics 3. Application of statistics	06
2.	Data Types and Sampling Methods	1. Scales of Measurement: nominal scale, ordinal scale, Interval scale, ratio scale, 2. Types of data: primary and secondary, discrete and continuous 3. Concept of sample and population 4. Sampling methods: random sampling, stratified sampling, systematic sampling 5. Graphical representation of data: histogram, frequency curve and frequency polygon, ogive curve. (At least two examples each)	20

3.	Measures of Central Tendency	1. Concept and significance of central tendency ii. Mean: Definition, computation (ungrouped and grouped data), merits and demerits. iii. Mode: Definition, computation (ungrouped and grouped data), merits and demerits. iv. Median: Definition, computation (ungrouped and grouped), merits and demerits. (minimum two examples each)	14
4.	Measures of Dispersion	1. Concept of dispersion, Characteristics of a good measure of dispersion. 2. Range: Definition, computation, merits and demerits. 3. Semi-interquartile range (Quartile deviation): Definition, computation, merits and demerits 4. Standard deviation and variance: Definition, computation, merits and demerits 5. Measures of dispersion for comparison: coefficient of range, coefficient of quartile deviation, coefficient of mean deviation, and coefficient of variation (Minimum one example each)	20

Course Outcomes:

By the end of this course, student will be able to:

CO 1 : Classify and differentiate between different types of data, variables and sampling methods

CO 2 : Utilize graphical techniques to present statistical data using histograms, frequency and ogive curves

CO 3 : Apply descriptive statistics by computing and interpreting measures of central tendency and dispersion

CO 4 : Develop students' practical skills in statistical analysis and problem-solving.

References:

1. Croxton, C., Cowden, D. J., & Klein, S., 1967, Applied general statistics, Prentice Hall, New Jersey.
2. Frank, H., & Althoen, S. C., 1994, Statistics: Concepts and applications, Cambridge University Press.
3. Hammond, R., & McCullagh, P. S.,1985, Quantitative techniques in geography: an introduction, Clarendon Press, Oxford University Press.
4. Mann, P. S., 2020, Introductory statistics, John Wiley & Sons.
5. Rogerson, P. A., 2019, Statistical methods for geography: a student's guide, Sage Publications, London.