

**Deccan Education Society's
Kirti M. Doongursee College of Arts, Science and Commerce
(AUTONOMOUS)
Dadar (W), Mumbai -28**



Affiliated to
UNIVERSITY OF MUMBAI

Bachelor of Arts

U.G. Certificate in Geography

**Syllabus for
Semester – Sem I & II**

PROGRAM OUTCOMES

PO	Description
A student completing Bachelor's Degree in Arts Program will be able to	
PO 1	Disciplinary Knowledge: Demonstrate a blend of conventional discipline knowledge and its applications to the modern world. Execute strong theoretical and practical understanding generated from the chosen program.
PO 2	Critical Thinking and Problem solving: Exhibit the skill of critical thinking and use higher order cognitive skills to approach problems situated in their social environment, propose feasible solutions, and help in its implementation.
PO 3	Social competence: Express oneself clearly and precisely to build good interpersonal relationships in personal and professional life. Make effective use of linguistic competencies to express themselves effectively in real and virtual media. Demonstrate multicultural sensitivity in group settings.
PO 4	Research-Related Skills: Seeks opportunity for research and higher academic achievements in the chosen field and allied subjects and is aware about research ethics, intellectual property rights and issues of plagiarism. Demonstrate a sense of inquiry and capability for asking relevant/appropriate questions; ability to plan, execute and report the results of a research project be it in field or otherwise under supervision.
PO 5	Personal and professional competence: Equip with strong work attitudes and professional skills that will enable them to work independently as well as collaboratively in a team environment.
PO 6	Effective Citizenship and Ethics: Demonstrate empathetic social concern and equity centered national development; ability to act with an informed awareness of moral and ethical issues and commit to professional ethics and responsibility.
PO 7	Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.
PO 8	Self-directed and Life-long learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio-technological changes.

PROGRAM SPECIFIC OUTCOMES

After successful completion of the FYBA Geography program, students will be able to:

PSO	Description
PSO1	Conceptual Understanding of Geography Develop a strong foundation in physical and human geography, including geomorphology, human-environment relationships, settlement patterns, and migration dynamics.
PSO2	Fundamental Geographical Knowledge Understand core concepts of physical and human geography , including geomorphology, human-environment interaction, and spatial patterns.
PSO 3	Cartographic and Geospatial Skills Apply map reading, scale interpretation, and thematic mapping techniques , along with basic knowledge of remote sensing.
PSO 4	Application of Remote Sensing and Spatial Technologies Apply fundamental concepts of remote sensing and geospatial data analysis for environmental monitoring, land use mapping, and resource management.
PSO 5	Analytical and Statistical Skills Use statistical methods and spatial analysis to interpret geographical data and identify patterns and relationships.
PSO 6	Environmental Awareness and Application Evaluate environmental issues and apply geographical knowledge in sustainable development, disaster management, and resource planning .
PSO 7	Digital and E-Content Competency Create and evaluate digital geographical content, including maps, presentations, and educational materials using modern tools.
PSO 8	Practical and Research Skills Develop abilities in fieldwork, data collection, digital content creation, and basic research, fostering problem-solving and lifelong learning.



Deccan Education Society's
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Sr. No.	Heading	Particulars
1	Title of program	U.G. Certificate in Geography
2	Eligibility	HSC(Arts) OR Passed Equivalent Academic Level 4.0
3	Duration of program:	Three Year
4	Intake Capacity:	120

Sign of the HOD & Coordinator BOS in _____	Sign of the NEP Coordinator, DES's Kirti M. Doongursee College	Sign of Principal DES's Kirti M. Doongursee College, Mumbai 28.
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Preamble

1) Introduction

Deccan Education Society's Kirti M. Doongursee College (Autonomous), affiliated with the University of Mumbai, is committed to achieving quality, equity, and excellence in higher education in accordance with the guidelines of the University Grants Commission and the framework of National Education Policy 2020. The institution continuously strives to enhance academic standards by adopting outcome-based education, innovative and scientific approaches in curriculum design, teaching-learning processes, and continuous and comprehensive evaluation systems to ensure the holistic development of students.

The Board of Studies and the syllabus framing committee have designed the FYBA Geography curriculum in alignment with the Learning Outcome-based Curriculum Framework (LOCF) and NEP 2020 by considering contemporary global, national, regional, and local geographical issues. The syllabus integrates both theoretical and practical components to strengthen students' understanding of geographical concepts and their real-world applications. It emphasizes a multidisciplinary and interdisciplinary approach to learning, encouraging students to explore the interrelationship between physical processes and human activities.

The curriculum is structured to provide foundational knowledge in areas such as human geography, geomorphology, remote sensing, statistical techniques, and applied geography including geo-tourism. It focuses on developing analytical, technical, and practical skills including map reading, spatial analysis, data interpretation, and basic geospatial techniques. The inclusion of skill enhancement courses and vocational components ensures that students are equipped with competencies relevant to contemporary academic, research, and professional demands.

The program also aims to create awareness about environmental issues, sustainable development, and responsible resource utilization in alignment with national and global priorities. Students are sensitized towards understanding environmental challenges such as urbanization, migration, land degradation, and climate change, with an emphasis on identifying practical and sustainable solutions.

Practical components, including map construction, interpretation of geographical data, fieldwork, and project-based learning, are incorporated to enhance experiential and participatory learning. These activities help students develop critical thinking, research orientation, and problem-solving abilities, thereby preparing them for higher education and diverse career opportunities.

Overall, the curriculum is designed to foster intellectual growth, environmental consciousness, employability, and lifelong learning, in alignment with the objectives of NEP 2020, UGC guidelines, and the academic framework of the University of Mumbai.

Aims and Objectives

Aims:

The FYBA Geography program aims to provide students with a comprehensive understanding of **physical and human geography**, enabling them to analyze the interaction between humans and the environment. The program focuses on developing spatial thinking, analytical abilities, and practical skills through the study of geomorphology, human geography, remote sensing, statistical techniques, and geo-tourism. It also seeks to create awareness about environmental issues and promote sustainable development in accordance with NEP 2020.

Objectives

1. To provide learners with a broad understanding of physical and human geography and their interrelationships.
2. To develop knowledge of earth processes, landforms, and human-environment interactions.
3. To sensitize learners about natural and man-made environments and their changing dynamics.
4. To integrate knowledge from geographical, environmental, and social science disciplines.
5. To create awareness about contemporary geographical issues such as urbanization, migration, and environmental degradation.
6. To highlight spatial and temporal relationships between environment, economy, and society.
7. To develop skills in cartography, remote sensing, and statistical analysis for geographical studies.
8. To promote understanding of sustainable development and resource management.
9. To nurture scientific attitude and critical thinking towards environmental and societal problems.
10. To equip learners with practical, technical, and research skills for higher studies and career opportunities in Geography.

2) Learning Outcomes

After successful completion of the FYBA Geography program, students will be able to:

1. Demonstrate knowledge of fundamental concepts of physical and human geography, including geomorphology, human-environment relationships, settlements, and migration.
2. Understand and explain earth processes and landform development, including tectonic activities, weathering, erosion, and geomorphic cycles.
3. Apply cartographic techniques, including map reading, scale interpretation, and preparation of thematic maps.
4. Use basic principles of remote sensing and geospatial technologies for analyzing land use, environmental changes, and resource distribution.
5. Analyze geographical data using statistical techniques such as measures of central tendency, dispersion, and correlation.
6. Evaluate the impact of human activities on the environment and suggest measures for sustainable development.
7. Develop practical skills in fieldwork, data collection, map interpretation, and representation of geographical information.
8. Interpret and analyze spatial patterns and relationships between physical and socio-economic phenomena.
9. Demonstrate digital and communication skills through e-content creation and presentation of geographical information.
10. Apply geographical knowledge to real-world issues such as urban planning, disaster management, and tourism development.

Semester	Course Code	Course Title	Vertical	Credit
I	26GEOMJ111	Geography of Human and Cultural Landscape	Major	4
	26GEOVSC141	Basics of Remote Sensing	VSC	2
	26GEOSC151	E content	SEC	2
II	26GEOMJ211	Principles of Geomorphology	Major	4
	26GEOOE231	Geo- Tourism	OE	2
	26GEOVC241	Statistical Techniques in Geography	VSC	2
	26GEOSC251	Beginners Course to Calligraphy	SEC	2

Course Code	MAJOR SEM – I	Credits	Lectures /Week
26GEOMJ111	Paper I: Geography of Human and Cultural Landscape	4	4
Course Objectives(CO): CO1: To develop foundational knowledge of Human Geography concepts such as human–environment relationships, settlements, migration, and cultural regions. CO2: To enhance understanding of spatial patterns, urbanization, and population dynamics, and to develop skills in map reading and geographic analysis. CO3: To apply Human Geography concepts and mapping techniques to address real-world issues such as settlement planning, migration, and community development. CO4: To develop analytical and critical thinking skills to examine human–environment interactions and assess societal and community progress.			
Course Outcomes (OC): After successful completion of this course, students would be able to OC1: Describe fundamental concepts of Human Geography, including human–environment relationships, settlement types, migration patterns, cultural regions, and map scales. OC2: Explain and interpret spatial patterns, urbanization, migration, and cultural diversity, and examine geographic and demographic data using maps. OC3: Utilize Human Geography concepts and mapping techniques to address issues related to settlement planning, migration, and community development. OC4: Evaluate and assess human–environment interactions, settlement and migration patterns, and their impact on societal and community development.			
Unit	Topics	No of Lectures	
I	Human Geography: An Introduction - Human Geography - Meaning, Definition, Nature, Scope, Branches of Human Geography - Approaches to the Human Geography	15	

	• Man Environment relationships • Space and Society: World Cultural Regions; Race; Religion and Language.	
II	Settlement • Concept of Rural and Urban Settlements • Types and Pattern of Settlement, Trends and Patterns of World Urbanization. • Site and Situation; and factors affecting location of Settlement. • Functional classification of Rural and Urban settlement	15
III	Migration • Concept and Types of Migration • Causes and Consequences of migration – pull and push factors. • Emerging trends of migrations or Issues of legal and illegal international migration • Case study of Migrant refugee/infiltration crisis	15
IV	Practical • Map - Definition, Components, Type, and Importance • Map scale - Definition, Verbal Scale and Graphical Scale • Construction of Choropleth Maps, Isopleth, Dot, and Flow Maps Construction of Population Pyramid	15

References:

1. Johnson R. J. & Others (1983): The Dictionary of Human Geography, Blackwell England
2. Singh, L. R. (2009): “Fundamentals of Human Geography”, Sharda Pustak Bhavan, Allahabad
3. Hussain, M. (2011): “Human Geography”, Rawat Publications, Jaipur
4. Dixit R. D. (1997): “Geographical Thought: A Contextual History of Ideas”, PHI Learning Private Limited, Delhi
5. Singh, R. Y. (2002): “Geography of Settlements”, Rawat Publications, Jaipur

Additional References:

1. Siddhartha, K. and Mukherjee, S. (2016): “Cities, Urbanisation and Urban Systems”, KitabMahal, Delhi
2. Chandna, R. C. (2016): “Geography of Population: Concepts, Determinants and Patterns”, Kalyani Publishers, Ludhiana
3. Bhende, A. and Kanitkar, T. (2015): “Principles of Population Studies”, Himalaya Publishing House, Mumbai
4. Koser, K. (2007): “International Migration: A Very Short Introduction”, Oxford University Press, UK
5. Castles, S., Haas, H., and Miller, M. (2013): “The Age of Migration: International Movements in the Modern World”, Guilford Pr.

Course Code	VOCATIONAL SKILL COURSE SEM – I	Credits	Lectures/ Week
26GEOVSC141	Basics of Remote Sensing	2	2

Course Objectives(CO):

CO1: To develop foundational knowledge of remote sensing concepts, including electromagnetic radiation, sensor systems, platforms, and data acquisition methods.

CO2: To enhance understanding of remote sensing principles, image interpretation techniques, and data processing methods for analyzing environmental and spatial information.

CO3: To develop the ability to apply remote sensing techniques and tools for addressing real-world problems related to land use mapping, environmental monitoring, and resource management.

CO4: To develop analytical skills for evaluating remote sensing data to assess environmental changes, land use patterns, and resource distribution.

Course Outcomes (OC):

After successful completion of this course, students would be able to

OC1: Identify and define the key concepts of remote sensing, including electromagnetic radiation, sensor systems, platforms, and data acquisition methods.

OC2: Explain and interpret remote sensing principles, image interpretation techniques, and data processing methods for analyzing environmental and spatial information.

OC3: Utilize and implement remote sensing techniques and tools to address real-world problems related to land use mapping, environmental monitoring, and resource management.

OC4: Assess and critique remote sensing data to examine environmental changes, land use patterns, and resource distribution.

Unit	Topics	No of Lectures
I	Introduction to Remote Sensing • Definition and principles of remote sensing • Electromagnetic radiation and the electromagnetic spectrum • Platforms and sensors used in remote sensing. • Spatial, spectral, radiometric, and temporal resolutions • Data acquisition, processing, and interpretation	15

II	Remote Sensing Applications • Image interpretation techniques • Digital image processing and analysis • Mapping land cover and land use • Environmental monitoring and change detection • Applications in agriculture, forestry, water resources, and urban planning	15
References: 1. "Remote Sensing and Image Interpretation" by Thomas Lillesand, Ralph W. Kiefer, and Jonathan W. Chipman 2. "Introduction to Remote Sensing" by James B. Campbell and Randolph H. Wynne 3. "Remote Sensing: Principles and Interpretation" by Floyd F. Sabins Jr. 4. "Fundamentals of Remote Sensing" by Emilio Chuvieco and Alfredo Huete Online References: 1. NASA Remote Sensing Tutorial: https://earthobservatory.nasa.gov/features/RemoteSensing 2. European Space Agency Remote Sensing: https://www.esa.int/Applications/Observing_the_Earth/Remote_sensing 3. USGS Remote Sensing: https://www.usgs.gov/core-science-systems/national-geospatial-program/remote-sensing 4. Remote Sensing and GIS Resources: http://www.gisresources.com/remote-sensing-gis-resources/		

Course Code	SKILL ENHANCEMENT COURSE SEM – I	Credits	Lectures/Week
26GEOSC151	E- Content Creation	2	2
Course Objectives(CO): CO1: To develop foundational knowledge of remote sensing concepts, including electromagnetic radiation, sensor systems, platforms, and data acquisition methods. CO2: To enhance understanding of remote sensing principles, image interpretation techniques, and data processing methods for analyzing environmental and spatial information. CO3: To apply remote sensing techniques and tools for solving real-world problems related to land use mapping, environmental monitoring, and resource management. CO4: To develop analytical skills for evaluating remote sensing data to assess environmental changes, land use patterns, and resource distribution.			
Course Outcomes (OC): After successful completion of this course, students would be able to OC1: Identify and describe the key concepts, processes, and tools involved in e-content creation and its significance. OC2: Explain and illustrate the concepts, processes, and tools of e-content creation, and demonstrate understanding of audience-specific design. OC3: Utilize and develop e-content by applying appropriate principles, tools, and best practices tailored for diverse audiences and platforms. OC4: Evaluate and assess the effectiveness of e-content by examining its design, interactivity, multimedia integration, and audience engagement.			
Unit	Topics	No of Lectures	
I	Introduction to e-Content Creation • Introduction to e-content and its importance • Understanding the target audience • Planning and organizing e-content. • Best practices in e-content creation • Tools and software for e-content creation	15	
II	E-Content Creation Process • Developing a concept and theme for e-content • Creating engaging and interactive e-content	15	

	• Incorporating multimedia elements in e-content • Designing e-content for different devices and platforms • Testing and refining e-content	
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References:

1. "E-Learning and the Science of Instruction" by Ruth C. Clark and Richard E. Mayer
2. "Design for How People Learn" by Julie Dirksen
3. "e-Learning and the New Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning" by Ruth C. Clark and Richard E. Mayer
4. "The Art of Explanation: Making your Ideas, Products, and Services Easier to Understand" by Lee LeFever
5. "The Accidental Instructional Designer: Learning Design for the Digital Age" by Cammy Bean

Online References:

1. E-Learning Industry - a website providing articles, e-books, and online courses on e-learning and e-content creation.
2. Articulate - a platform offering e-learning software and training courses for creating online courses and interactive content.
3. Udemy - an online learning platform providing courses on e-content creation and instructional design.
4. LinkedIn Learning - an online learning platform offering courses on various topics, including e-content creation and instructional design.
5. eLearning Brothers - a website offering templates, stock assets, and custom development services for e-learning and e-content creation.

Course Code	MAJOR SEM – II	Credits	Lectures/Week
26GEOMJ211	Paper I: Principles of Geomorphology	4	4
Course Objectives(CO): CO1: To develop foundational knowledge of geomorphology, including the geological time scale, earth structure, plate tectonics, weathering, mass wasting, and landform representation techniques. CO2: To enhance understanding of geomorphological processes such as tectonic movements, erosion cycles, weathering, and the development of various landforms. CO3: To apply geomorphological principles and practical skills for solving real-world problems related to natural hazards, land use planning, environmental conservation, and interpretation of topographical maps. CO4: To develop analytical and interpretative skills to examine geomorphic processes, landform evolution, and to analyze topographic maps, drainage patterns, and geomorphic features.			
Course Outcomes (OC): After successful completion of this course, students would be able to OC1: Describe and outline the essential concepts of geomorphology, including the geological time scale, structure of the Earth, principles of plate tectonics, weathering processes, mass wasting, erosion cycles, and techniques for illustrating landforms. OC2: Explain and interpret the fundamental concepts of geomorphology, including geological time scale, Earth's structure, plate tectonics, weathering processes, mass wasting, erosion cycles, and methods for depicting landforms. OC3: Utilize and demonstrate geomorphological principles to address real-world issues such as disaster management, land use planning, and environmental conservation through understanding of geological processes and landform development. OC4: Evaluate and examine geomorphological processes, including geological time scale, Earth structure, plate tectonics, weathering, mass wasting, erosion cycles, and interpret geomorphic features using topographic maps.			
Unit	Topics	No of Lectures	
I	Introduction to Geomorphology • Definition, Nature and scope of geomorphology • Basic Key concepts in geomorphology • Geological Time Scale • Earth's interior structure	15	
II	Earth Movements and Tectonic Processes	15	

	• Exogenetic forces: folds and faults • Endogenetic forces: Earthquakes and volcanoes • Continental drift theory • Plate tectonic theory	
III	Geomorphic Processes and Evolution of Landforms • Weathering: Concept and types • Mass wasting: Concept and classification • Erosion and deposition Concept, types and theory (Davis and Penck's cycle of erosion) • Agents shaping landforms (fluvial, karst, aeolian, glacial, and sea water)	15
IV	Practical • Method of Showing Relief: contour and profiling (landforms & profile) • Drawing of contours and Identification of drainage pattern from the 1:50,000 Toposheets. • Field visit and Report writing	15

References:

1. Geomorphology – Savindra Singh
Singh, S. (2018). *Geomorphology*. Prayag Pustak Bhawan.
2. Principles of Geomorphology – William D. Thornbury
Thornbury, W. D. (2004). *Principles of Geomorphology*. Wiley.
3. Fundamentals of Geomorphology – Richard J. Huggett
Huggett, R. J. (2011). *Fundamentals of Geomorphology* (3rd ed.). Routledge.
4. Global Geomorphology: An Introduction to the Study of Landforms – Michael A. Summerfield
Summerfield, M. A. (1991). *Global Geomorphology: An Introduction to the Study of Landforms*. Longman.
5. The Basics of Geomorphology – Kenneth J. Gregory
Gregory, K. J., & Lewin, J. (2014). *The Basics of Geomorphology*. SAGE Publications.
6. Encyclopedia of Geomorphology – Andrew Goudie
Goudie, A. (Ed.). (2013). *Encyclopedia of Geomorphology*. Routledge.

Online References:

1. National Council of Educational Research and Training
<https://ncert.nic.in>
(Basic concepts of geomorphology and landforms for foundational learning)
2. SWAYAM

<https://swayam.gov.in>

(Online courses on physical geography and geomorphology)

3. Google

Earth

<https://earth.google.com>

(Visualization of landforms, drainage patterns, and terrain analysis)

4. United States Geological Survey

<https://www.usgs.gov>

(Comprehensive resource on earthquakes, volcanoes, landforms, and geomorphic processes)

Course Code	OPEN ELECTIVE SEM – II	Credits	Lectures /Week
26GEOOE231	Geo-Tourism and it's Management	2	2
Course Objectives(CO): CO1: To develop foundational knowledge of geo-tourism, including key concepts such as geodiversity, geoparks, historical and cultural aspects, and stakeholder roles. CO2: To enhance understanding of geo-tourism principles, including its socio-economic and environmental impacts, sustainability practices, and the significance of geo-tourism in regional development. CO3: To apply geo-tourism concepts and planning strategies for site selection, visitor management, interpretation, and the development of sustainable geo-tourism initiatives and marketing approaches. CO4: To develop analytical and evaluative skills to assess geo-tourism destinations, sustainability practices, stakeholder roles, and the use of technology and multimedia in enhancing tourism experiences.			
Course Outcomes (OC): After successful completion of this course, students would be able to OC1: Identify and describe key definitions and concepts related to geo-tourism, including geodiversity, historical and cultural aspects, and the roles of geoparks, stakeholders, and various geo-tourism practices. OC2: Interpret and discuss the fundamental concepts, principles, and significance of geo-tourism, covering geodiversity, historical and cultural dimensions, socio-economic and environmental impacts, sustainability practices, and stakeholder roles. OC3: Demonstrate and implement geo-tourism principles in real-world contexts by addressing issues such as site selection, visitor management, and interpretation, and by formulating sustainable geo-tourism strategies and marketing approaches. OC4: Examine and assess geo-tourism destinations and practices by investigating their socio-economic and environmental impacts, reviewing the effectiveness of sustainability measures, and evaluating the role of technology and stakeholder contributions in geo-tourism development.			
Unit	Topics	No of Lectures	
I	Introduction to Geo-Tourism	15	

	• Definition, concepts, and principles of Geo-Tourism • Overview of geodiversity and its significance in Tourism • Historical and cultural aspects of geo-Tourism • Socio-economic and environmental impacts of Geo-Tourism • Geo-tourism sustainability	
II	Geo-Tourism Planning and Management • Geoparks and Geo-Tourism destinations • Site selection and visitor management • Geo-Tourism marketing and promotion • Role of stakeholders in Geo-Tourism development • field visits and case studies	15
References: 1. Farsani, N. T., Coelho, C. O., & Costa, C. A. (Eds.). (2014). Geoheritage and Geotourism: A European Perspective. Springer. 2. Dowling, R. K., & Newsome, D. (Eds.). (2006). Geotourism: The Tourism of Geology and Landscape. Goodfellow Publishers. 3. Newsome, D., & Dowling, R. K. (2010). Geotourism: The Tourism of Geology and Landscape (2nd ed.). Goodfellow Publishers. 4. Staszak, J. F. (Ed.). (2018). Geotourism: An Emerging Sector in Tourism. CABI. Online References: 1. Global Geoparks Network: http://www.globalgeopark.org/ 2. The International Association of Geotourism: https://www.iageotourism.com/ 3. United Nations World Tourism Organization: https://www.unwto.org		

Course Code	VOCATIONAL SKILL COURSE SEM – II	Credits	Lectures/ Week
26GEOVSC241	Statistical Techniques in Geography	2	2
Course Objectives(CO): CO1: To develop foundational knowledge of statistical concepts, including types of data, data collection methods, sampling techniques, and basic statistical measures such as mean, median, mode, and standard deviation. CO2: To enhance understanding of statistical methods, including measures of central tendency, dispersion, and correlation techniques such as Karl Pearson's and Spearman's methods. CO3: To apply statistical tools and techniques for analyzing real-world data through data collection, sampling, and computation of statistical measures for practical problem-solving. CO4: To develop analytical skills to interpret and evaluate data using statistical measures and correlation methods, enabling meaningful conclusions and decision-making.			
Course Outcomes (OC): After successful completion of this course, students would be able to OC1: Recognize and define key terms and concepts related to data collection, sampling methods, and statistical measures such as mean, mode, median, and standard deviation, along with the formulas for Karl Pearson's and Spearman's correlation methods. OC2: Explain and differentiate the fundamental concepts and types of data collection, sampling techniques, and statistical measures, including mean, mode, median, mean deviation, quartile deviation, standard deviation, and correlation, as well as the methods of Karl Pearson and Spearman. OC3: Utilize and perform statistical techniques in practical contexts by selecting appropriate data collection and sampling methods, calculating measures of central tendency and variability, and employing correlation methods to interpret data in real-world situations such as market research and social surveys. OC4: Investigate and critique data sets by applying statistical measures such as mean deviation, quartile deviation, and standard deviation to reveal patterns and relationships, and by using Karl Pearson's and Spearman's methods to determine the strength and direction of correlations and justify conclusions.			
Unit	Topics	No of	

		Lectures
I	Data: • Meaning, and Types, • Collection of data, • Sampling Techniques and Methods, • Measures of central tendency: Mean, Mode, and Median.	15
II	Measures of dispersion: • Mean Deviation • Quartile Deviation • Standard deviation • Correlation • Karl Pearson's and Spearman's methods.	15

References:

1. Birch, T.W. (1976). Maps: Topographical and Statistical. Oxford University Press. London.
2. Downie, N.M and Heath, R.W. Basic Statistical Methods (1970). Harper and Row. New York
3. Gregory, S (2014). Statistical Methods and the Geographer. Taylor and Francis. London.
4. Singh, L. R. (2006). Fundamentals of Practical Geography. Sharda Pustak Bhawan, Allahabad.
5. Singh, R.L. & Singh, Rana P.B. (1993). Elements of Practical Geography (Hindi & English Editions), Kalyani Publishers, New Delhi.

Online References:

1. NCBI (National Center for Biotechnology Information) – Statistics Guide
<https://www.ncbi.nlm.nih.gov/books/>
(Detailed explanation of mean, median, mode, and statistical concepts used in research)
2. Carleton College – Statistics Tutorials
<https://serc.carleton.edu/mathyouneed/geomajors/intro-stats/index.html>
(Explains mean, median, mode, and their applications in real data analysis)
3. Great Learning – Statistics for Data Science
<https://www.mygreatlearning.com/data-science/tutorials/statistics-for-data-science>
(Covers data collection, standard deviation, and correlation concepts)

Course Code	SKILL ENHANCEMENT COURSE SEM – II	Credits	Lectures/ Week
26GEOSC251	Beginners Course to Calligraphy	2	2
Course Objectives(CO): CO1: To develop foundational knowledge of calligraphy, including its history, global significance, types, tools, and basic strokes used in different styles. CO2: To enhance understanding of various calligraphy styles, their characteristics, and the proper use of tools, techniques, and writing instruments. CO3: To apply calligraphy techniques through hands-on practice of strokes, scripts, letter formation, and the effective use of pens, nibs, brushes, and inks. CO4: To develop analytical and creative skills to evaluate and refine calligraphy designs based on the effectiveness of tools, techniques, and stylistic presentation.			
Course Outcomes (OC): After successful completion of this course, students would be able to OC1: Identify and describe the definition, history, global significance, types of calligraphy, tools, and basic strokes used in various calligraphy styles. OC2: Interpret and discuss the evolution, global significance, and characteristics of different calligraphy styles, along with the usage of tools and techniques. OC3: Demonstrate and practice calligraphy techniques by using appropriate tools and executing various scripts, strokes, and letter formations. OC4: Examine and evaluate the effectiveness of different calligraphy tools, techniques, and scripts in producing stylistic and visually appealing designs.			
Unit	Topics	No of Lectures	
I	Introduction to Calligraphy - Definition, History of calligraphy, Calligraphy at the Global level, Types of Calligraphy: Classical Calligraphy & Modern Calligraphy - Tool Kit, Different Types of Pens, Different Types of Nibs, Different Types of Brushes, Different Types of Inks - Practice Sessions: Display of Writing items, Discussion on the usage of different types of pens, nibs, and brushes through hands-on activities	15	
II	Foundation to Calligraphy	15	

	• Majuscules, Minuscules, Numbers, Learning Strokes, Sans Serif B- point, Celtic, Italian Script, Roman Script, Gothic Script • Practice Sessions: Learning and practicing strokes- Upstroke, Downstroke, Overturn, Under turn, Compound curve, Oval, Ascending loop. • Hands-on activities and Assessment on Sans Serif B-point, Celtic, Italian Script, Roman Script, Gothic Script, Flourishing	
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References:

1. Suepsuan, P. A. (2021). Start Calligraphy The Right way to write: Learn Calligraphy The Complete Book - Modern Calligraphy Pen For Beginners, Learning Resources Step By Step Number Line, Mastering Modern Calligraphy. Independently published.
2. C., & Co., T. P. (2020). Modern Calligraphy Set for Beginners: A Creative Craft Kit for Adults featuring Hand Lettering 101 Book, Brush Pens, Calligraphy Pens, and More. Paige Tate & Co

Evaluation Scheme for First Year 2026-27 (UG)

under NEP 2020 (4 credits)

I. Internal Evaluation for Theory Courses – 40 Marks

1) Continuous Internal Assessment (CIA) Assignment - Tutorial/ Case Study/ Project / Presentations/ Group Discussion / Ind. Visit. – 20 marks

2) Continuous Internal Assessment (CIA) ONLINE Unit Test – 20 marks - 30 Minutes

II. External Examination for Theory Courses – 60 Marks

Duration: 2 Hours

Theory question paper pattern:

Question	Based on	Marks
Q.1	Unit I A OR B (7 Marks) C OR D (8 Marks)	15
Q.2	Unit II E OR F (7 Marks) G OR H (8 Marks)	15
Q.3	Unit III I OR J (7 Marks) K OR L (8 Marks)	15
Q.4	Unit IV M OR N (7 Marks) O OR P (8 Marks)	15

- All questions shall be compulsory with internal choice within the questions.
- Each Question may be sub-divided into sub questions as a, b, c, d, etc. & the allocation of Marks depends on the weightage of the topic.

**NOTE: To pass the examination, attendance is compulsory in both
Internal & External Theory Examinations.**

Evaluation Scheme for First Year 2026-27 (UG)
under NEP 2020 (2 credits)

I. Internal Evaluation for Theory Courses – 20 Marks

1) Continuous Internal Assessment (CIA) Assignment - Tutorial/ Case Study/ Project / Presentations/ Group Discussion / Ind. Visit. – 10 marks

2) Continuous Internal Assessment (CIA) ONLINE Unit Test – 10 marks - 15 Minutes

II. External Examination for Theory Courses – 30 Marks

Duration: 1 Hour

Theory question paper pattern:

Question	Based on	Marks
Q.1	Unit I A OR B (7 Marks) C OR D (8 Marks)	15
Q.2	Unit II E OR F (7 Marks) G OR H (8 Marks)	15

- All questions shall be compulsory with internal choice within the questions.
- Each Question may be sub-divided into sub questions as a, b, c, d, etc. & the allocation of Marks depends on the weightage of the topic.

**NOTE: To pass the examination, attendance is compulsory in both
Internal & External Theory Examinations.**

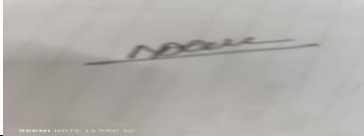
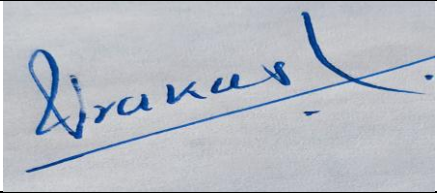
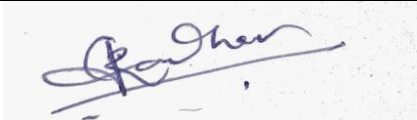
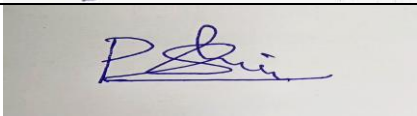
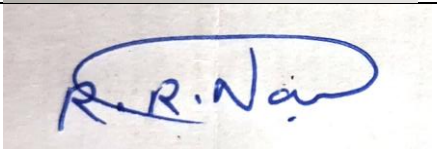
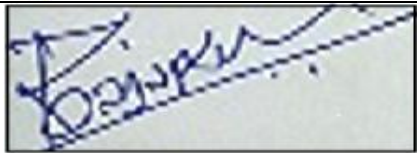
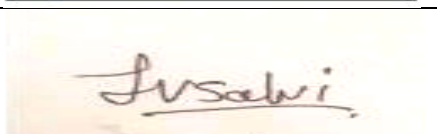
**FYBA Evaluation pattern and Question paper pattern for
Semester End Practical Examination of Major Course**

Internal Continuous Assessment: 40% (20 Marks)	Semester End Examination: 60% (30 Marks)	Duration for End semester examination
Viva/ assignment/ objective question test /Small experiments (15 Marks), Overall performance (5 Marks) = 20 Marks	As per paper pattern	1 hr 30 mins

**FYBA Evaluation pattern and Question paper pattern for
Semester End Practical Examination of Vocational Skill
Courses and Skill Enhancement Courses**

Internal Continuous Assessment: 40% (20 Marks)	Semester End Examination: 60% (30 Marks)	Duration for End semester examination
Viva/ assignment/ objective question test /Small experiments (15 Marks), Overall performance (5 Marks) = 20 Marks	As per paper pattern	1 hr 30 mins

Signatures of Team Members

Sr. No.	Name	Signature
1	Dr. Nilesh Kale	
2	Prof. Dr Prakash Dongre	
3	Dr. Ratnaprabha Jadhav	
4	Dr. Pravin Shinde	
5	Mr. Ramesh Nanaware	
6	Shri. Dnyaneshwar Bombe	
7	Mr. Rohan Rajapkar	
8	Ms. Lalita Salvi	

Letter Grades and Grade Points:

Semester GPA/ Programme CGPA Semester/ Programme	% of Marks	Alpha-Sign/ Letter Grade Result	Grading Point
9.00 - 10.00	90.0 – 100	O (Outstanding)	10
8.00 - < 9.00	80.0 - < 90.0	A+ (Excellent)	9
7.00 - < 8.00	70.0 - < 80.0	A (Very Good)	8
6.00 - < 7.00	60.0 - < 70.0	B+ (Good)	7
5.50 - < 6.00	55.0 - < 60.0	B (Above Average)	6
5.00 - < 5.50	50.0 - < 55.0	C (Average)	5
4.00 - < 5.00	40.0 - < 50.0	P (Pass)	4
Below 4.00	Below 40.0	F (Fail)	0
Ab (Absent)	-	Ab (Absent)	0

Justification for Bachelors in ARTS

1.	Necessity for starting the course:	.The FYBA Geography course builds a foundational understanding of physical and human geography. It addresses urban, environmental, and regional issues relevant to Mumbai. It also develops analytical, fieldwork, and geospatial skills for further studies and careers.
2.	Whether the UGC has recommended the course:	Yes
3.	Whether all the courses have commenced from the academic year 2023-24.	The course has already commenced in the university and in the academic year 2023-24 it is restructured under NEP 2020
4.	The courses started by the University are self-financed, whether adequate number of eligible permanent faculties are available?:	This course is aided / self-financed based on the sanction given by University of Mumbai to affiliated colleges time to time.
5.	To give details regarding the duration of the Course and is it possible to compress the course?:	The duration of the program is three years (6 semesters). It is not possible to compress the course.
6.	The intake capacity of each course and no. of admissions given in the current academic year:	120 per division
7.	Opportunities of Employability / Employment available after undertaking these courses:	Graduates can explore diverse career opportunities such as urban and regional planning, GIS and remote sensing, environmental consultancy, disaster management, tourism development, and digital content creation. They can find employment in government agencies, NGOs, research institutions, media, and private consultancy sectors. These courses also support entrepreneurship, skill-based careers (like calligraphy and e-content creation), and provide a strong base for higher education and competitive examinations.