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ताळगांव पठार,
गोंय – ४०३ २०६
फोन : +९१-८६६९६०९०४८

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(Accredited by NAAC)

GU/Acad –PG/BoS -NEP/2024-25/780 Date: 24.01.2025

CIRCULAR

Ref: GU/Acad –PG/BoS -NEP/2024/116 dated 17.05.2024

In supersession to the above referred Circular, the Syllabus of Semesters I to VIII of the **Bachelor of Arts in Geography** Programme is attached with following changes.

- Number of Credits for Course GOG-221 "Spatial Planning for Tourism Operations (Vocational)" shall be 3T+1P instead of 1T+3P.

The Dean/ Vice-Deans of the D.D. Kosambi School of Social Sciences and Behavioural Studies and Principals of the Affiliated Colleges offering the **Bachelor of Arts in Geography** programme are requested to take note of the above and bring the contents of the Circular to the notice of all concerned.

ASHWIN VYAS LAWANDE
Digitally signed by ASHWIN VYAS LAWANDE
Date: 2025.01.24 14:47:27 +05'30'

(Ashwin V. Lawande)
Deputy Registrar – Academic

To,

1. The Dean, D.D. Kosambi School of Social Sciences and Behavioural Studies, Goa University.
2. The Vice-Deans, D.D. Kosambi School of Social Sciences and Behavioural Studies, Goa University.
3. The Principals of Affiliated Colleges offering the Bachelor of Arts in Geography Programme.

Copy to:

1. The Director, Directorate of Higher Education, Govt. of Goa
2. The Chairperson, BOS in Geography.
3. The Controller of Examinations, Goa University.
4. The Assistant Registrar, UG Examinations, Goa University.
5. Directorate of Internal Quality Assurance, Goa University for uploading the Syllabus on the University website.

Programme Structure for Semester I to VIII Bachelor of Arts in Geography										
Semester	**Major -Core**	**Minor**	**MC**	**AEC**	**SEC**	**I**	**D**	**VAC**	**Total Credits**	**Exit**
I	**GOG-100 Foundations in Geography (3+1)**	**GOG-111 Geography of Sustainable Development (4)** **OR** **GOG-112 Geography of Climate Change (4)**	**GOG-131 Astronomical Geography (3)**		**GOG-141 Elements of Environmental Impact Assessment (EIA) (1T+2P)**					
II		**GOG-113 Application of Disaster Risk Reduction and Mitigation (4)** **OR** **GOG-114 Fundamentals of Tourism Geography (4)**	**GOG-132 Major World Environments (3)**		**GOG-142 Introduction to the Principles and Practices of Land Use Planning and Management (1T+2P) (DELETED)** **GOG-143 Environmental Journalism (1T+2P)**					**GOG-161 Exit Course "Professional Tour Guide" (1T+3P)**

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III	GOG-200 Development of Geographic Thought (4) GOG-201 Geography of Resources (4)	GOG-211 Economic Geography (4) OR GOG-212 Geography of Environment and Development (4)	GOG-231 Google Earth: Bring the World inside the Classroom (3)		GOG-241 Traditional Knowledge System in Resource Management (1T+2P)					
IV	GOG-202 Principles of Population Geography (4) GOG-203 Geopolitical Geography (4) GOG-204 Physical Landscape of India (4)	GOG-221 Spatial Planning for Tourism Operations (Vocational) (3T+1P)								GOG-261 Exit Course "GIS Analyst" (1T+3P)

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	GOG-205 Physical Geography of Goa (2)								
V	**GOG-300 Principles Geomorphology (3T+1P)** **GOG-301 Principles of Remote Sensing (3T+1P)** **GOG-302 Statistical Methods in Geography (4)** **GOG-303 Economic Landscape of Goa (2)**	**GOG-321 Application of Field Study and Survey Techniques in Geography (Vocational) (4)**							

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VI	**GOG-304 Principles of Climatology (3T+1P)** **GOG-305 Fundamentals of Geographical Information System (3T+1P)** **GOG-306 Economic Landscape of India (4)** **GOG-307 Project (4)**	**GOG-322 Applied Travel and Tourism Geography (Vocational) (1T+3P)**								
VII	**GOG-400 Analytical Techniques in Geography (4)**	**GOG-411 Contemporary Issues in Geography (4)** **OR**								

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	GOG-401 Geography of Coast (4) **GOG-402 Watershed Development in Geography (3T+1P)** **GOG-403 Research Methodology in Geography (RM)* (4)**	**GOG-412 Applied Geography (4)**								
VIII	**GOG-404 Livelihood and Natural Resource Management (4)** **GOG-405 Geography of Social Well-being (4)**	**GOG-413 Geography of Transport Network and Flow Analysis (4)** **OR** **GOG-414 Geography of Agriculture (4)**								

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	GOG-406 Geography of Rural Settlement (4) **GOG-407 Geography of Urban Settlement (4)**									

DOUBLE MAJOR SUBJECTS

Semester	Major Core Courses	Credits
II	**GOG-100:** Foundations in Geography	3+1
III	**GOG-201:** Geography of Resources	4
IV	**GOG-202:** Principles of Population Geography	4
V	**GOG-302:** Statistical Methods in Geography	4
VI	**GOG-306:** Economic Landscape of India	4
	GOG-307: Project	4
VII	**GOG-401:** Geography of Coast	4
	GOG-402: Watershed Development in Geography	3+1

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Name of the Programme : **B. A. Geography**
Course Code : **GOG-100**
Title of the Course : **Foundations in Geography**
Number of Credits : **3+1**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives:	Foundations in Geography is an introductory course that provide students with a comprehensive understanding of the discipline of Geography, its fundamental concepts and principles. This course aims to develop students' spatial thinking skills and geographic literacy by introducing them to the basic concepts of geographic analysis. Further, the objective of the practical component is to equip students with technical knowledge and computer skills necessary to pursue a career in the field of Geospatial Technology.	
		No. of Hours
Content	**1. Introduction:** • Introduction & Definitions of Geography; • Geography: Whether Science or Social Science; • The Changing Nature of Geography; • Divisions of Geography and Branches of Geography and its relations with other disciplines; • Geography and Nationalism; • Evolution of Geography from classical times to modern period; • Career Prospects in Geography;	**15**
	2. Geographical Concepts and Approaches: • Geography as Inter-disciplinary, Intra-disciplinary and Multi-disciplinary Science; • Contemporary Approaches in Geography: Area, Spatial, Locational & Geographic Systems Analysis; • Five Themes of Geography; • Four Traditions of Geography: Spatial or Locational Tradition, Area Studies or Regional Tradition, Man-Land Tradition, Earth Science Tradition;	**15**
	3. Earth and it's spatial relation: • The Universe; • Galaxies and Solar system; • Origin of the Earth; • Geological Time Scale • Earth as a planet and celestial positions its shape and size; • Rotation and revolution of Earth; • Lunar and Solar Eclipses and their types • Positions on Map and Globe, Geographical coordinates and	**15**

	its characteristics, • World time zones, standard and local time	
	4. Digital Cartography **A) Introduction to Digital Cartography:** • Definition, concepts of cartography. • Nature and Scope, • History and development of Cartography, • Characteristics of Map. • Categories of maps. • Methods of mapping, relief maps, thematic maps. • Trends in Cartography **B) Application of Computer Cartography:** • Hardware and software for computer cartography; • Representation of geospatial data using Open-Source Office Management Software or MS Excel: Column charts, Bar charts, Line charts, Pie charts, Scatter charts, Area charts, Stock charts, Radar charts, Bubble charts, Heat maps, Waterfall charts and Tree maps. **Note:** 1. Each student is required to complete a minimum of two exercises from the above list and maintain a journal both hard as well as soft copy. 2. In case there are insufficient computers available in the geography lab, the practical sessions may be conducted in the IT lab or any other designated location within the respective college. 3. For lab sessions, students are permitted to use their own laptops.	**30**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings	1. Blij, H. J. de, & Muller, P. O. (2010). Geography: Realms, Regions, and Concepts. John Wiley & Sons. 2. Clifford, N., Cope, M., & Gillespie, T. W. (2016). Key Concepts in	

Geography. Sage.
3. D. K. (2017). Geography: A Visual Encyclopaedia. DK. ▪ Dikshit R.D. (2000) Geographical Thought - A Contextual History of Ideas, P. Hall of India Pvt.
4. Das Gupta and Kapoor. (2004) Principles of Physical geography. S. Chand, New Delhi
5. Fouberg, E. H., Murphy, A. B., & Blij, H. J. de. (2016). Human Geography: People, Place, and Culture. John Wiley & Sons.
6. Getis, A., Bjelland, M., Getis, V. A., & Fellmann, J. D. (2015). Introduction to Geography. McGraw-Hill Education. ▪ Goh Cheng Leong: Certificate Physical and Human Geography, Oxford University Press, New Delhi.
7. Harvey, David. (1969). Explanation in Geography. Edward Arnold.
8. Harvey, David. (1972). Explanation in Geography, Edward - Arnold, London.
9. Hussain, Majid (1984): Evolution of Geographical Thought, Rawat Publications, Jaipur.
10. Knox, P. L., & Marston, S. A. (2019). Human Geography: Places and Regions in Global Context. Pearson Education.
11. Lunn, J. (2017). Geography: A Beginner's Guide. One world Publications.
12. Matthews, J. A., & Herbert, D. T. (2015). Geography: A Very Short Introduction. Oxford University Press.
13. McKnight, T. L., & Hess, D. (2013). Physical Geography: A Landscape Appreciation. Prentice Hall.
14. Perpillou A (1977). Human Geography, Longman Press, London.
15. Rubenstein, J. M. (2017). The Cultural Landscape: An Introduction to Human Geography. Pearson Education.
16. Savindra Singh (2015). Environmental Geography, Pravalika Publication, Allahabad
17. Strahler, A., & Strahler, A. H. (2016). Introduction to Physical Geography. John Wiley & Sons.
18. Waugh, D. (2011). Geography: An Integrated Approach. Nelson Thornes.

Reference for Practical Component:

1. Cromley, R.G.(1992): Digital Cartography, Prentice-Hall, New York.
2. Dent, B.D.(1999): Cartography- Thematic Map Design, 5th Edition, WCB Mc Grew Hill, Boston.
3. Kraak M.J.and Ormeling.F (2004): Cartography: Visualization of Spatial Data, Pearson Edu.pvt Ltd. (Singapore) Inelian Branch, New Delhi.
4. Mishra, R.P. (1973): Fundamentals of Cartography, Prasaranga, University of Mysore.
5. Monkhouse, F.J.R. & Wilkinson H.R.(2000):Maps and Diagrams, Methuen &Co. London.
6. Monmonier, M.S. (1982): Computer Assisted Cartography: Principles and Prospects, Prentice Hall.
7. Raise, Erwin (1962): Principles of Cartography, McGraw-Hill, New York
8. Rampal, K.K.(1993): Mapping and Compilation, Concept Publishing Co. New Delhi.

	9. Robinson, H. et al (1995): Elements of Cartography, 6th Edition, John Wiley & Sons, New York. 10. Sarkar, A (2009): Practical Geography: A Systematic Approach, Orient Longman, Kolkatta 11. Slocum, T.A.et al.(2008): Thematic Cartography and Geovisualization, 3rd Edition, Prentice Hall.
Course Outcomes	By the end of this course, students will be able to: 1. **Analyse** the historical roots of geography and its basic concepts. 2. **Identify** the inter-disciplinary, intra-disciplinary, and multi-disciplinary nature of Geography 3. **Understand** the Earth and its spatial relations to Universe, galaxies, solar system, and the positions of celestial bodies 4. **Develop** the ability to represent geospatial data using various techniques such as histograms, bar graphs, line graphs, scatter diagrams, pie diagrams, trend lines etc.
Instructions	1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner. 2. The total workload for this course is 30 hours, which corresponds to 1 credit. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions. 3. There are a total of 15 laboratory sessions scheduled, with a total duration of 30 hours. 4. Each batch will comprise of 20 students. 5. The practical examination will be of 2 hours duration and will carry 25 marks. 6. The assessment for the practical examination also includes a total of 2.5 marks for the journal and 2.5 marks for the Viva Voce examination. 7. The practical examination is scheduled to be conducted at the end of the semester in either the Geography Laboratory or a designated location exclusively assigned for the purpose. 8. In the event of a University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College). 9. In case of a College Examination, the Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

Name of the Programme : **B. A. Geography**
Course Code : **GOG-111**
Title of the Course : **Geography of Sustainable Development**
Number of Credits : **4**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course provides an overview of sustainable development from a geographical perspective. It covers key concepts and themes in sustainable development, such as economic growth, environmental protection, social equity, and political governance. The course also examines the challenges and opportunities of sustainable development in different regions and countries, and the role of geography in promoting sustainable development.	
		No. of hours
Content:	**1. Introduction to Sustainable Development** • Definition and history of sustainable development • Key principles and concepts of sustainable development • Sustainability challenges and opportunities • The Millennium Development Goals • Sustainable Development Goals: National Strategies and International Experiences	**15**
	2. Geography and Sustainable Development • Geographical perspectives on sustainable development • Spatial analysis and sustainable development • Regional and local approaches to sustainable development	**15**
	3. Economic Dimension of Sustainable Development • Economic growth and development • Sustainable economic models and strategies • Globalization and sustainable development Environmental Dimension of Sustainable Development • Environmental protection and conservation • Natural resource management and sustainability • Climate change and sustainable development	**15**
	4. Social Dimension of Sustainable Development • Social equity and justice • Poverty and inequality • Health, education, and human development Political Dimension of Sustainable Development • Governance and institutions • Participatory democracy and citizen engagement • International cooperation and sustainable development	**15**

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Pedagogy:	• Lectures for theoretical foundations. • Group discussions and seminars for collaborative learning. • Presentations and case studies for real-world application. • Assignments and blended learning for interactive engagement. • Gamification and problem-solving approaches for practical skill development. • Experiential learning through fieldwork and outdoor activities. • Discussion-based teaching for critical thinking. • Brainstorming sessions for idea generation. • Flipped classroom pedagogy for active participation. • Art Integrated Learning for creative expression. • Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) Just Sustainabilities: Development in an Unequal World. London: Earthscan. (Introduction and conclusion.). 2. Ayers, Jessica and David Dodman (2010) "Climate change adaptation and development I: the state of the debate". Progress in Development Studies 10 (2): 161-168. 3. Baker, Susan (2006) Sustainable Development. Milton Park, Abingdon, Oxon; New York, N.Y.: Routledge. (Chapter 2, "The concept of sustainable development"). 4. Biermann, F., & Pattberg, P. (Eds.). (2012). Global environmental governance reconsidered. MIT Press. 5. Brosius, Peter (1997) "Endangered forest, endangered people: Environmentalist representations of indigenous knowledge", Human Ecology 25: 47-69. 6. Lohman, Larry (2003) "Re-imagining the population debate". Corner House Briefing 28. 7. Martínez-Alier, Joan et al (2010) "Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm" Ecological Economics 69: 1741-1747. 8. Merchant, Carolyn (Ed.) (1994) Ecology. Atlantic Highlands, N.J: Humanities Press. (Introduction, pp 1-25.) 9. Osorio, Leonardo et al (2005) "Debates on sustainable development: towards a holistic view of reality". Environment, Development and Sustainability 7: 501-518. 9. Robbins, Paul (2004) Political Ecology: A Critical Introduction. Blackwell Publishing 10. Sachs, J. (2015). The age of sustainable development. Columbia University Press. 11. United Nations Development Programme. (2019). Human Development Report 2019: Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century. UNDP
Course Outcomes:	By the end of this course, students will be able to: 1. **Understand** the concept and principles of sustainable development

	2. **Analyze** the economic, environmental, and social dimensions of sustainable development 3. **Examine** the role of geography in sustainable development 4. **Evaluate** the challenges and opportunities of sustainable development in different regions and countries 5. **Develop** critical thinking and analytical skills to address sustainability issues

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Name of the Programme : **B. A. Geography**
Course Code : **GOG-112**
Title of the Course : **Geography of Climate Change**
Number of Credits : **4**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives	This is an introductory course in Geography of Climate Change which is designed 1. To introduce students to the nature and scope of climate change and its implications for the Earth's systems. 2. To examine the scientific evidence for climate change and the causes and consequences of this phenomenon. 3. To explore the geography of climate change, including its impacts on biogeography, oceanography, atmospheric sciences, and earth system sciences. 4. To evaluate strategies for mitigating and adapting to climate change, including the role of science and technology, economic and political considerations, and international frameworks and agreements. 5. To analyze case studies of climate change impacts and responses, including the social and economic implications of climate change.	
		No. of Hours
Content	**1. Introduction to Climate Change** • Definition, nature and scope of climate change • Historical perspective of climate change • The evidence of climate change • Causes and consequences of climate change	**15**
	2. Climate Change and the Earth's System • The carbon cycle and the climate system • The greenhouse effect and global warming • The impacts of climate change on land, water and the atmosphere • The role of human activities in climate change	**15**
	3. Mitigation and Adaptation • Strategies for mitigating climate change • Approaches to adaptation to climate change • The role of science and technology in mitigation and adaptation • Economic and political considerations in mitigation and adaptation	**15**
	4. International Frameworks and Agreements • United Nations Framework Convention on Climate Change (UNFCCC)	**15**

	• Intergovernmental Panel on Climate Change (IPCC) • Kyoto Protocol • Paris Agreement	
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings	1. Gore, A. (2009). Our Choice: A Plan to Solve the Climate Crisis. Rodale Books. 2. Hulme, M. (2009). Why We Disagree About Climate Change: Understanding Controversy, Inaction, and Opportunity. Cambridge University Press. 3. Intergovernmental Panel on Climate Change. (2014). Climate Change 2014: Impacts, Adaptation, and Vulnerability. Cambridge University Press. 4. IPCC. (2018). Global Warming of 1.5°C: Summary for Policymakers. Intergovernmental Panel on Climate Change. 5. IPCC. (2014). Climate Change 2014: Mitigation of Climate Change. Intergovernmental Panel on Climate Change. 6. Schneider, S. H. (2009). Science as a Contact Sport: Inside the Battle to Save Earth's Climate. National Geographic Books. 7. Stern, N. (2007). The Economics of Climate Change: The Stern Review. Cambridge University Press. 8. UNFCCC. (2015). Adoption of the Paris Agreement. United Nations Framework Convention on Climate Change. 9. Wilbanks, T. J., et al. (2014). Climate Change and Infrastructure, Urban Systems, and Vulnerabilities: Technical Report for the U.S. Department of Energy in Support of the National Climate Assessment. U.S. Department of Energy. 10. WMO. (2019). State of the Global Climate 2018. World Meteorological Organization.	
Course Outcomes	By the end of this course, students will be able to: 1. Explain the nature and scope of climate change and its historical context. 2. Identify the scientific evidence for climate change and the causes and consequences of this phenomenon.	

	3. Analyze the impacts of climate change on land, water, and the atmosphere. 4. Evaluate strategies for mitigating and adapting to climate change, including the role of science and technology, economic and political considerations, and international frameworks and agreements. 5. Apply geographic principles and concepts to analyze case studies of climate change impacts and responses, and to assess the social and economic implications of climate change.

Issued on: 24/01/2025

Name of the Programme : **B. A. Geography**
Course Code : **GOG-131**
Title of the Course : **Astronomical Geography**
Number of Credits : **3**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives:	Astronomical Geography is an introductory course that provides a comprehensive overview of the science of astronomy in relation to Geography. The course covers the historical development of astronomy, celestial coordinates and time, the electromagnetic spectrum, imaging and spectroscopy, the Solar System, stars and stellar evolution, galaxies and cosmology, as well as special topics such as exoplanets, dark matter, dark energy and gravitational waves. Throughout the course, students will have opportunities to engage in hands-on activities and observations of the night sky.	
		No. of Hours
Content:	**Introduction to Astronomy** • What is astronomy? • Relationship of Astronomy with Geography • Historical development of astronomy in relation to Geography • The Solar System • The Sun and its properties • The planets and their properties • Dwarf planets, asteroids, comets and constellations	**15**
	Stars and Stellar Evolution • Types of stars • Stellar properties and life cycle Star clusters and their properties • Galaxies and Cosmology • Types of galaxies • Formation and evolution of galaxies • The Big Bang and the expanding universe • Exoplanets and the search for life • Dark matter and dark energy	**15**
	Introduction to the night sky Celestial coordinates and time **Observing the Sky:** • The naked eye and telescopes during prevailing season • Field Diary on Sky Observations	**15**
Pedagogy:	• Lectures for theoretical foundations. • Group discussions and seminars for collaborative learning. • Presentations and case studies for real-world application. • Assignments and blended learning for interactive engagement. • Gamification and problem-solving approaches for practical skill	

	development. • Experiential learning through fieldwork and outdoor activities. • Discussion-based teaching for critical thinking. • Brainstorming sessions for idea generation. • Flipped classroom pedagogy for active participation. • Art Integrated Learning for creative expression. • Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Greene, Brian. The Elegant Universe. Vintage Books, 2000. 2. Greene, Brian. The Fabric of the Cosmos. Vintage Books, 2004. 3. Hawking, Stephen. The Universe in a Nutshell. Bantam Books, 2001. 4. Hawking, Stephen. A Brief History of Time. Bantam Books, 1998. 5. Kaku, Michio. The Physics of the Impossible. Doubleday, 2008. 6. Kuhn, Thomas S. The Structure of Scientific Revolutions. University of Chicago Press, 1962. 7. Rey, H.A. The Stars: A New Way to See Them. Houghton Mifflin, 1976. 8. Sagan, Carl. Cosmos. Random House, 1980. 9. Tyson, Neil de Grasse. Astrophysics for People in a Hurry. W.W. Norton & Company, 2017. 10. Tyson, Neil deGrasse. Death by Black Hole: And Other Cosmic Quandaries. W.W. Norton & Company, 2007.
Course Outcomes:	By the end of the course, students will be able to: 1. **Analyze and evaluate** the interconnections between astronomy and geography, recognizing how astronomical knowledge informs geographic understanding and vice versa. 2. **Compare and contrast** the planets based on their properties, categorizing them into terrestrial (inner) planets and gas giants (outer) planets. 3. **Define and classify** galaxies, and discuss their formation and evolution. 4. **Create and maintain** a detailed field diary documenting observations of the night sky, including celestial events, object sightings, and personal reflections, to enhance understanding and analysis of astronomical observations.

Name of the Programme : **B. A. Geography**
Course Code : **GOG-141**
Title of the Course : **Elements of Environmental Impact Assessment (EIA)**
Number of Credits : **1+2=3**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives	The course provides an introduction to Environmental Impact Assessment (EIA) processes and procedures. It covers the principles and concepts of EIA, including the identification of potential environmental impacts, the evaluation of their significance, and the formulation of mitigation measures	
		No. of hours
Content	**1. Introduction to Environmental Impact Assessment** • Definition, principles, and objectives of EIA • Types of EIA (screening, scoping, baseline study, impact assessment, mitigation, monitoring, and auditing) • International frameworks and conventions (e.g., NEPA, SEA, EIA Directive, Aarhus Convention) EIA Process • The EIA process and its stages (initiation, screening, scoping, impact assessment, mitigation, review, and decision-making) • Key stakeholders and their roles (proponent, government agencies, public, NGOs, experts) Examples of EIA process in different sectors (e.g., energy, mining, infrastructure) Legal and Institutional Frameworks • National and international laws and regulations governing EIA	**15**
	2. Practical Component 1: • Quality assessment of soil using field kit: pH and Organic Carbon and interpretation of the data. • Interpretation of air quality using data from Goa Pollution Control Board • Preparation of the report	**30**
	3. Practical Component 2: • Preparation of questionnaire for perception survey on environmental problems. • Preparation of check-list for Environmental Impact Assessment of an urban / industrial project • Survey to be carried out of any urban or industrial project. • Tabulation of the data • Structure and contents of an EIA report	**30**

	• Preparation of the report • Review and assessment of an EIA report	
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings	1. Anjaneyulu, Y., & Reddy, K. R. K. (2017). Environmental impact assessment: Methodologies and applications. Discovery Publishing House. 2. Canter, L. W. (2017). Environmental impact assessment (4th ed.). CRC Press. 3. Glasson, J., Therivel, R., & Chadwick, A. (2012). Introduction to environmental impact assessment (4th ed.). Routledge. 4. Krishnamurthy, C. V. (2015). Environmental impact assessment: Principles and procedures. SAGE Publications India. 5. Lee, N., Colley, M., & Dale, P. (2006). Environmental assessment in practice. Routledge. 6. Pandey, G. N., & Sharma, B. K. (2012). Environmental impact assessment in India. TERI Press. 7. Petts, J. (2017). Handbook of environmental impact assessment (2nd ed.). Wiley-Blackwell. 8. Rajagopalan, R. (2004). Environmental impact assessment: A guide to best professional practices. Oxford University Press. 9. Ross, S., & Morrison-Saunders, A. (2014). Environmental impact assessment and sustainability assessment: Towards a unified approach. Edward Elgar Publishing. 10. Wood, C. (2003). Environmental impact assessment: a comparative review (2nd ed.). Prentice Hall. 11. Zafar, S. M. (2005). Environmental impact assessment: Theory and practice. A. P. H. Publishing Corporation.	
Course Outcomes	Upon completion of the course, students will be able to: 1. Understand the principles and concepts of EIA 2. Identify and evaluate potential environmental impacts 3. Understand the legal and institutional frameworks governing EIA 4. Apply EIA methodologies to real-world projects	
	Assessment and Evaluation of the Course:	

	The practical component (2 credits) of 50 marks will be assessed in the following manner: Intra Semester Assessment: Three ISA's of 5 marks each, the best two scores shall be considered. Semester End Assessment: 1. Maintenance of Practical Record/Journal : 5 marks 2. Report Submission : 10 Marks 3. Viva Voce Examination : 5 marks 4. Written examination based on the practical syllabus : 20 marks

Name of the Programme : **B. A. Geography**
Course Code : **GOG-113**
Title of the Course : **Application of Disaster Risk Reduction and Mitigation**
Number of Credits : **4**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives	The main objective of this paper is to orient the students to apply the fundamental knowledge of disaster risk reduction, management and mitigation from a geographical perspective. It is to develop preparedness amongst the students as the catalyst in the Society.	
		No. of hours
Content	**1. Fundamentals of Application of Disaster Risk Reduction and Mitigation:** • Understanding the Threat, • Mental Preparedness, • Logistics, • Coordination, • Warning Signals, • Communication Disaster Mitigation in Geography	**15**
	2. Climate Change: • Understanding Climate Change; • Green House Gases and Global Warming; • Global Climatic Assessment- IPCC	**15**
	3. Impact of Climate Change: • Agriculture and Water; • Flora and Fauna; • Human Health Adaptation and Mitigation: Global Initiatives with Particular Reference to South Asia. • National Action Plan on Climate Change; Role of Local Institutions (Urban Local Bodies, Panchayats)	**15**
	• Working with the Local Disaster Management Committee in assessing local disasters. • Participation in Disaster Drill or Mock Drill: National Disaster Relief Force (NDRF)/ State Disaster Relief Force (SDRF)/ Emergency and Fire Extinguishing Services/Local Taluka Authorities. • Preparing a Disaster Management Plan for College/ Village/ Panchayat/ Taluka, or any other place with the help of Emergency and Fire Extinguishing Services or in-house expertise	**15**
Pedagogy	1. Lectures for theoretical foundations.	

	2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings	1. Government of India. (1997) Vulnerability Atlas of India. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India. 2. IPCC (2014) Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 3. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disasters, Sage Publication, New Delhi. 4. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disasters, Macmillan, Delhi. 5. Singh, R.B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi. Chapter 1, 2 and 3 6. Singh, R. B. (ed.), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publications, New Delhi. 7. Sinha, A. (2001). Disaster Management: Lessons Drawn and Strategies for Future, New United Press, New Delhi. 8. Stoltman, J.P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications. Dordrecht. 9. Singh Jagbir (2007) “Disaster Management Future Challenges and Opportunities”, 2007. Publisher- I. K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
Course Outcomes	Upon completing this course, students will be able to: 1. Understand the threats posed by natural and human-induced disasters, and the importance of disaster risk reduction and mitigation. 2. Develop mental preparedness for disasters, and understand the importance of logistics, coordination, and warning signals in disaster management. 3. Analyze the impact of climate change on agriculture, water, flora, and fauna, and human health. 4. Understand the concepts of adaptation and mitigation in the context

	of global initiatives, with particular reference to South Asia. 5. Analyze the National Action Plan on Climate Change, and the role of local institutions such as urban local bodies and panchayats in disaster risk reduction and mitigation. 6. Apply their knowledge and skills to prepare a mini project report based on a field-based case study of a disaster, and develop a preparedness plan for their respective college or locality. Overall, the course will equip students with the knowledge and skills to understand the threats posed by disasters and climate change, and to develop effective strategies for disaster risk reduction and mitigation

Name of the Programme : **B. A. Geography**
Course Code : **GOG-114**
Title of the Course : **Fundamentals of Tourism Geography**
Number of Credits : **4**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives	This course provides an overview of tourism geography, including the history of tourism, tourist behavior, tourism planning and development, and the impacts of tourism on destinations. Students will explore the geography of different types of tourism, such as ecotourism, cultural tourism, adventure tourism, and beach tourism. The course will also cover issues related to sustainable tourism, such as ecotourism certification, sustainable tourism planning, and community-based tourism.	
		No. of hours
Content	**1. Introduction to Tourism Geography** • Definition of Tourism Geography • Significance of Tourism Geography • Historical development of tourism • Tourist behaviour	**15**
	2. Geography of Different Types of Tourism • Ecotourism • Cultural tourism • Adventure tourism • Beach tourism • Community-based tourism • Medical Tourism • Pilgrimage Tourism	**15**
	3. Impacts of Tourism on Destinations • Economic impacts • Social impacts • Cultural impacts • Environmental impacts	**15**
	4. Tourism Planning and Development • Tourism planning process • Sustainable tourism planning • Stakeholder analysis • Sustainable tourism development • Ecotourism certification • Field Visit and Report (within the State/ District/ Taluka)	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning.	

	3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings	1. Buckley, R. (2012). Sustainable Tourism: Research and Reality. Annals of Tourism Research, 39(2), 528-546. 2. Hall, C. M., & Page, S. J. (2014). The Geography of Tourism and Recreation: Environment, Place, and Space. Routledge. 3. Holden, A. (2013). Environment and Tourism. Routledge. 4. Lew, A. A., & Cheer, J. M. (1999). Tourism in world cities: Theoretical perspectives (Vol. 2). Psychology Press. 5. Page, S. J., & Connell, J. (2014). Tourism: A modern synthesis. Cengage Learning. 6. Ritchie, J. R. B., & Crouch, G. I. (2003). The competitive destination: A sustainable tourism perspective. CABI. 7. Ryan, C. (2017). Tourism and Leisure: Local Communities and Sustainable Futures. Channel View Publications. 8. Tribe, J. (2017). The economics of recreation, leisure and tourism. Routledge. 9. UNWTO. (2019). UNWTO World Tourism Barometer, Volume 17, January 2019. United Nations World Tourism Organization. 10. Weaver, D. B., & Lawton, L. J. (2014). Tourism Management. John Wiley & Sons. 11. Weaver, D. B. (2011). Sustainable tourism: Theory and practice. Channel View Publications. 12. Williams, A. M., & Hall, C. M. (2002). Tourism and migration: New relationships between production and consumption. Ashgate Publishing, Ltd.
Course Outcomes	Upon completing this course, students will be able to: 1. To introduce students to the concept of tourism geography and its significance in the study of tourism. 2. To provide an overview of the history of tourism and tourist behavior. 3. To explore the geography of different types of tourism, such as ecotourism, cultural tourism, adventure tourism, and beach tourism. 4. To understand the process of tourism planning and development, including the role of stakeholders and the challenges of sustainable tourism. 5. To analyze the impacts of tourism on destinations, including economic, social, cultural, and environmental impacts.

	6. To examine issues related to sustainable tourism, such as ecotourism certification, sustainable tourism planning, and community-based tourism.

Name of the Programme : **B. A. Geography**
Course Code : **GOG-132**
Title of the Course : **Major World Environments**
Number of Credits : **3**
Effective from AY : **2023-24**

Pre-requisites for the Course:	Nil	
Course Objectives	This course explores the major terrestrial environments around the world. Students will examine the physical and biological characteristics of each environment, the adaptations of organisms to these environments, and the human impact on these environments. The course also covers conservation strategies and policies aimed at mitigating human impact on these environments.	
		No. of hours
Content	**1. Introduction to Terrestrial Environments** • Overview of terrestrial environments • Physical and biological characteristics of terrestrial environments • Ecosystem services provided by terrestrial environments • Equatorial Region, Monsoon Region, Tropical Grasslands Region (Savannas) with reference to Geographical Location and Conditions, Physical and biological characteristics, Adaptations of organisms to equatorial regions and Human impact on the Region	**15**
	2. Temperate Grasslands Region (Prairies), Arctic Region, Hot Desert Region, Mediterranean Region with reference to Geographical Location and Conditions, Physical and biological characteristics, Adaptations of organisms to equatorial regions and Human impacton the Region	**15**
	3. Conservation Strategies • Principles of conservation • Strategies for sustainable management of natural resources • Contemporary Environmental Issues Global environmental change	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking.	

	8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings	1. Bodenhamer, D. J., Corrigan, J., & Harris, T. M. (Eds.). (2010). The spatial humanities: GIS and the future of humanities scholarship. Indiana University Press. 2. Chapman, J. L. (2014). Biomes and ecosystems: An encyclopedia. Greenwood Publishing Group. 3. Cloke, P., Crang, P., & Goodwin, M. (2014). Introducing Human Geographies. Routledge. 4. Cohen, S., & Huffman, M. (2019). The Fundamentals of Human Geography: A Pre-Reader. Routledge. 5. Daniels, P., Bradshaw, M., Shaw, D., & Sidaway, J. (2016). An Introduction to Human Geography. Pearson. 6. de Blij, H. J., Murphy, A. B., & Fouberg, E. H. (2018). World geography: People, places, and global issues. Wiley. ▪ Flint, C., & Taylor, P. J. (2019). Political Geography: An Introduction. Sage 7. Goh Cheng Leong (1995). Certificate Physical and Human Geography, Oxford University Press. 8. Hopkins, T. K., & Campbell, J. R. (2016). World regional geography. Cengage Learning. 9. Johnston, R. J., & Sidaway, J. D. (2017). Geography since the Second World War: An international survey. Routledge. 10. Intergovernmental Panel on Climate Change (IPCC) reports. 11. Kitchin, R., & Thrift, N. (2017). International Encyclopedia of Human Geography. Elsevier. 12. Khullar D.R. (2016). Physical, Human and Economic Geography, Accesses Publication 13. Marston, S. A., Knox, P. L., & Liverman, D. M. (2018). World regions in global context: Peoples, places, and environments. Pearson. 14. Millennium Ecosystem Assessment (2005). Ecosystems and Human Well-being: Synthesis. Island Press. 15. Woodward, S. L., & Smith, B. M. (2016). Major World Environments. John Wiley & Sons.
Course Outcomes	Upon completion of this course, students will be able to: 1. Describe the physical and biological characteristics of major terrestrial environments, including equatorial, tropical grasslands, temperate grasslands, arctic, hot desert, Mediterranean, and other regions. 2. Understand the adaptations of organisms to different environments and how they affect ecological processes. 3. Analyze the impact of human activities on these environments, including land use changes, pollution, and climate change. 4. Evaluate conservation strategies and policies aimed at mitigating human impact on these environments.

	5. Apply critical thinking and problem-solving skills to contemporary environmental issues.

Name of the Programme: B. A. Geography
Course Code: GOG-143
Title of the Course: Environmental Journalism
Number of Credits: 1+2= 03
Effective from AY: 2024-25

Pre-requisites for the Course:	Nil	
Course Objectives:	This course is designed to offer learners a comprehensive understanding of the fundamentals of Journalism and Environmental Reporting. Through hands-on training, learners will engage in field reporting, multimedia storytelling, social media campaigns, and investigative journalism. The primary goal is to cultivate and enhance the journalism skills of the students, providing them with practical experiences in diverse aspects of the field.	
		No. of hours
Contents:	**1. Introduction to Fundamentals of Journalism and Environmental Journalism** • Definition and scope of environmental journalism • Understanding the significance of environmental journalism • Historical development and evolution of environmental journalism • Role of environmental journalists in society • Impact of environmental reporting on public awareness and policy • Environmental Science Essentials for Journalists: Overview of key environmental issues and challenges, Basics of climate science, ecology, and biodiversity • Analysis of local and global environmental policies • Investigating the impact of regulations on environmental issues • Basics of news reporting, writing, and editing • Interviewing techniques and ethical considerations in journalism	**15**
	2. Field Reporting and Observation and Multimedia Storytelling: • Conducting field visits to local environmental sites • Observing and documenting environmental issues first-hand • Writing short field reports on the observed environmental challenges • Photojournalism session: Capturing compelling images related to environmental topics • Video reporting and editing: Creating short documentaries or news clips	**30**

	• Integrating multimedia elements into environmental storytelling	
	3. Social Media Campaign and Investigative Journalism: • Designing and implementing a social media campaign on an environmental issue • Monitoring and analyzing the impact of the campaign • Reflecting on the role of social media in environmental communication • Developing and executing investigative projects on specific environmental topics • Gathering and analyzing data, conducting interviews, and fact-checking • Presenting findings in a compelling and objective manner **Assessment and Evaluation of the Course:** The practical component (2 credits) of 50 marks will be assessed in the following manner: Intra Semester Assessment: Three ISA's of 5 marks each, the best two scores shall be considered. Semester End Assessment: 1. Maintenance of Practical Record/Journal : 5 marks 2. Report Submission : 5 Marks (Field Reporting and Observation and Multimedia Storytelling) 3. Report Submission : 5 Marks (Social Media Campaign and Investigative Journalism) 4. Viva Voce Examination : 5 Marks 5. Written examination based on the practical syllabus : 20 Marks	**30**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world applications. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Caputo, Tony. *Visual Storytelling: The Art and Technique*. Taylor & Francis, 2016. 2. Fletcher, Fred, and Mark Neuzil. *Environmental Journalism: A Guide to the Information Age*. Iowa State University Press, 2008. 3. Gabrielson, Teena et al., editors. *The Oxford Handbook of Environmental Political Theory*. Oxford University Press, 2016.	

	4. Gitner, Seth. *Multimedia Storytelling for Digital Communicators in a Multiplatform World*. Routledge, 2015. 5. Houston, Brant, and Investigative Reporters and Editors Inc. *The Investigative Reporter's Handbook*. Bedford/St. Martin's, 2009. 6. Knight, Megan, and Clare Cook. *Social Media for Journalists: Principles and Practice in a New Media World*. Sage Publications, 2019. 7. Kovach, Bill, and Tom Rosenstiel. *The Elements of Journalism: What Newspeople Should Know and the Public Should Expect*. Three Rivers Press, 2007. 8. Reitze, Arnold W., and David B. Sachsman. *Global Environmental Journalism: An Introduction*. Routledge, 2017. 9. Ward, Stephen J.A. *Journalism Ethics at the Crossroads: Democracy and the Future of the Press*. Routledge, 2013. **Online Resources:** 1. Poynter Institute for Media Studies - Journalism Ethics Section: https://www.poynter.org/poynter-institute-code-ethics/ 2. Columbia Journalism Review - Reporting and Editing Section: https://www.cjr.org/ 3. Environmental Reporting Resources from Society of Environmental Journalists (SEJ): https://www.sej.org/ 4. Investigative Reporters and Editors (IRE) - Resource Center: https://www.ire.org/resources/ 5. YouTube Materials: 6. https://www.youtube.com/watch?v=TkaSkTTNnwo&pp=ygUZRW52aXJvbm1lbnRhbCBKb3VybmFsaXNtIA%3D%3D 7. https://i.ytimg.com/vi/Za9UlI5vTqg/hq720.jpg?sqp=-oaymwEc-CNAFEJQDSFXyq4qpAw4IARUAAIhCGAFwAcABBg==&rs=AOn4CLBOsKjIxyyWM0Mz8H7sE0de-7l_Ag 8. https://www.youtube.com/watch?v=eC0qpB5OvP0&pp=ygUYZW52aXJvbm1lbnRhbCBqb3VybmFsaXNt 9. https://www.youtube.com/watch?v=YE8pNtz_bfQ&pp=ygUYZW52aXJvbm1lbnRhbCBqb3VybmFsaXNt
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understanding** of the scope and purpose of environmental journalism and differentiate environmental journalism from general news reporting. 2. **Appreciate** the concept of environmental journalism as a specialized field of journalism. 3. **Develop** keen observational skills to identify and document environmental challenges and accurately record observations through written notes, photographs, and other relevant documentation methods. 4. **Connect** investigative journalism to the broader context of addressing environmental challenges.

Instructions

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. The total workload for this course is 60 hours, which corresponds to 2 credits. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions.
3. There are a total of 30 laboratory sessions scheduled, with a total duration of 60 hours.
4. Each batch will comprise of 20 students.
5. The practical examination will be of 2 hours duration and will carry 50 marks.
6. The practical examination is scheduled to be conducted at the end of the semester in either the Geography Laboratory or a designated location exclusively assigned for the purpose.
7. In the event of University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College).
8. In case of a College Examination, Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

EXIT COURSE

Name of the Programme : B. A. Geography
Course Code : GOG 161
Title of the Course : Exit Course "Professional Tour Guide"
Number of Credits : 1+3=4
Academic Year : 2024-25

Pre-requisite for the Course	This course is open to Geography students who opt to exit after completing the first year of the degree program.	
Course Objectives	This course provides a complete education for aspiring tour guides, covering not only the historical and cultural aspects of the destinations but also emphasizing crucial skills in communication, customer service, safety, and ethical considerations. The internship component ensures that students have practical, hands-on experience before entering the professional world of tour guiding.	
		No. of hours
Content	**1. Introduction to Tour Guiding** • Introduction to the tourism industry • Role and responsibilities of a tour guide • Importance of communication and customer service skills **2. Cultural and Historical Context:** • Understanding the cultural and historical significance of tour destinations. • Researching and presenting historical facts. • Emphasizing sensitivity to diverse cultures.	**15**
	3. Destination Knowledge and Customer Interaction and Communication **4. Practical Sessions on following aspects** • Understanding Geography of local area and identifying local features using toposheets, Google Earth or and other Maps • Familiarizing with landmarks, attractions, and points of interest. • Study of flora, fauna, and local ecosystems with field visit. • Appreciation of local art and architecture with field visit. • Knowledge of local culinary traditions and popular dishes, Recommendations for dining and cultural experiences. **5. Practical Sessions on Effective Communication Skills:** • Verbal and non-verbal communication techniques. • Handling questions and concerns from tourists. • Interpersonal skills and group management. **6. Practical Sessions on Multilingual Communication:** • Basic phrases in commonly spoken languages. • Utilizing translation tools. • Addressing language barriers with sensitivity.	**30**
	7. Practical Sessions in Tour Planning, Logistics & Safety and	**30**

	Emergency Procedures • Itinerary Design: Planning and structuring tour itineraries, Time Management and flexibility, Integrating local events and festivals into the itinerary. • Transportation and Logistics: Coordination with transportation providers. Understanding public transportation options, Addressing unforeseen challenges during a tour. • Safety Guidelines: Ensuring the safety of tourists during the tour, Emergency procedures and first aid basics. • Communication with local authorities in case of emergencies. • Cultural Sensitivity and Conflict Resolution: Handling cultural misunderstandings, Conflict resolution strategies. • Sensitivity training for diverse groups of tourists.	
	8. Practical Sessions on Legal and Ethical Considerations • Regulations and Permits: Understanding local tourism regulations. • Securing necessary permits for guided tours. • Legal responsibilities of a tour guide. • Responsible Tourism Practices: Environmental and cultural impact considerations, Encouraging responsible and sustainable tourism, Promoting ethical behavior among tourists. **9. Internship and Practical Training;** • Conducting guided tours under supervision. • Practical experience in managing tourist groups. • On-site training in real-world settings.	**30**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References	1. Buckley, R. (2019). The Routledge Handbook of Tourism and Sustainability. Routledge. 2. Goeldner, C.R., & Ritchie, J.R.B. (2019). Tourism: Principles, Practices, Philosophies. John Wiley & Sons. 3. Kajala, L., & Pouta, E. (2019). Tourist guides and their ethical dilemmas:	

	A review of the literature. Tourism Management Perspectives, 31, 33-41. 4. McRobbie, D., & Quayle, M. (2018). Tourism and cultural change in Costa Rica: Pitfalls and possibilities. Routledge. 5. National Tour Association. (n.d.). About NTA. Retrieved from https://www.ntaonline.com/about-nta/ 6. Sharpley, R. (2014). Tourism and development: Concepts and issues. Channel View Publications. 7. Tourism Industry Association of Canada. (n.d.). About TIAC. Retrieved from https://tiac-aitc.ca/About_TIAC.html 8. UNWTO. (2019). Global Report on Adventure Tourism. UNWTO. 9. Weaver, D. (2019). Sustainable tourism: Theory and practice. CABI. 10. World Federation of Tourist Guide Associations. (n.d.). About WFTGA. Retrieved from https://www.wftga.org/about-wftga/
Course Outcomes	Upon completing the "Introduction to Tour Guiding" module, students will be able to: 1. **Outline** the primary duties and responsibilities of a tour guide. 2. **Explain** the significance of local geography in shaping the destination. 3. **Develop** well-organised and engaging tour itineraries and integrate cultural, historical, and leisure elements into the itinerary. 4. **Gain exposure** to real-world settings and challenges faced during guided tours and implement learned skills in dynamic and unpredictable situations.

Name of the Programme : **B. A. Geography**
Course Code : **GOG-200**
Title of the Course : **Development of Geographic Thought**
Number of Credits : **04**
Effective from AY : **2024-25**

Pre-requisites for the Course:	Nil	
Course Objectives:	The course aims to impart a comprehensive understanding of the historical evolution of geography, covering ancient (Greek and Roman), medieval (Arab), and modern periods. Key objectives include exploring the classification of knowledge, the nature of geography, and the foundational contributions of Varenius, Kant, Humboldt, and Ritter. Students will delve into core geographical concepts, dichotomies in geography (physical vs. human, systematic vs. regional), and spatial dynamics, including the quantitative revolution and positivist explanations. The course also introduces diverse perspectives in geography, such as behavioral, humanistic, and social relevance, including welfare, radical, and feminist perspectives, as well as an exploration of postmodernism's impact on the discipline. Through these objectives, students will gain a holistic understanding of geography's evolution, concepts, and contemporary perspectives.	
		No. of hours
Contents:	**1. Geography during Ancient Period:** • Classification of knowledge • Nature of geography and its place among sciences. • Nature of geographic knowledge during ancient (Greek, Roman and Indians) and medieval (Arab) periods • Foundation of modern geography - contributions of Varenius, Kant, Humboldt and Ritter.	**15**
	2. Geographical Concepts: • Emergence of geography as a study of (i) physical features (ii) chronology (iii) landscapes. • Concepts in geography: environmental determinism and possibilism, areal differentiation. • Dichotomy and dualism in Geography: Physical vs Human Geography and Systematic vs Regional Geography	**15**
	3. Spatial Dynamics: • Definition and scope of spatial dynamics • Evolution of spatial thinking in geography • Role of spatial dynamics in understanding geographic phenomena • Quantitative revolution - emergence of geography as spatial science. • Application of spatial analysis techniques in Geography	**15**

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	• Inductive and deductive logic in geographic explanations.	
	4. Perspectives in Geography: • Behavioral and humanistic perspectives in geography. • Social relevance in geography - Welfare, Radical and Feminist Perspectives. • Postmodernism and Geography	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Bhaduri, Amit. *The Promise of the Metropolis: Bangalore's Twentieth Century*. Oxford University Press, 2005. 2. Chakraborty, Rabin, and Sharmistha Chakraborty. *Explorations in Geographical Thought*. Rawat Publications, 2017. 3. Dutt, Ashok K. *Geographical Thought: An Introduction to Ideas in Human Geography*. Macmillan India Ltd, 1993. 4. Harvey, David. *Spaces of Global Capitalism: A Theory of Uneven Geographical Development*. Verso, 2006. 5. Humboldt, Alexander von. *Cosmos: A Sketch of a Physical Description of the Universe*. Harper & Brothers, 1845. 6. Jain, Ravindra K. *Indian Geographical Thought: A Century of Development*. Vikas Publishing House, 1974. 7. Kant, Immanuel. *Geography and the Nature of Understanding*. Enlightenment Press, 1784. 8. Menon, Dilip M. *Geographical Thought in India: Theoretical Constructs and Methodological Innovations*. Sage Publications, 2009. 9. Mitra, Ashesh Kumar. *Geographical Thought: An Introduction*. New Central Book Agency, 2008. 10. Pandey, Satish C. *Understanding Geographical Thought: An Introduction to Early Ideas in the History of Geography*. Concept Publishing Company, 2012. 11. Radcliffe, Sarah A. "Feminist Geopolitics." *Area*, vol. 38, no. 2, 2006, pp. 128-132. 12. Ritter, Carl. *Comparative Geography*. Cambridge University Press, 1865. 13. Sen, R.K. *Geographical Thought: A Praxis Perspective*. Sage Publications, 2003.	

	14. Singh, Rana P.B. *Geographical Thought: A Critical Introduction*. Chand Publishing, 2015. 15. Smith, John. "Geographical Concepts Through the Ages." *Journal of Geography Studies*, vol. 25, no. 2, 2015, pp. 45-62. 16. Smith, Neil. "The Welfare Perspective in Geography." *Annals of the Association of American Geographers*, vol. 79, no. 2, 1989, pp. 228-233. 17. Online Resources: 18. Environmental Determinism and Possibilism: Exploring Geographical Concepts. National Geographic Society, www.nationalgeographic.org/encyclopedia/environmental-determinism-and-possibilism/. 19. World History Encyclopedia. *Arab Contributions to Geography*. WorldHistory.org, www.worldhistory.org/arab-geography/.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. Acquire a comprehensive **understanding** of the historical development of geography, recognizing its evolution from ancient times to the modern era. 2. **Develop** the ability to critically analyze the foundational contributions of key figures and movements in shaping modern geography. 3. **Develop** skills in spatial analysis through an exploration of the quantitative revolution, positivist explanations, and logical reasoning in geography. 4. **Evaluate** different perspectives in geography, including behavioral, humanistic, social relevance, and postmodernism, understanding their impact on the discipline's theories and methodologies.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-201**
Title of the Course : **Geography of Resources**
Number of Credits : **04**
Effective from AY : **2024-25**

Prerequisites for the Course:	Nil	
Course Objectives:	This course aims to provide students with a thorough understanding of natural resources and their economic significance. Students will delve into the concepts, classifications, and global distribution of various resources, including minerals, fuels, renewables, fisheries, forests, and agriculture. The course seeks to foster an in-depth exploration of key resources, their extraction methods, and environmental implications. Additionally, students will analyze the economic importance, regional distribution, and processing methods of major crops. The course extends its focus to human resources, examining population characteristics, migration dynamics, and occupational structures. By the end of the course, students will have the knowledge and analytical skills necessary to assess, manage, and propose sustainable strategies for utilizing diverse natural resources in different regions.	
		No. of hours
Contents:	**Natural Resources:** Meaning, Concepts, Classification and Economic Significance, Distribution and Development, **Mineral Resources:** Major and allied Metallic: Ferrous - Iron Ore, Non-Ferrous–Bauxite. Fuel Resources: Coal & Petroleum.	**15**
	Renewable Resources: Fish: Types, fishing seasons, factors affecting, regional distribution, major fishing grounds, conservation. Forest Resources: Types, Study of Tropical & Temperate Forest, Conservation of Forest Renewable: Hydel power. Non-Conventional Energy Resources, Merits and distribution. Livestock as a resource, Types, Products and spatial distribution, Place in economy,	**15**
	Agriculture Resources: Concepts, significance, factors affecting, classification and, regional seasonal and global pattern Major Crops: Cereals - Rice & Wheat; Major Cash Crops: Tea & Coffee; Major processing based Crops: Cotton & Sugarcane.	**15**
	Human Resources: Definition, nature and scope, growth, regional concentration of population, factors influencing. Distribution, Density, Age-sex structure,	**15**

	Literacy, Rural- Urban composition Migration: Intra-state, Interstate and International. Occupational structure:	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	• Bengston, G. H. Royan. *Fundamentals of Economic Geography.* Prentice Hall, 1988, New Delhi. • Chapman, J. D. *Geography and Energy.* Longman, 1989, London. • Hartshorne, T. N., and Alexander, J. W. *Economic Geography.* Prentice Hall, 1988, New Delhi. • Jones, C. F., and Darkenwald, G. G. *Economic Geography.* Macmillan & Co, 1975, New York. • Khullar, D. R. *Indian-A Comprehensive Geography.* Kalyani Publishers, 2011, New Delhi. • Leong, G. C., and Morgan, G. H. *Human & Economic Geography.* Oxford University Press, 1982, New York. • Mandal, R. B., Uyanga, J., and Prasad, H. *Introductory Methods in Population Analysis.* Concept Publishing Company, 2007, New Delhi. • Shivkumar, A. K., Panda, P., and Ved, R. R. *Handbook of Population and Development in India.* Oxford University Press, 2013, Oxford. • Singh, J. *India-A Comprehensive & Systematic Geography.* Gyanodaya Prakashan, 2003. • Singh, J., and Dhillon, S. S. *Agricultural Geography.* Tata McGraw Hill Education, 2004, New Delhi. • Singh, R. L. *India: A Regional Geography.* National Geographical Society, India, 1971, Varanasi. • Smith, D. M. *Industrial location: An Economic Geographical Analysis.* John Wiley, 1971, New York. • Spate, O. H. K., and Learmonth, A. T. A. *India and Pakistan - Land, People and Economy.* Methuen & Co, 1967, London. • UN. *The Determinants and Consequences of Population Trends, Vol. I, ST/SOA/SER.A/50, Population Studies No. 50.* 1973, New York. • Weddell, B. J. *Conserving Living Natural Resources in the Context of a Changing World.* Cambridge University Press, 2002, Cambridge. • Young, A. *Land Resource: Now and Future.* Cambridge University Press	

	2000.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: • **Comprehend** the economic significance of various natural resources and their global distribution patterns. • **Apply** knowledge to analyze the extraction methods, economic importance, and distribution of mineral and fuel resources. • **Examine** the economic importance of forests and agricultural resources based on global and regional patterns. • **Develop** strategies for the sustainable management of natural resources, fisheries, forests, and agriculture.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-211**
Title of the Course : **Economic Geography**
Number of Credits : **04**
Effective from AY : **2024-25**

Pre-requisites for the Course:	Nil	
Course Objectives:	The Economic Geography course seeks to provide students with a thorough understanding of how economic activities are organized in different locations influencing global, regional, and local environments. Students will explore fundamental concepts, such as the impact of resources on economic development and locational theories guiding industrial choices. The course also covers the spatial organization of agriculture and the dynamics of global trade and connectivity through transportation systems. By the end, students should be able to analyze how economic geography shapes our world and critically assess regional economic planning.	
		No. of hours
Contents:	**a. Introduction to Economic Geography** • Introduction, Concepts and Approaches in Economic Geography • Nature, Scope and Branches of Economic Geography. • Significance of resources in Economic development • Relationship between Geography and Economic activities • Locational Theories. Least Cost Theory, Profit Maximization Theory, Behavioral Location Theory, Break Point Theory, Industrial location - Weber.	**15**
	b. Spatial Organization of Economic Activities • Resource Distribution and Allocation • Agriculture: Types of Agriculture: Subsistence vs. commercial agriculture. • Agricultural Regions • Agro-Ecological Zones: Impact of climate on agricultural practices. • Industry and Manufacturing: Types of Industries • Importance and locational factors of Manufacturing Industry: Iron and Steel, Sugar, Shipbuilding, Tele-communication and Software industries.	**15**
	c. Global Connectivity and Trade Dynamics • Transport: Meaning and Importance • Distribution and Development of transport • Major Roads & Railway, Air, Ocean & Canal Routes (North Atlantic & Indian Ocean) (Suez & Panama Canals) and Ports • Problems of transport system, future prospects.	**15**

	• Trade: Meaning, Importance, • Types of World Trade: Bi-lateral, Multi-lateral, and Free Trade • Trade Blocks: WTO, EU, G-20, BRICS, & SAARC.	
	d. Regional Economic Development • Regional Disparities: Causes and Consequences • Policies for Regional Development • Case Studies in Regional Economic Planning (Silicon Valley, California, USA; Technology Cluster Development, Hyderabad, India: Information Technology Hub)	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Bagchi-Sen, Sharmistha, and Helen Lawton Smith (eds.). *Economic Geography: Past, Present, and Future.* Routledge, 2006. USA. 2. Bengston, & Van, G. H. Royan. *Fundamentals of Economic Geography.* Prentice Hall, 1988. New Delhi. 3. Berry, J. L. *Geography of Market Centres and Retail Distribution.* Prentice Hall, 1967. New York. 4. Chatterjee, S. P. *Economic Geography of Asia.* Allied Book Agency, 1984. Calcutta. 5. Chorley, R. J., and Haggett, P. (eds.). *Network Analysis in Geography.* Arnold, 1969. London. 6. Combes, Pierre-Philippe, Thierry Mayer, and Jacques-François Thisse. *Economic Geography: The Integration of Regions and Nations.* Princeton University Press, 2008. Princeton and Oxford, Princeton, New Jersey, USA. 7. Dreze, J., & Sen, A. *India-Economic Development & Social Opportunity.* Oxford, 1996. New Delhi. 8. Eckarsley, R. (ed.). *Markets, the State and the Environment.* McMillan, 1995. London. 9. Garnier, B. J., and Delobez, A. *Geography of Marketing.* Longman, 1979. London. 10. Hanink, Dean M. *Principles and Applications of Economic Geography: Economy, Policy, Environment.* John Wiley & Sons, 2012. 11. Jovanovic, Miroslav N. *Evolutionary Economic Geography: Location of Production and the European Union.* Routledge, 2009. London and	

	New York. 12. Leong, G. C., & Morgan, G. H. *Human and Economic Geography.* Oxford University Press, 1982. New York. 13. Pachura, Piotr. *The Economic Geography of Globalization.* InTech Pub, 2011. 14. Rodrigue, Jean-Paul, Claude Comtois, and Brian Slack. *The Geography of Transport Systems.* Routledge, 2013. London. 15. Siddhartha K. *Economic Geography.* Kitab Mahal, 2016. New Delhi. 16. Singh, S. *Industrial Geography.* ABD Publisher, 2011. 17. Smith, D. M. *Industrial Location: An Economic Geographical Analysis.* John Wiley, 1971. New York. 18. Sokol, M. *Economic Geography: Undergraduate Study in Economics, Management, Finance, and the Social Sciences.* University of London, 2011.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Describe** the relationship between geography and economic activities. 2. **Apply** spatial organization concepts to analyze resource distribution. 3. **Evaluate** the impact of trade patterns on regional and global economies. 4. **Develop** insights into the spatial organization of economic activities.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-212**
Title of the Course : **Geography of Environment and Development**
Number of Credit : **04**
Effective from AY : **2024-25**

Pre-requisites for the Course	Nil	
Course Objectives:	This course aims to provide students with a comprehensive understanding of the intricate relationship between environment and development. Through an exploration of key concepts such as environment, development, and sustainable development, students will gain foundational knowledge. Overall, the course seeks to cultivate a holistic perspective, critical thinking, and practical skills for addressing complex environmental and developmental issues.	
		No. of hours
Contents:	**1. Introduction to Environment and Development:** A) Meaning, Nature and Scope of: • Environment • Development • Sustainable Development B) Recent Approaches to Environment and Development: • Circular Economy • Ecosystem-Based Approaches • Green Growth • Participatory and Inclusive Development • Technology for Sustainable Development • Environmental Justice	**15**
	2. Challenges, Causes and Consequences of Environment and Development: Positive and Negative impacts on the Environment due to the following developmental issues: • Dams (High Dams and Large Dams) • Deforestation (Changing Landscape) • Transportation (Hill Cutting, Tunnel Disasters) • Agriculture (Air Pollution due to stubble burning) • Tourism (Coral Reef effects) • Wars (Recent Wars of Syria, Ukraine, Israel) • Housing Projects (Slums) • Industrial Hubs (Sub-Urban Expansion)	**15**
	3. Environment Management and Role of Global and National Policies and Laws: • Stockholm 1972 • Montreal Protocol • Rio 1992, 2012 • IPCC	**15**

Issued on: 24/01/2025

	• Kyoto Protocol • Conference of Parties (COPs) • Paris Agreement • Millenium Development Goals (MDGs) and Sustainable Development Goals (SDGs): Their Role and Credibility of Achievements.	
	4. Role of Information Technology in Environmental Development: Environment Impact Assessment (EIA) and Its Need for Environment Management and Planning. Role of GIS in: • Land Use Management • Watershed Management • Disaster Management • Waste Management (Municipal waste, Bio-medical Waste, Bio-waste and E-waste) • Urban Management (Slum Area Development, City Planning)	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Chandra, R. C (2002), Environmental Geography, Kalyani Ludhiana. 2. Cunningham, W. P and Gunningham, M. A. (2004), Principle of Environmental Science: Inquiry and Application, Tata Macgrow Hill, New Delhi. 3. Down To Earth, Science and Environment Fortnightly Tulkabad, New Delhi. 4. Elliot, Jennifer (2002), Sustainable Development Routledge Publisher. 5. IPCC Reports, Govt. of India, Ministry of Environment and Forests. 6. MoEF (2006), National Environmental Policy - 2006, Ministry of Environment and Forests, Govt. of India. 7. Sharma, P. (2011), Ecology and Environment, Rastogi Publication. 8. Singh, S. (2013), Environmental Geography, Prayag Pustak Bhawan Allahabad. 9. UNEP (2012) Recent Reports.	
Course Outcomes:	At the end of the successful completion of this course, students will be able to:	

	1. **Understand** the role of global and national policies in environmental management. 2. **Apply** recent approaches to analyze and propose solutions for environmental and developmental challenges. 3. **Analyze** the causes, consequences, and challenges associated with various developmental issues. 4. **Evaluate** the impact of recent approaches on global development.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-231**
Title of the Course : **Google Earth: Bring the World inside the Classroom**
Number of Credits : **03**
Effective from AY : **2024-25**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course is designed to provide learners with an in-depth understanding of Google Earth, a powerful tool for exploring and visualizing spatial data. The course will cover the basics of navigating and exploring locations using Google Earth's features and tools. Learners will also learn how to use Google Earth to analyze and visualize spatial data, create customized maps and visualizations using Google Earth's API, and develop interactive applications using Google Earth's API and other web technologies.	
		No. of hours
Contents:	**1. Introduction to Google Earth** • What is Google Earth and what can it be used for? • Overview of the Google Earth interface • How to navigate the 3D view of Earth • How to search for specific locations **2. Importing and Exporting Data with Google Earth** • How to import data into Google Earth from other sources • How to export data from Google Earth to other software • How to use KML files to share data with others	**15**
	3. Exploring Places with Google Earth • How to use the search function to find a specific location • How to use the layers function to view different types of data • How to use the measurement tool to measure distances and areas • How to use the historical imagery function to view changes in a location over time **4. Advanced Navigation with Google Earth** • How to use the tilt and rotation functions to view a location from different angles • How to use the Street View function to view a location at street level • How to use the 3D buildings function to view a location in 3D	**15**
	5. Creating a Tour with Google Earth • How to create a tour of a location in Google Earth • How to add placemarks, photos, and videos to a tour • How to record a tour and share it with others	**15**

	6. Creating 3D Models with Google Earth • How to create a 3D model of a building or other structure using Google Earth • How to add textures and colors to a 3D model • How to share a 3D model with others	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Google Earth User Guide, https://support.google.com/earth/answer/166438?hl=en&ref_topic=4381525 2. Google Earth API Developer Guide, https://developers.google.com/earth/documentation/ 3. Google Earth Outreach, https://www.google.com/earth/outreach/ 4. Google Earth Education, https://www.google.com/earth/education/ 5. Google Earth for Science Teachers, https://sites.google.com/site/scienceteacherstraining/google-earth	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: **1. Navigate and explore** locations using Google Earth's features and tools **2.** Use Google Earth to **analyze and visualize** spatial data **3. Create** customized maps and visualizations using Google Earth's API **4. Develop** interactive applications using Google Earth's API and other web technologies	

Name of the Programme : **B.A. Geography**
Course Code : **GOG-241**
Title of the Course : **Traditional Knowledge System in Resource Management**
Number of Credits : **1+2=3**
Effective from AY : **2024-25**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course is designed to provide exposure to traditional knowledge systems that evolved over time with harmonious co-existence with the surroundings. The students will be able to understand the peculiar characteristics of resource management of tribal groups and the sustainability of such practices. Interactive field visits will motivate the learners to the need to recognise and integrate indigenous knowledge systems in the current resource management practices.	
		No. of hours
Contents:	**1. Introduction to Indigenous Knowledge:** Concept of Traditional knowledge system, difference between indigenous knowledge and western knowledge, need and priority Methodology and approaches: ethnographic, comparative, integrated, Traditional ecological knowledge, traditional technical knowledge, traditional values and ethics	**15**
	2. Case studies and Field Work I: ● The Velip Community of Goa and its unique eco-cultural practices and traditions ● Saura Tribe of Odisha ● Water Management of Johad, Rajasthan **3. Project and outreach:** **A) Field Visit:** Field visit to a village in your or neighbouring taluka inhabited by an indigenous community and study their practices using the ethnographic approach with reference to the following: Traditional Occupations, Forest Management, Water Management, Soil Management, Biodiversity Conservation, Dress and Attire, Housing and Settlements, Language and Communication, Social Structure, Religious Practices, Festivals and Celebrations, Music and Dance and other socio-cultural practices. Also, analyse the impact of the environment on their lifestyle. **B) Submission of Report on field visit:** Writing a field visit report on indigenous communities using an ethnographic approach involves documenting your observations and experiences during the visit. Here are steps to guide you through the process: Introduction, Objectives of the Field Visit, Preparation and Permissions, Arrival and Initial Impressions, Participant	**30**

	Observation, Interactions and Interviews, Cultural Practices and Traditions, Community Dynamics, Challenges Faced During the Field Visit, Reflections on Cultural Sensitivity, Ethical Considerations, Photographs and Visual Materials, Findings and Emerging Themes, Impact on Understanding, Recommendations, Conclusion, References and Citations	
	4. Case Studies and Field Work II: ● Zabo in Naga Community ● Surangas in Kerela, Agriculture and Forest Management ● Kodava tribe of Karnataka : Impact of forest conservation policies on tribal communities. **5. Field Visit:** Visit to a Sacred Groves to undertake a study with reference to following aspects: Ecological Significance Cultural and Religious Practices Challenges and Threats Conservation Initiatives Documentation of Traditional Knowledge Impact of Modernization Other aspects **6. Report submission:** Visiting sacred groves for a study provides a unique opportunity to explore the intersection of culture, environment, and spirituality. Here are steps to help you write a comprehensive report on your study of sacred groves: Introduction, Objectives of the Study, Background Information, Study Area:, Purpose and Significance of the Sacred Grove, Community Involvement, Observations and Findings, Community Perspectives, Challenges and Threats, Cultural and Environmental Conservation, Reflections and Personal Insights, Recommendations, Conclusion:, References, Photographs and Visuals, and Appendices. **7. Assessment and Evaluation of the Course:** The practical component (2 credits) of 50 marks will be assessed in the following manner: **Intra Semester Assessment:** Three ISA's of 5 marks each, the best two scores shall be considered. **Semester End Assessment:** ● Maintenance of Practical Record/Journal : 5 marks ● Report Submission (Field Work I**)** : 5 Marks ● Report Submission (Field Work II**)** : 5 Marks ● Viva Voce Examination : 5 Marks ● Written examination based on the practical syllabus : 20 Marks	**30**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning.	

	3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Antons, Christoph, and Sanya Reid Smith. *Traditional Knowledge, Traditional Cultural Expressions, and Intellectual Property Law in the Asia-Pacific Region.* 2009. 2. Basso, Keith H. *Wisdom Sits in Places: Landscape and Language Among the Western Apache.* 1996. 3. Berkes, Fikret. *Sacred Ecology.* 2008. 4. Charles R Menzies (2006) .Traditional Ecological Knowledge And Natural ResourceManagement , University Of Nebraskas Press 5. Dooling, D. M. *The Spirit of the First Peoples.* 2006. 6. Kabasa, John M. D. (ed.). *Indigenous Knowledge Systems and Sustainable Development: Relevance for Africa.* 2005. 7. Julian T Inglis (1993) Traditional Ecological Knowledge ,Concepts And Cases, In-ternational Development Research Centre . 8. Kimmerer, Robin Wall. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants.* 2013. 9. Pomfret, David M. (ed.). *Indigenous Knowledge and the Environment in Africa and North America.* 2012. 10. Ross, Anne, et al. *Indigenous Peoples and the Collaborative Stewardship of Nature: Knowledge Binds and Institutional Conflicts.* 2011. 11. Williams, Nancy M., and Ellen R. Field (eds.). *Traditional Ecological Knowledge: Wisdom for Sustainable Development.* 2002.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the concept of indigenous knowledge and its significance in resource management. 2. **Comprehend** the methodology and approaches used in the study and application of Indigenous Knowledge (IK), 3. **Recognize** the need and priority of integrating indigenous knowledge systems into contemporary resource management practices. 4. **Analyze** and evaluate the eco-cultural practices and traditions of the Velip Community in Goa.

Instructions

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by

the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.

2. The total workload for this course is 60 hours, which corresponds to 2 credits. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions.
3. There are a total of 30 laboratory sessions scheduled, with a total duration of 60 hours.
4. Each batch will comprise of 20 students.
5. The practical examination will be of 2 hours duration and will carry 50 marks.
6. The practical examination is scheduled to be conducted at the end of the semester in either the Geography Laboratory or a designated location exclusively assigned for the purpose.
7. In the event of University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College).
8. In case of a College Examination, Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

Name of the Programme : **B.A. Geography**
Course Code : **GOG-202**
Title of the Course : **Principles of Population Geography**
Number of Credits : **04**
Effective from AY : **2024-25**

Pre-requisites for the Course	Nil	
Course Objectives:	The course Principles of Population Geography will help students to gain knowledge about concepts in Population Geography. Thus, provides students with a comprehensive understanding of the discipline, fundamental concepts and principles. This course aims to develop students thinking, skills and geographic literacy by introducing them to the concepts of spatial distribution and density of population, population characteristics, growth and decline of population, migrations etc.	
		No. of hours
Contents:	**Introduction to Population Geography**: Definition, Nature and Scope, Historical development. Approaches to the study of Population Geography, relation with other branches. Methods and sources of population data with reference to India. Recent trends in Population Geography, Research Areas in Population Geography.	**15**
	Population Structure and Characteristics: Population size, Population distribution pattern with reference to World, India and Goa, density zones, population growth – determinants and patterns. Theories of population growth and their application- Malthusian Theory, Demographic Transition Model (DTM).	**15**
	Population Dynamics: Fertility, Mortality and Migration: Measures, determinants and implications. Migration as a global challenge, Brain drain and Brain gain, Migration crises - World and India Population composition and change - age sex composition, rural-urban composition, religious composition, literacy levels, occupational structure, income inequality.	**15**
	Threats to Population: Aftermath of calamities on population (Natural calamities, pandemic, wars, political instability, diseases, accidents etc). Contemporary Issues- Ageing Population (Japan), Declining Sex ratio, One Child Policy (China) - Implications and consequences, Gender inequality. Population Policies: Perspectives from developing and developed world, National Population Policy of India.	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application.	

	4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Barrett H.R. (1992): Population Geography, Oliver and Boyd Longman House, Harlow. 2. Bhende A., Kanitkar T. (2011): Principles of Population Studies, Himalaya Publishing House, Mumbai. 18th Edition revised. 3. Birdsell N., Kelley A.C., Sinding S. (2003): Population Matters: Demographic Change, Economic Growth and Poverty in Developing Countries. Oxford University Press. 4. Bruce Newbold, K. (2010): Population Geography: Tools and Issues. Rowman & Littlefield Publishers, Inc., UK. 5. Clark, J. I. (1972): Population Geography. Pergamon Press, Oxford. 6. Crispin J., Jegede J. (2000): Population, Resource and Development. Harpercollins Education; 2nd edition. 7. Chandana, R.C. (2013): Population Geography, Kalyani Publishers, Delhi. 8. Dyson T. (2010): Population and Development: Demographic Transition. Zed Books Ltd.; 1st edition. 9. Ehrlich, P.R. and Ehrlich, A.H. (1996): Ecoscience: Population, Resources Environment. 6th edition, W.H. Freeman and Company, San Francisco. 10. Gould WTS. (2009): Population and Development: Perspective on Development. Routledge: 1st edition. 11. Garnier, J.B. (1976): Geography of Population, Longman Group Ltd., London. 12. George, J. Demko et.al. (1970): Population Geography: A Reader, McGraw Hill Book Co. New York. 13. Hausier, Philip M & Duncan (Eds.) (1959): The Study of Population, University Press, Chicago. 14. Davis K. (1951): Population of India and Pakistan, Princeton University Press, Princeton. 15. Meadow, D.H., Meadows D.L., Randers J., and Behrens W.W. III. (1973): The Limits to Growth. I Report of the Club of Rome. The New American Library, New York. 16. Meadows, D.H., Meadows, D.L. and Randers, J. (1992): Beyond the Limits. Confronting Global Collapse, Envisioning a Sustainable Future.(A sequel to The Limits to Growth).Chelsa Green Publishers, Post Mills VT, USA. 17. Newell C. (1990): Methods and Models in Demography. The Guilford

	Press; 1st edition. 18. Pacione M. (2011): Population Geography: Progress and Prospects. Routledge; Reissue edition. 19. Peters G.L., Larkin R.P. (2008): Population Geography: Problems, Concepts and Prospects. 9th edition. 20. Dubuque, IA: Kendall Hunt Publishing. 21. Preston S., Heuveline P., Guillot M. (2000): Demography: Measuring and Modelling Population Processes. 22. Wiley-Blackwell; 1st edition. 23. Rowland DT. (2003): Demographic Methods and Concepts. Oxford University Press, USA. 24. Swanson DA., Siegel JS. (2004): Methods and Materials of Demography. Emerald Group Publishing; 2nd edition. 25. Smith, T.L (1960): Fundamental of Population Studies. Lipineott, London. 26. Srinivasan, K, and Vlassoff, M. (2001): Population Development Nexus in India: Challenges for the New Millennium. Tata McGraw Hill, New Delhi. 27. Trewartha,G.T.(1959): A Geography of Population-World Patterns. John Wiley & Sons Inc. New York. 28. Todaro MP, Smith S. (2011): Economic Development. 11th edition Printice Hall. 29. United Nation Development Program (UNDP) (2012): Human Development Reports (1990-2012) 30. http://hdr.undp.org/en/. 31. Weeks JR. (2004): Population: An Introduction to Concepts and Issues. Wadsworth Publishing; 9th edition. 32. Woods, R. (1979): Population Analysis in Geography. Longman, London. 33. Zelinsky, M. et. al. (1970): Geography and Crowding World, Oxford University Press New York. 34. Zelinsky, W (1966): A Prologue of Population Geography, Prentice Hall Inc, M.J.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the subject matter and basic concepts of population geography. 2. **Analyse** the spatial distribution of human population and its characteristics. 3. **Appreciate** the variations in population dynamics and processes such as fertility, mortality and migration. 4. **Evaluate** the recent trends in population studies.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-203**
Title of the Course : **Geopolitical Geography**
Number of Credits : **04**
Effective from AY : **2024-25**

Pre-requisites for the Course	Nil	
Course Objectives:	This course aims to foster a deep understanding of geopolitical concepts, theories, and their real-world applications. It delves into the intricate relationship between geography, politics, and international relations, unraveling the complex dynamics that shape global landscapes. Through a spatial and temporal lens, students will engage in the critical analysis of geopolitical issues and regional conflicts, gaining insights into their evolution over time. The course also emphasizes the exploration of practical solutions to contemporary geopolitical challenges, fostering a holistic approach to addressing complex issues in the ever-changing global arena.	
		No. of Hours
Contents:	**Introduction to Geopolitical Geography** Definition, Scope and Historical evolution of Geopolitical Geography Basic Conceptual Issues: Territoriality, Sovereignty, State. Geopolitical Theories: Classical geopolitical theories (Mackinder, Spykman, Mahan, and Haushofer)	**15**
	Geo-economics and Energy Politics Economic dimensions of geopolitics Resource geopolitics (oil, gas, minerals) Economic integration and trade blocs,	**15**
	Geopolitical Conflicts Contemporary Issues: Global Environment Issues, Geopolitics of Energy Ethnic and religious conflicts Globalization and Geopolitics Boundary Issues Global Governance and Institution.	**15**
	Geopolitical Risk and Future Trends Geopolitics of climate change and sustainable development Emerging powers and new geopolitical dynamics Technological advancements and their geopolitical implications Geopolitics in the 21st century.	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development.	

	6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/Readings:	1. Agnew, John (2003), Geopolitics- Revisioning World Politics, Routledge: London 2. Agnew, John (ed.)(1997), Political Geography: A Reader, Arnold: London 3. Blacksell, Mark(2006), Political Geography, Routledge: London 4. Blouet, Brian W. (2001), Geopolitics and Globalization in the Twentieth Century, Reaktion Books: London 5. Cohen, Saul B. (2003), Geopolitics of the World System, Rowman and Littlefield: Lanham 6. Dodds, Klaus (2000), Geopolitics in a Changing World, Prentice Hall: Essex, England 7. Dodds, Klaus and David Atkinson (eds.)(2000), Geopolitical Traditions: A Century of Geopolitical Thought, Routledge: New York 8. Glassner, Martin Ira and Chuck Fahrer (2004), Political Geography, John Wiley: Danvers, Massachusetts 9. Harvey, David (1990), The Condition of Postmodernity, Blackwell: Oxford 10. Jones, Michael, Rhys Jones and Michael Woods (2004), An Introduction to Political Geography: Space, Place and Politics, Routledge: London 11. Kupchan, Charles A. (ed.)(2001), Power in Transition: The Peaceful Change of International Order, United Nations University Press: Tokyo 12. Nayar, Baldev Raj (2005),Geopolitics Of Globalization, Oxford University Press: New Delhi 13. Paret, Peter (ed.)(1986), Makers Of Modern Strategy: from Machiavelli to the Nuclear Age, Princeton University Press: Princeton 14. Prescott, J.R.V. (1987), Political Frontiers and Boundaries, Allen and Unwin: London 15. Sassen, Saskia (2006), Territory, Authority, Rights: From Medieval to Global Assemblages, Princeton University Press, Princeton, New Jersey 16. Tuathail, Gearoid O. and Dalby, Simon (1998) (eds.), Rethinking Geopolitics, Routledge: London 17. Waltz, Kenneth N. (1983), Theory of International Politics, Addison-Wesley: Massachusetts 18. Wolch, Jennifer and Michael Dear (eds.)(1989), The Power of Geography: How Territory Shapes Social Life, Unwin and Hyman: London
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Develop** comprehensive understanding of geopolitical concepts,

	theories, and their practical applications. 2. **Explore** the interplay between geography, politics, and international relations. 3. **Analyse** geopolitical issues and regional conflicts with spatial and temporal aspect. 4. **Examine** and find practical solutions to the contemporary geopolitical challenges.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-204**
Title of the Course : **Physical Landscape of India**
Number of Credits : **04**
Effective from AY : **2024-25**

Pre-requisites for the Course	Nil	
Course Objectives:	This course aims to provide students with a concise understanding of India's geographical and physical features.	
		No. of hours
Contents:	**1. Physiography of India** • Location: India and its neighbours, Frontiers of India, States and their position, States with international boundaries • Physical divisions of India: • The Himalayas – geological formation, climate, vegetation, soil, biodiversity, physiographic divisions, major passes, significance • The Great North Indian Plains – geological formation, physiographic divisions, climate, vegetation, soil, biodiversity, significance • Peninsular Plateau – geological formation, Central Highlands, Deccan Plateau, Western Ghats, Eastern Ghats • Indian Desert • Coastal plains and islands	**15**
	2. Drainage System of India • Himalayan Drainage System: Indus river system, Ganga River System, Brahmaputra river system • Peninsular Drainage System: Flowing Towards East: Krishna, Godavari, Kaveri, Mahanadi, Subarnarekha, Vagai, Pennar • Flowing Towards West: Narmada, Tapti/Tapi, Mahi, Sabarmati, Luni and Sharavati • Hydropower projects, major dams: Tehri Dam, Bhakra Nangal Dam, Sardar Sarovar Dam, Hirakud Dam, Krishna Sagar Dam	**15**
	3. The Indian Climate • Factors influencing the climate of India • Monsoon and its mechanism • El-Nino and La-Nina & their impacts • The rhythm of Seasons: The cold weather season, the hot weather season, the southwest monsoon season, and the retreating monsoon season • Climatic Regions of India	**15**
	4. Soils and Natural Vegetation in India	**15**

	• Classification of Soils • Issue of Soil degradation & Soil Erosion, • Soil Conservation • Natural Vegetation of India: Forest Cover in India, Types of Forest in India, Biosphere reserves, national parks of India, Forest Conservation, Forest and Indigenous Communities and their problems in India.	
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Deshpande C.D, (1992): India-A Regional Interpretation Northern Book Centre, New Delhi. 2. Dhara, M.K., Basu, S.K., Bandyopadhyay, R.K., Roy, B., Pal, A.K., (Eds.) (1999): Geology and Mineral Resources of the States of India, Part-1: West Bengal, Geological Survey of India, Miscellaneous Publication. 3. Ghurey, G.S., (1963): The Scheduled Tribes of India, 1980 reprint, Transaction Books. 4. Husain, M., (2014): Geography of India, Tata McGraw-Hill Education, New Delhi. 5. Johnson, B.L.C., (Ed) (2001): Geographical Dictionary of India, Vision Books. 6. Kale, V.S., (2014): Landscapes and Landforms of India, Springer. 7. Khullar, D.R., (2011): Indian-A Comprehensive Geography, Kalyani Publishers, New Delhi. 8. Krishnan, M.S., (1949): Geology of India and Burma, The Madras Law Journal Press, Chennai 9. Learmonth, A.T.A., et.al(ed): Man and Land of South Asia Concept, New Delhi. 10. Mamoria, C.B.,(1995): Economic and Commercial Geography of India, Shiv Lal Agarwal & Co,	
Course Outcomes:	By the end of this course, students will be able to: 1. **Develop** critical thinking skills to evaluate the significance of various physiographic features in shaping India's landscape and influencing human activities. 2. **Recognize** the interconnected nature of India's drainage systems and their impact on the overall geography and socio-economic aspects of the country.	

	3. **Demonstrate** the comprehensive understanding of India's climatic diversity. 4. **Evaluate** the importance of forest and soil conservation and their impacts on maintaining ecological balance.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-205**
Title of the Course : **Physical Geography of Goa**
Number of Credits : **02**
Effective from AY : **2024-25**

Pre-requisites for the Course	Nil	
Course Objectives:	This course provides an in-depth exploration of the physical geography of Goa, covering its landforms, climate, natural resources, ecosystems, and environmental challenges. Through a combination of lectures, readings, field trips, and assignments, students will gain a comprehensive understanding of the physical characteristics and processes shaping the region.	
		No. of hours
Contents:	**1. Introduction to Goa's Physical Geography** • Geographic location, size, and administrative divisions • Physical Divisions of Goa • Geological history of Goa • Landforms and their formation processes • Climate of Goa and impact of monsoons on the region • Soils of Goa	**15**
	2. Natural Resources of Goa • Overview of minerals and mining activities • Forest resources and biodiversity • Rivers, water bodies and irrigation projects of Goa • Water management and challenges	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Angle, P. S. "An Economic Review of Goa." 2. Claude Alvares, Fish Curry and Rice. An Eco-Farm Publication, 2002 3. Coastal Zone Management Plans, Govt. Of Goa, 4. Daily newspapers published from Goa (Publication House) and Television News covering Goa. 5. Economic Survey of Goa, DPSE publication, Govt. Printing Press, Panaji.	

	2000-2022 6. Gazetteer of Goa, Daman & Diu, Govt. of India. Govt. Printing Press, Panaji 7. Gomes, Olivinho J. F. "Goa." National Book Trust India, New Delhi. 2004 8. Larsen, Karin, Faces of Goa, Gyan Publishing House, 1998. 9. Regional Plan for Goa 2001, Govt. Printing Press, Panaji, Goa, 1988. 10. Regional Plan for Goa 2021. Govt. Printing Press, Panaji, Goa, 2008. 11. Statistical Pocket Books, Govt. Printing Press, Panaji. 1986-2018 12. Techno Economic Survey of Goa, NCAER, Govt. Printing Press, Panaji.1972 13. Thirty years of Economic Development, Goa Chamber of Commerce & Industry, Panaji, 1992.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the distinct physical divisions within Goa, including coastal areas, plains, hills, and any significant geographical features that shape the region. 2. **Compare and contrast** the Climate of Goa with that of the rest of the country 3. **Identify and analyze** the key challenges faced in water management in Goa 4. **Develop** an integrated perspective on the management of natural resources in Goa, considering the interconnectedness of minerals, forests, rivers, and water bodies, and recognizing the importance of sustainable practices.

Name of the Programme : **B. Sc. Geography**
Course Code : **GOG-221**
Title of the Course : **Spatial Planning for Tourism Operations (Vocational)**
Number of Credits : **3+1=4**
Effective from AY : **2024-25**

Pre-requisites for the Course:	Nil	
Course Objectives:	The course aims to provide students with a comprehensive understanding of the travel and tourism industry by exploring its key components, sectors, and the significant role of geography in shaping travel experiences. Through the development of basic customer service skills, including effective communication and cultural sensitivity, students will be prepared for successful interactions within the industry. Additionally, the course seeks to equip students with the ability to identify and analyse popular tourist destinations, considering geographical features and cultural attractions.	
		No. of hours
Contents:	**1. Introduction to Travel and Tourism Operations** • Overview of the travel and tourism industry • Role of Geography in shaping travel experiences • Basic customer service skills in tourism (Communication Skills, Cultural Sensitivity, Product Knowledge, Problem-Solving Abilities, Empathy, Time Management, Adaptability, Customer Focus, Teamwork, Positive Attitude) • Identifying and analyzing popular tourist destinations • Understanding the geographical features that attract tourists	**15**
	2. Sustainable Tourism Practices • Introduction to sustainable tourism • Implementing eco-friendly practices in travel operations • **Case studies on successful sustainable tourism initiatives** [Costa Rica-Sustainable Tourism Pioneers, Bhutan-Gross National Happiness (GNH) and Tourism, Palau-Coral Reef Conservation and Ecotourism, Namibia-Community-Based Wildlife Conservation, Sikkim-India's First Fully Organic State] • Field visit to eco-tourism site in Goa to understand its eco-friendly practices	**15**
	3. Travel Planning and Itinerary Design • Introduction to travel planning software (TripGo, Road Trip Planner, Open Trip Planner, Itinero) • Conducting basic destination assessments • Creating sample travel itineraries • Budgeting and cost estimation for travel packages (The help of local tour operator/agency may be sought)	**15**

	4. Practical: Customer Interaction and Communication • Effective communication skills for travel professionals • Dealing with customer inquiries and concerns • Role-playing scenarios for customer interactions • Booking and managing travel tickets • Handling travel logistics and emergencies (The help of local tour operator/agency may be sought)	**30**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Bhatia, K.K. *Geography of Travel and Tourism in India.* Concept Publishing Company, 2007. 2. Dhar, P.N. *International Tourism: Emerging Challenges and Future Prospects.* Kanishka, New Delhi, 2006. 3. Dube, R.C. *Tourism in India.* Sterling Publishers Pvt. Ltd, 2007. 4. Dixit, Manoj. *Tourism: Concepts and Practices.* Aavishkar Publishers, 2006. 5. de Blij, Harm J., Peter O. Muller, and Jan Nijman. *Geography: Realms, Regions, and Concepts.* Wiley, 2017. 6. Hall, M. and Stephen, P. *Geography of Tourism and Recreation – Environment, Place and Space.* Routledge, London, 2006. 7. Kamra, K. K. and Chand, M. *Basics of Tourism: Theory, Operation and Practise.* Kanishka Publishers, Pune, 2007. 8. Liu, Harvey Y. H., and Linda D. K. Nozick. *GIS for Travel and Tourism.* Springer, 2004. 9. Page, S. J. *Tourism Management: An Introduction.* Butterworth-Heinemann- USA, 2011. Chapter 2. 10. Page, Stephen, and Joanne Connell. *Tourism Management: An Introduction.* Routledge, 2018. 11. Pike, Steven. *Destination Marketing: An Integrated Marketing Communication Approach.* Routledge, 2008. 12. Raj, R. and Nigel, D. *Morpeth Religious Tourism and Pilgrimage Festivals Management: An International perspective.* CABI, Cambridge, USA, 2007, www.cabi.org. 13. Shafi, M. *Tourism and Cultural Development in India.* Kanishka Publishers, 2005. 14. Sharpley, Richard, and David J. Telfer. *Tourism: Principles and Practice.*	

	Channel View Publications, 2015. 15. Singh Jagbir. *Eco-Tourism.* Published by I.K. International Pvt. Ltd., S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India, 2014. 16. Tiwari, Alok R. *Tourism Management in India.* Kanishka Publishers, 2006
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Explain** how geographical features contribute to the attractiveness of tourist destinations. 2. **Apply** budgeting and cost estimation techniques to create sample travel itineraries. 3. **Analyze** the factors that make certain destinations popular among tourists. 4. **Develop** and propose eco-friendly practices for a travel operation.

Name of the Programme : **B.A. Geography**
Course Code : **GOG 261**
Title of the Course : **Exit Course "GIS Analyst"**
No. of Credits : **1+3=4**
Effective from AY : **2024-25**

Pre-requisite for the Course	This course is open to Geography students who opt to exit after completing the second year of the degree program.	
Course Objectives:	The GIS Analyst course provides a comprehensive understanding of Geographic Information Systems, covering foundational concepts, practical skills, and specialized applications. Learners will gain hands-on experience with leading GIS software, allowing them to analyze spatial data, create visually compelling maps, and solve real-world problems. The curriculum is designed to balance theoretical knowledge with practical skills, preparing participants for careers in various fields such as environmental science, urban planning, and data analysis.	
		No. of hours
Content:	**Introduction to GIS** Overview of GIS: Definition and components of GIS, Historical development and evolution Spatial Data and Coordinate Systems: Types of spatial data (vector and raster, Coordinate systems and map projections Data Sources and Acquisition: Remote sensing, GPS data collection, Cartography and map design principles Introduction to GIS Software: Overview of popular GIS software, Understanding the user interface of QGIS Basic GIS Operations: Data input and management, Spatial analysis techniques, Attribute data manipulation Advanced GIS Operations: 3D modeling and analysis, Geostatistics and spatial interpolation	15
	Spatial Analysis using QGIS Spatial Queries and Analysis: Overlay analysis, Proximity analysis, Spatial statistics Network Analysis: Routing and shortest path analysis, Service area analysis Terrain Analysis: Digital Elevation Models (DEMs), Slope and aspect analysis Map Design Principles: Cartographic elements and layout, Color theory in map design	30
	Interactive Mapping: Web-based mapping tools, Creating dynamic and interactive maps GIS in Specialized Fields: Applications in environmental science, Spatial analysis for ecological studies, Land-use planning, Infrastructure development and analysis **Professional Development** GIS Ethics and Standards: Ethical considerations in GIS, Compliance with industry standards	30

	Career Development: Building a GIS portfolio, Job search strategies and interview preparation	
	Real-world Application Apply GIS skills to solve a real-world problem Present findings and project outcomes	30
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. George Joseph: Fundamentals of Remote Sensing, Second Edition, Universities Press, Hyderabad 2. Jensen J. R.: Remote Sensing of the Environment: An Earth Resource Perspective, Pearson Education, Singapore. 3. Lillesand, Kiefer and Chipman: Remote sensing and Image Interpretation. 5 Ed. Wiley& sons. 4. Reddy Anji M.: Text Book of Remote Sensing and Geographical Information System, BS Publications, Hyderabad, AP 5. Rees, W. G.: Physical Principles of Remote Sensing, Second Edition, Cambridge University Press, UK. 6. Robinson A. H., Sale, R. D., Morrison, J. L., Muehrcke, P. C.: Elements of Cartography, John Wiley & Sons, New York. 7. Sarkar A,: Practical Geography: A Systematic Approach, Orient BlackSwan (Revised edition), Kolkata 8. Schowengerdt, Robert A.: Remote Sensing; Models and Methods for Image Processing, Academic Press, San Diego, California, USA	
Course Outcomes:	Upon completion of the GIS Analyst course, participants will be able to: 1. **Understand** the core principles and components of Geographic Information Systems. 2. **Perform** basic GIS operations, including data input, management, and spatial analysis techniques. 3. **Design** effective maps using cartographic principles and elements. 4. **Plan and execute** GIS projects.	

Name of the Programme : **B.A. Geography**
Course Code : **GOG-300**
Title of the Course : **Principles of Geomorphology**
Number of Credits : **3+1=4**
Effective from AY : **2025-26**

Pre-requisites for the Course:	Nil	
Course Objectives:	The course aims to provide students a thorough understanding of Geomorphology, covering fundamental concepts, historical development, and key contributors to the field. Topics include the meaning and scope of geomorphology, basic principles, Earth's structure, internal and external processes, and the classification of landforms. Special emphasis is placed on coastal and marine landforms, fluvial landforms, and their shaping processes. The course also explores human impacts on landscapes, including anthropogenic geomorphology, effects of land use changes, and strategies for managing geomorphic hazards like floods and landslides. The goal is to provide students with a holistic perspective on how Earth's surface evolves through natural processes and human interactions. Similarly, practical component of the syllabus aims to provide learners with a comprehensive understanding of topographical maps, imparting skills in map reading, interpretation, and practical application.	
		No. of hours
Contents:	**1. Introduction** • Meaning, Definitions, Scope and Nature of Geomorphology • Basic Concepts and Principles of Geomorphology • Historical Development of Geomorphology • Contributions of Hutton, Strahler, and King to Geomorphology **2. Earth Materials and Processes** • Overview of Earth's structure and composition • Internal processes: Plate tectonics, Mountain Building, Volcanicity, Seismicity, and Tsunami • External processes: Weathering and Erosion	**15**
	3. Landforms and Landscapes • Classification of landforms: (Topographic Classification, Structural Classification, Process-Based Classification, Tectonic Landforms) • Coastal and marine landforms and their Pro-cess:(Erosional Coastal Landforms, Depositional Coastal Landforms, Submarine Landforms, Coral Reefs, Estuarine Landforms, Tidal Processes, Sea Level Changes, Human Interaction with Coastal Landforms) • Fluvial landforms and processes and their process: (River Channel Morphology, River Valley Formation, River	**15**

	Erosion Processes, River Transportation, River Depositional Landforms, Fluvial Erosion Features, Human Interaction with Rivers)	
	4. Human Impact on Landscapes • Anthropogenic Geomorphology • Land use changes and their geomorphic effects • Mitigation and management of geomorphic hazards (Flood, Landslides, Avalanches)	**15**
	5. **Practicals in Geomorphology** **A) Introduction to Topographical Maps** • Understanding topographical maps, Symbols, Legends, Map Series and Scales • Indexing of Indian Topo-sheets • Reading, Drawing, and interpreting contour lines and profiles • Practical application of map-reading skills in the field • Identifying and locating key features on a local topographical map • Measuring distances and calculating elevations using contour lines **B) Interpretation of Topographical Maps** Study and interpretation of Indian Topographical maps of Survey of India (Series-1: 50000 or 1: 25000) with reference to following (Study of any Three Region is compulsory) **1. Coastal Region:** a. *Exercise 1: Coastal Landforms Analysis* - Identify and analyze coastal landforms such as beaches, cliffs, and estuaries. - Interpret the influence of wave action and sea currents on the coastline. - Explore the spatial distribution of coastal features on the topographical map. b. *Exercise 2: Coastal Zone Management* - Evaluate the suitability of the coastline for human activities. - Identify areas prone to erosion and potential sites for development. - Develop a coastal zone management plan based on the topographical map. **2. Hilly Region:** a. *Exercise 1: Mountainous Terrain Interpretation* - Analyze the topographical map to identify mountain ranges, peaks, and valleys. - Examine the drainage patterns and watershed boundaries in the hilly region. - Interpret the impact of elevation on landforms and vegetation. b. *Exercise 2: Slope Analysis and Land Use* - Assess the steepness of slopes in the hilly terrain using contour lines. - Identify areas suitable for agriculture, forestry, and settlement. - Propose land use strategies based on slope analysis and accessibility. **3. Desert Region:** a. *Exercise 1: Dune Fields and Wind Erosion* - Identify and analyze sand dune fields on the topographical map. - Interpret the role of wind erosion in shaping desert landscapes. - Evaluate the potential impact of dune migration on surrounding areas.	**30**

	b. *Exercise 2: Water Sources and Settlements* - Locate and analyze water sources such as oases, rivers, or aquifers. - Identify patterns of human settlement and infrastructure in desert regions. - Propose strategies for sustainable water management in arid environments. **4. Plains Region:** a. *Exercise 1: River Systems and Floodplains* - Identify major rivers and their tributaries on the topographical map. - Analyze the characteristics of floodplains and meandering channels. - Assess the vulnerability of plains to river-related hazards. b. *Exercise 2: Agricultural Land Use* - Interpret patterns of agricultural land use in the plains. - Identify key factors influencing crop distribution and irrigation. - Propose improvements for sustainable agriculture in the region. **5. Plateau Region:** Guidelines for interpreting a topographical map of a plateau: • Elevation and Contour Lines: Identify contour lines to understand the elevation variations. Locate high points (plateau surface) and areas of elevation changes, such as escarpments or cliffs. • Plateau Surface Characteristics: Look for flat or gently undulating areas representing the plateau surface. • Escarpments and Cliffs: Identify escarpments or cliffs that mark the edges of the plateau. • Drainage Patterns: Analyze the drainage patterns to understand how water flows on the plateau. Look for rivers and streams cutting through the plateau, forming valleys. Identify whether the rivers flow radially outward from a central high point or follow the general slope of the plateau. • River Valleys: Locate River valleys that have incised into the plateau. Examine the depth and width of these valleys and the pattern of meandering. • Human Settlements: Locate towns, villages, and roads on the plateau surface and along its edges. Consider how human settlements utilize the plateau's topography. • Vegetation and Land Use: Identify vegetation types and land use patterns on the plateau. • Plateau Features: Look for specific plateau features such as mesas, buttes, or tablelands. These may be represented by flat areas on the map at higher elevations.	
	One day field visit (within Goa including home taluka) for Orientation of Toposheet: The primary objective of this field visit is to acquainting students with topographic sheets (toposheets) include sharpening skills in reading and interpreting toposheets, keen observation and identification of geographical	

	features, and the subsequent preparation of a concise report summarizing key findings from the field. In the field visit students will actively engage in hands-on learning to enhance their understanding of topographical mapping and geographical features.	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Ahmed, E. *Geomorphology*. Kalyani Publishers, 2005. 2. Bloom, Arthur L. *Geomorphology – A Systematic Analysis of Late Cenozoic Landforms*. Prentice Hall, 2008. 3. Chorley, Richard J. *Spatial Analysis in Geomorphology*. Harper and Row Publishers, 2002. 4. Dayal, P. *A Textbook of Geomorphology* (2nd edition). Shukla Book Depot, 2006. 5. Huggett, R. J. *Fundamentals of Geomorphology*. Routledge, 2007. 6. Lal, D. S. *Oceanography*. Prayag Pustak Bhavan, 2004. 7. Sharma, H. S., editor. *Perspectives in Geomorphology, Vol. I & IV*. Concept, 2002. 8. Sharma, V. K. *Geomorphology, Earth Surface, Process and Forms*. Tata McGraw Hill, 2006. 9. Singh, S. *Physical Geography*. Prayag Pustak Bhawan, 2005. 10. Sparks, B. W. *Geomorphology* (2nd edition). Longman, 2000. 11. Strahler, A. N. *Dynamic Basis of Geomorphology*. G. Bell and Sons, 1952. 12. Strahler, A. N. *Physical Geography* (3rd Ed.). Wiley Publications, 2005. 13. Thornbury, W. D. *Principles of Geomorphology*. John Wiley & Sons, 1954. 14. Thornbury, W. D. *Principles of Geomorphology*. Wiley International, 2004. 15. Wooldridge, S. W., and Morgan, R. S. *The Physical Basis of Geography* (First published in 1937). Longman, 2008. 16. Worcestor, P. G. *A Textbook of Geomorphology* (2nd Ed.). Van Nostrand, 2005. **References for Practicals** 1. Cuff, J. D., and Mattson, M. T. *Thematic Maps: Their Design and Production*. Methuen Young Books, 1982.	

	2. Dent, B. D., Torguson, J. S., and Holder, T. W. *Cartography: Thematic Map Design* (6th Edition). Mcgraw-Hill Higher Education, 2008. 3. Gupta, K. K., and Tyagi, V. C. *Working with Maps*. Survey of India, DST, New Delhi, 1992. 4. Kraak, M. J., and Ormeling, F. *Cartography: Visualization of Geo-Spatial Data*. Prentice-Hall, 2003. 5. Mishra, R. P., and Ramesh, A. *Fundamentals of Cartography*. Concept, New Delhi, 1989. 6. Sarkar, A. *Practical Geography: A Systematic Approach*. Orient Black Swan Private Ltd., New Delhi, 2015. 7. Singh, R. L., and Singh, R. P. B. *Elements of Practical Geography*. Kalyani Publishers, 1999. 8. Slocum, T. A., McMaster, R. B., and Kessler, F. C. *Thematic Cartography and Geovisualization* (3rd Edition). Prentice Hall, 2008. 9. Tyner, J. A. *Principles of Map Design*. The Guilford Press, 2010.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Classify** landforms based on topography, structure, processes, and tectonic origin. 2. **Apply** knowledge of geomorphological principles to analyze and interpret specific landforms and landscapes. 3. **Develop** mitigation and management strategies for geomorphic hazards, synthesizing understanding and critical analysis. 4. **Demonstrate** proficiency in reading and interpreting topographical maps and **Develop** sustainable strategies for different geographic regions based on topographical map data.
Instructions	1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner. 2. The total workload for this course is 30 hours, which corresponds to 1 credit. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions. 3. There are a total of 15 laboratory sessions scheduled, with a total duration of 30 hours. 4. Each batch will comprise of 20 students. 5. The practical examination will be of 2 hours duration and will carry 25 marks. 6. The assessment for the practical examination also includes a total of 2.5 marks for the journal and 2.5 marks for the Viva Voce examination. 7. The practical examination is scheduled to be conducted at the end of the semester either in the Geography Laboratory or a designated location exclusively assigned for the purpose. 8. In the event of a University Examination, the University shall appoint

	the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College). 9. In case of a College Examination, the Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

Name of the Programme : **B.A. Geography**
Course Code : **GOG-301**
Title of the Course : **Principles of Remote Sensing**
Number of Credits : **3+1=4**
Effective from AY : **2025-26**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course is designed to provide a comprehensive introduction to the fundamental principles and applications of remote sensing. The course will cover the basic concepts, technologies, and techniques used in remote sensing, with a focus on understanding the principles behind the collection and analysis of spatial data. The The Practical component of the course serves as an introduction to geospatial data analysis, focusing on fundamental concepts and practical skills. Participants will gain proficiency in utilizing key tools and techniques for interpreting and analyzing geospatial data.	
		No. of Hours
Contents:	**Introduction to Remote Sensing** • Definition and principles of remote sensing • History and evolution of remote sensing • Types of remote sensing (active vs. passive, aerial vs. satellite) • Electromagnetic spectrum: wavelengths, energy interactions • Platforms: satellites, aircraft, drones, ground-based sensors • Types of sensors (optical, thermal, radar, LiDAR) • Characteristics and specifications of common remote sensing sensors	**15**
	Remote Sensing Data Acquisition • Image resolution and pixel size • Georeferencing and spatial resolution • Data formats (raster vs. vector) • Data acquisition methods (pushbroom vs. whiskbroom)	**15**
	Applications of Remote Sensing • Agriculture and crop monitoring • Environmental monitoring and assessment • Coastal Zone Management • Urban planning and land use/land cover mapping • Disaster management and response	**15**
	Practicals in Remote Sensing • Creating accounts in (Bhuvan, GLOVIS portals) and data downloads. • Importing raster data and Georeferencing (Geographic and Projected Coordinate System).	**30**

	• Elements of interpretation, Layer stacking and Band combination (True Color Composite) (TCC) and (False Color Composite) (FCC). • Radiometric and Atmospheric Corrections. • Mosaic raster dataset. • Creation of AOI and subset (AOI & Viewer) • Creation of Maps (Hillshade, Viewshade, Aspect, Slope and Raster Contours). • Pan Sharpening/Resolution Merge. • Spectral Signature Curve using Semi-Automatic Classification Plugin. • Calculation of Indices (NDVI, NDWI, MNDWI, NDBI, SAVI) • Focal Analysis on Distorted Data *Note: The aforementioned exercises can be conducted utilizing open-source software like QGIS etc.*	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Campbell, James B., and Randolph H. Wynne. *Introduction to Remote Sensing. Guilford Press, 2011.* 2. Jensen, John R. *Introductory Digital Image Processing: A Remote Sensing Perspective. Pearson, 2016.* 3. Jensen, John R. *Remote Sensing of the Environment: An Earth Resource Perspective. Pearson, 2016.* 4. Lillesand, Thomas M., and Ralph W. Kiefer. *Remote Sensing and Image Interpretation. Wiley, 2015.* 5. Maune, David F. *Digital Elevation Model Technologies and Applications: The DEM User's Manual. ASPRS Publications, 2007.* 6. Ramachandra, T. V., Uttam Kumar, and K. S. Rajasekara Murthy. *Remote Sensing Applications in Environmental Research. Capital Publishing Company, 2007.* 7. Richards, John A. *Remote Sensing Digital Image Analysis: An Introduction. Springer, 2006.* 8. Richards, John A. *Remote Sensing with Imaging Radar. Springer, 2010.* 9. Ridd, Merrill K., and John D. Wood. *The Science of Remote Sensing: A Primer. Routledge, 2008.* 10. Thenkabail, Prasad S., John G. Lyon, and Alfredo Huete. *Hyperspectral*	

	Remote Sensing of Vegetation. CRC Press, 2012. **Remote Sensing Data Acquisition:** 1. ESRI Learn GIS - Remote Sensing Training: ESRI Learn GIS 2. UNAVCO SAR Training Materials: UNAVCO SAR Training **Image Interpretation and Analysis:** 1. USGS Earth Resources Observation and Science (EROS) Center: USGS EROS Center 2. Google Earth Engine: Google Earth Engine **Applications of Remote Sensing:** 1. FAO - Remote Sensing for Agriculture: FAO Remote Sensing for Agriculture 2. NASA Applied Remote Sensing Training (ARSET): NASA ARSET 3. UNEP - Remote Sensing for Environmental Monitoring: UNEP Remote Sensing **General Remote Sensing Resources:** 1. Remote Sensing and GIS Resources by ISRO (Indian Space Research Organisation): ISRO Remote Sensing Resources 2. European Space Agency (ESA) - Remote Sensing Data: ESA Earth Online 3. Open Course Ware (OCW) - MIT Introduction to Remote Sensing: MIT OCW Remote Sensing **References for Practical:** 1. Gupta. R.P., (2005). Remote Sensing Geology (2nd Edition), Springer India, New Delhi. 2. Imagine (2009). Tour Guide Imagine, Leica Geosystem GIS & Mapping, Atlanta. 3. Jensen, J. R., (2007). Remote Sensing of the Environment: An Earth Resource Perspective, 2nd Edition, Prentice-Hall Inc., New Jersey. 4. Jude Hemant (2020). Artificial Intelligence Techniques for Satellite Image Analysis Remote Sensing and Digital Image Processing, Springer, India. 5. Lillisand. T.M., and Kiefer, P.W., (1998). Remote Sensing and Image Interpretation, John Wiley & Sons, New York. 6. Michael Law (2021) Getting to Know ArcGIS Pro 2.8 Fourth Edition, ESRI Press, U.S.A 7. Paul Gibson, and Clare H. Power, (2000). Introductory Remote Sensing: Digital Processing and Applications, Routledge Publisher, London. 8. Richards, J. A. and Jia Xiuping (2005). Remote Sensing Digital Image Analysis: An Introduction, 4th Edition, Springer –Verlag, Berlin. 9. Sarkar A. K. (1997) Practical Geography: A Systematic Approach, Oriental Longman, Calcutta. 10. Singh, R.L. and Dutt, P.K. (1979) Elements of Practical Geography, Kalyani Publishers, New Delhi.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Comprehend** the fundamental principles underlying remote sensing technology.

	2. **Relate** the concepts of data acquisition to the characteristics of different remote sensing platforms and sensors. 3. **Develop** skills in visually interpreting features and patterns in remote sensing imagery as well as in the application of remote sensing data in making informed decisions in agriculture, environmental management, urban planning, and disaster response. 4. **Demonstrate** a working knowledge of Remote Sensing tools and functionalities for basic geospatial analysis and **Develop** critical thinking skills for analyzing geospatial data
Instructions	1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner. 2. The total workload for this course is 30 hours, which corresponds to 1 credit. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions. 3. There are a total of 15 laboratory sessions scheduled, with a total duration of 30 hours. 4. Each batch will comprise of 20 students. 5. The practical examination will be of 2 hours duration and will carry 25 marks. 6. The assessment for the practical examination also includes a total of 2.5 marks for the journal and 2.5 marks for the Viva Voce examination. 7. The practical examination is scheduled to be conducted at the end of the semester in either in the Geography Laboratory or a designated location exclusively assigned for the purpose. 8. In the event of University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College). 9. In case of a College Examination, Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

Name of the Programme : **B.A. Geography**
Course Code : **GOG- 302**
Title of the Course : **Statistical Methods in Geography**
Number of Credit : **04**
Effective from AY : **2025-26**

Pre- requisites for the course:	Nil	
Course Objectives:	The course provides an introduction to statistical methods in Geography. It equips students with statistical methods such as descriptive statistics, absolute and relative measures, bivariate analysis.	
		No. of hours
Contents:	1. **Introduction to Statistical Methods in Geography:** • Significance of Statistical Methods in Research and Data Collection • Sources of Statistical Data Collection • Methods of Statistical Data Collection (Census vs Sampling) • Classification and Tabulation of Data • Graphical Representation of Data.	**15**
	2. **Statistical Methods in Geography-** **Descriptive Statistics:** • Histogram and Frequency Distribution Curve • Calculation of Arithmetic Mean, Median and Mode; their comparison • Quartile and Deciles	**15**
	3. **Measures of Dispersion-** **A) Absolute Measures:** • Range • Quartile Deviation • Mean Deviation • Standard Deviation **B) Relative Measures:** • Coefficient of Variation	**15**
	4. **Bivariate Analysis:** • Scatter Diagram • Correlation Analysis • Spearman's Rank Correlation • Karl Pearson's Correlation Coefficient	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities.	

Issued on: 24/01/2025

	7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. *Alvi, Zamir. Statistical Geography: Methods and Application. Rawat Publication, 2002.* 2. Aslam, Mahmood. *Statistical Methods in Geographical Studies.* Rajesh Publications, 1999. 3. Das, N.G. *Statistical Methods, Combined Edition (Volumes I & II).* Mc Graw Hill Education, 2017. 4. Gheyas, Muhammad. *Measures of Dispersion: Absolute and Relative Measures.* Kindle Edition, 2020. 5. Singh, Dr. L.R. *Fundamentals of Practical Geography.* Sharda Pustak Bhawan, Prayagraj, 2022. 6. Singh, Gopal. *Map Works and Practical Geography.* Vikas Publishing House Pvt. Ltd, 2007. 7. Wrigley, N., & Bennett, R.J. *Quantitative Geography.* British View, Routledge and Kegan Paul, London, Boston and Henley, 1981. 8. Dr. Mahesh Pratim Barman, Prof. Jiten Hazarika, Dr. Toralima Bora. *Statistical Methods, As Per CBCS Syllabus.* Mahaveer Publication, 2021. 9. Meher, Manoj Ku. *Statistical Methods in Geography, Kalahandi University.* 2023.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the basic concepts, methods, types and formats of data. 2. **Develop** critical thinking skills to draw meaningful conclusions from descriptive statistics in a geographical context, contributing to informed decision-making and interpretation of spatial data. 3. **Develop** effective communication skills to convey the results of dispersion analyses clearly, making use of appropriate visualizations and reports to enhance the interpretation of spatial data variability. 4. **Apply** scatter diagrams and correlation analyses to real-world geographical phenomena, such as the relationship between population density and environmental factors, to enhance the understanding of spatial patterns.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-303**
Title of the Course : **Economic Landscape of Goa**
Number of Credits : **02**
Effective from AY : **2025-26**

Pre-requisites for the Course:	Nil	
Course Objectives:	The course aims to provide a holistic understanding of Goa's economic landscape, covering key sectors such as agriculture, animal husbandry, fishing, mining, manufacturing, tourism, transport, and demography. Students will analyze the interdependencies and challenges within these sectors. Effective communication and critical thinking skills will be emphasized, preparing students for informed decision-making and active participation in Goa's economic and regional development initiatives.	
		No. of hours
Contents:	**Agriculture, Fishing & Mining** **Agriculture:** Significance of agriculture to the State's economy. Factors affecting agriculture in Goa: physical, economic, social and technological. Farming Types: Kharif & Rabi, humid farming, horticulture, plantation; Vaingan, Puran Xeti, Kumeri, Kulagar. Methods of cultivation, distribution and production: cereal crops (rice, millets), cash crops (cashew, sugarcane), garden crops (coconut, beetle nut) **Fishing:** Types (shore and inland fisheries), species, fishing seasons, fishing jetties, production, marketing, changes, problems and future prospects. **Mining:** History of mining in Goa, mining methods, production and trade of minerals (iron ore, manganese, bauxite), Positive and Negative Impacts of mining, Issues related to illegal mining, Banning of mining activity and its impact on people and environment	**15**
	Manufacturing, Tourism, Transport, Demography: **Manufacturing:** Industrial scenario in pre and post-liberation of Goa, Role of GIDC, Industrial Estates, Types of Industries Study of Industries: Chemicals and Fertilizers, Pharmaceutical, Shipbuilding, Importance of Industries to Goa, Problems associated with Industrialization in Goa, Environmental movements and their impact on Industrialization of Goa. **Tourism:** Meaning, types of tourists; tourist seasons and arrivals. Factors promoting tourism in Goa (natural, historical, religious-socio-cultural), leading tourist destinations and tourism infrastructural facilities in the State. Positive and negative impacts of tourism in Goa **Transport:** Development of transport network, modes and their functional significance (air, roadways, railways and waterways),	**15**

	problems of transport system **Demographic Profile of Goa:** Population size, growth and distribution, Age and sex structure, Urbanization in Goa, Migration Patterns, Future Trends and Challenges in Population.	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Angle, P. S. "An Economic Review of Goa." 2. Daily newspapers published from Goa (Publication House) and Television News covering Goa. 3. Fish Curry and Rice. An Eco-Farm Publication. 4. Faces of Goa. Larsen, Karin. Gyan Publishing House, 1998. 5. Gomes, Olivinho J. F. "Goa." National Book Trust India, New Delhi. 6. Govt. of Goa. "Economic Survey of Goa." DPSE publication, Govt. Printing Press, Panaji. 7. Govt. of Goa. "Regional Plan for Goa 2001." Govt. Printing Press, Panaji, Goa, 1988. 8. Govt. Of Goa, Regional Plan for Goa 2021. Govt. Printing Press, Panaji, Goa, 1988. 9. Govt. Of Goa, Coastal Zone Management Plans 10. Govt. of Goa. "Statistical Pocket Books." Govt. Printing Press, Panaji. 11. Govt. of India. "Gazetteer of Goa, Daman & Diu." Govt. Printing Press, Panaji-Goa. 12. Goa Chamber of Commerce & Industry. "Thirty years of Economic Development by 1992." Panaji. 13. NCAER. "Techno Economic Survey of Goa." Govt. Printing Press, Panaji.	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Apply** critical thinking skills to propose sustainable solutions to challenges faced by the agricultural, fishing, and mining sectors in Goa. 2. **Analyze** the impacts of the banning of mining activity on both people and the environment 3. **Engage** in discussions and presentations demonstrating a comprehensive understanding of the interplay between manufacturing, tourism, transport, and demography.	

	4. **Critically** assess the sustainability of Goa's tourism industry

Name of the Programme : **B.A. Geography**
Course Code : **GOG-321**
Title of the Course : **Application of Field Study and Survey Techniques in Geography (Vocational)**
Number of Credits : **1+3=4**
Effective from AY : **2025-26**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course is designed to provide undergraduate students with theoretical knowledge and practical skills necessary for conducting field studies and surveys in geography. Students will learn about various field study and survey techniques commonly used in geographical research, including their application, advantages, and limitations. Through practical exercises and fieldwork, students will develop hands-on experience in data collection, analysis, and interpretation.	
		No. of hours
Contents:	**1. Fundamentals of Geography and Field Work:** • Importance of Field Work in Geographical and Societal Studies • Role, Value and Ethics of Field-Work. • Factors Influencing the Fieldwork and Survey • Scope of Field Work in the Society, Market Govt. and Non-Govt. agencies • Importance and objectives of field studies and surveys • Limitations of Field Work and Field Surveys • Types of field study and survey methods • Planning and designing a field study or survey • Ethical considerations in geographical research • Data analysis and interpretation techniques	**15**
	2. Fieldwork Preparation and Data Collection • Overview of fieldwork equipment and tools: Measuring Instruments, Navigation Tools, Sampling Tools, Recording and Data Collection • Techniques for selecting study sites and sampling • Fieldwork logistics and safety protocols • Data collection methods: observation, interviews, questionnaires, and measurements • Hands-on practice in data collection: field trips •	**30**
	3. Practical Unit - Data Analysis and Interpretation • Quantitative data analysis techniques: descriptive statistics, inferential statistics, and spatial analysis • Qualitative data analysis methods: thematic analysis, content analysis, and narrative analysis • Visualization of geographical data using maps, graphs,	**30**

	and charts • Interpretation of field study and survey results • Case studies for practical application of data analysis techniques	
	4. Practical Unit - Reporting and Presentation • Principles of writing field reports • Structure and format of a field report • Data presentation techniques: tables, figures, and diagrams • Presentation skills: oral presentations and poster presentations	**30**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Reading:	1. Dikshit, R. D. *The Art and Science of Geography: Integrated Readings*, Prentice-Hall of India, 2003, New Delhi. 2. Evans, M. "Participant Observation: The Researcher as Research Tool" in *Qualitative Methods in Human Geography*, edited by J. Eyles and D. Smith, Polity, 1988. 3. Mukherjee, Neela. *Participatory Learning and Action: with 100 Field Methods*, Concept Publs. Co., 2002, New Delhi. 4. Robinson, A. "Thinking Straight and Writing That Way" in *Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioral Sciences*, edited by F. Pryczak and R. Bruce Pryczak, Publishing, 1998, Los Angeles. 5. *Special Issue on "Doing Fieldwork"* The Geographical Review, vol. 91, no. 1-2, 2001. 6. Stoddard, R. H. *Field Techniques and Research Methods in Geography*, Kendall/Hunt, 1982. 7. Wolcott, H. *The Art of Fieldwork*, Alta Mira Press, 1995, Walnut Creek, CA	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Comprehend** the importance and objectives of field studies and surveys in geographical research. 2. **Develop** a fieldwork plan outlining sampling methods, data collection protocols, and safety measures.	

	3. **Synthesize** field study findings and survey results to generate comprehensive reports or presentations, effectively communicating their research outcomes. 4. **Deliver** an oral presentation summarizing the methodology, results, and implications of a field study to peers and faculty members.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-304**
Title of the Course : **Principles of Climatology**
Number of Credits : **3+1=4**
Effective from AY : **2025-26**

Pre-requisites for the Course	Nil	
Course Objectives:	This paper intends to introduce students to the rationale underlying climatological studies in geography. It seeks to bring understanding about basic concepts of atmospheric phenomena and their relevance in addressing climatic issues. It also tries to bring appreciation about the inter-relative and correlative nature of weather and climate.	
		No. of hours
Contents:	**Introduction:** Definition and Scope of Climatology. Weather and Climate: Meaning, Elements and Factors Atmosphere: Origin, Composition & Structure. Insolation and Temperature: Factors and Distribution, Heating and cooling of atmosphere, Heat Budget, Temperature Inversion. Atmospheric Pressure and Wind: Pressure belts, General circulation in atmosphere, Factors affecting winds, Planetary wind system.	**15**
	Dynamic Atmosphere: Jet streams: Development and Significance. Monsoon - Origin and Mechanism. Atmospheric moisture: Evaporation, Humidity, Condensation, Fog and Clouds, Precipitation Types, Stability and Instability. Air masses and Fronts: Origin, classification and significance.	**15**
	Atmospheric disturbances: Cyclones and Anti-cyclones (Tropical & Temperate) - origin and development, Thunderstorms. Extreme Climatic Events: Climate change, Global warming, Acid rain, Ozone layer depletion, Cloud burst. Climate classification (Koppen).	**15**
	Practicals in Climatology • Weather Measurement: Measurement of temperature, wind direction and velocity, humidity and cloud cover. • Simple line and bar graph, Water balance graph, Ombrothermic graph. • Hythergraph, Climograph (Taylor), Wind rose diagrams, Ergograph. • Isopleth maps (for temperature and rainfall data) • Preparation of weather station model. Interpretation of Indian Daily Weather Reports for summer, winter, rainy and retreating monsoon seasons with reference to	**30**

	temperature, air pressure, wind (direction & velocity), cloud cover, precipitation, other weather phenomena and sea condition. Study tour to be conducted & report writing with reference to weather, drainage, climate, soil, topography cultural landscape & economic activities outside the state for minimum of 03 days exclusive of travel time.	
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings	1. Barry, R. G., and Carleton, A. M. *Synoptic and Dynamic Climatology.* Routledge, 2001. 2. Barry, R. G., and Corley, R. J. *Atmosphere, Weather and Climate.* Routledge, 1998. 3. Barua, A. K. *Climatology.* Dominant Publishers and Distributors, 2005. 4. Bryant, Richard H. *Physical Geography.* Rupa & Co., 1976. 5. Critchfield, H. J. *General Climatology.* Prentice-Hall of India, 1987. 6. Das, P. K. *The Monsoon.* National Book Trust, India, 2000. 7. Husain, Majid. *Climatology.* Anmol Publications Pvt. Ltd., 1994. 8. Lal, D.S. *Climatology.* Sharda Pustak Bhawan, 2018-19. 9. Leong, Goh Cheng. *Certificate Physical and Human Geography.* Oxford University Press, 1974. 10. Lutgens, F. K., Tarbuck, E. J., and Tasa, D. *The Atmosphere: An Introduction to Meteorology.* Prentice-Hall, 2009. 11. Oliver, J. E., and Hidore, J. J. *Climatology: An Atmospheric Science.* Pearson Education, 2002. 12. Trewartha, G. T., and Horne, L. H. *An Introduction to Climate.* McGraw-Hill, 1980. 13. Siddhartha, K. *Atmosphere, Weather And Climate.* Kisalaya Publications Pv. Ltd., 2000. 14. Siddhartha, K., Mahapatra, S., and Mukherjee, S. *Basic Physical Geography.* Kisalaya Publications Pv. Ltd., 2013. 15. Sindhu, P. S. *Chemistry of Atmosphere.* New Age International (P) Limited Publishers, 2007. 16. Singh, Savindra. *Climatology.* Pravalika Publication, 2020. 17. Varkey, M. J. *Science of Asian Monsoon.* National Institute of Oceanography (C. S. I. R.), 2007.	

	References for Practicals: • Kannan, Monika and Yadav, Shilpi, (2022): Practical Geography, Rawat Publications, Jaipur. • Khan, Z. A.: Textbook of Practical Geography, Concept publishing Company, New Delhi. • Khullar, D.R. (2018): Essentials of Practical Geography, New Academic Publishing Co., Jalandhar. • Saha, Pijushkanti and Basu, Partha (2014): Advanced Practical Geography, Book & Allied (P) Ltd., Kolkata. • Sarkar, Ashis (2015): Practical Geography – A Systematic Approach, Orient Black Swan, New Delhi. • Singh, Gopal, (1998): Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi. • Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad. • Singh, R.L.and Singh, Rana P.B. (2012): Elements of Practical Geography, Kalyani Publishers, Ludhiana.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Demonstrate** a comprehensive understanding of climatology, weather, and climate. 2. **Interpret** the dynamics of atmospheric circulation, including jet streams and monsoons. 3. **Develop** critical thinking skills to analyze environmental challenges related to climate change and global warming. 4. **Measure** the weather elements by using meteorological instruments and **Interpret** weather situation and project possible impacts upon human activities.

Instructions

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. The total workload for this course is 30 hours, which corresponds to 1 credit. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions.
3. There are a total of 15 laboratory sessions scheduled, with a total duration of 30 hours.
4. Each batch will comprise of 20 students.
5. The practical examination will be of 2 hours duration and will carry 25 marks.
6. The assessment for the practical examination also includes a total of 2.5 marks for the journal and 2.5 marks for the Viva Voce examination. 5 marks for Field visit report and viva
7. The practical examination is scheduled to be conducted at the end of the semester in either in the Geography Laboratory or a designated location exclusively assigned for the purpose.

8. In the event of University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College).
9. In case of a College Examination, Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).
10. If certain students are unable to partake in field visits outside Goa due to medical or genuine reasons, they may be granted permission to carry out fieldwork within Goa. Such students must submit their documentary evidence in writing to the College Principal to obtain permission.In such instances, the course teacher is tasked with assigning topics or specific places of visit for report writing to accommodate these students.

Field Visit Reporting Format

Title Page	1. Title of the Report 2. Student Name 3. Date of Submission 4. Institution Name 5. Certificate of Participation by the HoD
Abstract	A brief summary of the report, highlighting the main objectives, methodology, and key findings. Keep it concise, around 100-150 words.
Introduction	1. Background information on the field visit, including the purpose and objectives. 2. Explanation of the study area and its significance. 3. Overview of the methodology used during the field visit.
Study Area (Place of Visit)	Describe the geographical location, physical features, and any relevant information about the place of visit.
Methodology	Explain the methods and techniques used during the field visit
Analysis	1. Analyze the data and provide interpretations and relate them to the objectives of the field visit. 2. Use maps, charts, and graphs to illustrate data. 3. Include observations about landforms, climate, vegetation, human activities, or any other relevant aspects. 4. Compare those conditions with Goa
Findings	Present the main findings of your field visit.
Challenges and Limitations	Identify any challenges or limitations faced during the field visit that may have affected the data or results
Conclusion	Summarize the key points of your report.
References	Include a list of all the sources cited in the report
Acknowledgments	Express gratitude to individuals or organizations that contributed to the success of the field visit.

Issued on: 24/01/2025

Name of the Programme : **B.A. Geography**
Course Code : **GOG-305**
Title of the Course : **Fundamentals of Geographical Information System**
Number of Credits : **3+1=4**
Effective from AY : **2025-26**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course provides an introduction to the fundamental concepts and applications of Geographical Information Systems (GIS). Students will learn the principles of spatial data, GIS technology, data analysis, and cartographic representation. Through a combination of lectures, hands-on exercises, and projects, students will develop practical skills in utilizing GIS tools for spatial analysis and decision-making.	
		No. of Hours
Contents:	**Introduction to GIS** • Definition of GIS • Evolution and history of GIS • Components of GIS: Hardware, software, data, procedures, and people • Objectives of GIS • GIS Applications	**15**
	Data Types & Models • Spatial Data: Concept, Sources; • Data Models – Raster & Vector • Non-spatial Data: Concept, Sources; • Data Models – Relational, Network, Hierarchical & Object orientated	**15**
	Coordinate Systems, Map Projections and GIS Software and Tools • Understanding coordinate systems • Overview of map projections and their implications • Introduction to popular GIS software (e.g., ArcGIS, QGIS) • Basic operations: Data input, editing, and visualization	**15**
	Geospatial Data Management and Cartographic Techniques with QGIS -I • Creating accounts in (DIVA-GIS, Naksha SOI portals) and data downloads • Understanding and exploring tools in QGIS. • Understanding and Manage plugins. • Importing raster data and Georeferencing (Geographic and Projected Coordinate System). • Creation of Vector dataset and various databases. • Basic Digitization and Error Identification. **Geospatial Data Management and Cartographic Techniques with QGIS -II**	**30**

	• Correction and Topology Building. • Symbology (Simple Feature, Graduated, Categorized). • Geoprocessing tools (Spilt, Merge, Dissolve, Clip, Intersect) • Handling Attribute data and basic queries. • Field Calculations • Map Layouts (Title, Scalebar, Legend, North Arrow, Grids).	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. George Joseph: Fundamentals of Remote Sensing, Second Edition, Universities Press, Hyderabad 2. Jensen J. R.: Remote Sensing of the Environment: An Earth Resource Perspective, Pearson Education, Singapore. 3. Lillesand, Kiefer and Chipman: Remote sensing and Image Interpretation. 5 Ed. Wiley& sons. 4. Reddy Anji M.: Text Book of Remote Sensing and Geographical Information System, BS Publications, Hyderabad, AP 5. Rees, W. G.: Physical Principles of Remote Sensing, Second Edition, Cambridge University Press, UK. 6. Robinson A. H., Sale, R. D., Morrison, J. L., Muehrcke, P. C.: Elements of Cartography, John Wiley & Sons, New York. 7. Sarkar A,: Practical Geography: A Systematic Approach, Orient BlackSwan (Revised edition), Kolkata 8. Schowengerdt, Robert A.: Remote Sensing; Models and Methods for Image Processing, Academic Press, San Diego, California, USA	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the primary objectives of GIS in terms of spatial data management, analysis, and visualization. 2. **Apply** knowledge of spatial and non-spatial data models to solve real-world problems in various domains. 3. **Integrate** knowledge of coordinate systems and map projections to ensure accurate and meaningful spatial analysis. 4. **Identify** the methods of map creation and **Create** map using different elements of map making	

Instructions

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. The total workload for this course is 30 hours, which corresponds to 1 credit. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions.
3. There are a total of 15 laboratory sessions scheduled, with a total duration of 30 hours.
4. Each batch will comprise of 20 students.
5. The practical examination will be of 2 hours duration and will carry 25 marks.
6. The assessment for the practical examination also includes a total of 2.5 marks for the journal and 2.5 marks for the Viva Voce examination.
7. The practical examination is scheduled to be conducted at the end of the semester in either in the Geography Laboratory or a designated location exclusively assigned for the purpose.
8. In the event of University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College).
9. In case of a College Examination, Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

Name of the Programme : **B.A. Geography**
Course Code : **GOG-306**
Title of the Course : **Economic Landscape of India**
Number of Credits : **04**
Effective from AY : **2025-26**

Pre-requisites for the Course:	Nil	
Course Objectives:	1. To acquaint students with the basic principles and concepts of economic geography of India 2. To enable the students with the applications to economic geography for development in different areas. 3. The main aim is to integrate the various factors of economic development and to acquaint the students with this dynamic aspect of economic geography of India.	
		No. of hours
Contents:	**1. Indian Agriculture and Land Resource:** • Introduction to Indian agriculture • Salient features of Indian Agriculture Types of agriculture in India • Major crops: • Cereal crops-Rice & Wheat • Cash crops- Cotton & Sugarcane • Plantation crops: Tea & Coffee, Problems and prospects of Indian Agriculture • Agricultural regions of India	**15**
	2. Industries: • Industries: Types, locational factors and importance of industries in economic development • Detailed study of Iron and steel industry, Sugar industry, Cotton textile industry, Jute Industry, Chemical Industry, IT Industry • Major industrial regions of India	**15**
	3. Indian transport system: • Modes of transport- Roads, Railways, Airways & Waterways; • Factors affecting, • Development and growth of Indian transport network • Major ports of India • Current problems related to Indian transport.	**15**
	4. Trade system in India • Domestic & International trade of India; • Salient features of foreign trade of India; • Trends in India's foreign trade • Composition of import/export trade of India; • Current problems related to India's foreign trade	**15**

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Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Bansal, S.C. (2014): Advanced Geography of India, Meenakshi Prakashan, Meerut. 2. Gautam, Alka (2006) : Advanced Geography of India, Sharda Pustak Bhawan, Allahabad. 3. Husain Majid (2008), Geography of India McGraw Hills education pvt. Limited 4. Khullar, D.R. (2010): India : A Comprehensive Geography : Kalyani Publishers, Ludhiana. 5. Nag Prithvish and Sengupta, Smita (1992) Geography of India, concept Publishing Company, New Delhi. 6. National Atlas and Thematic Mapping Organization (NATMO) 1982, National Atlas of India. 7. Spate, O.H.K. and Learmonth, A.T.A. (1967) India and Pakistan : A General and Regional Geography, Methuen, London. 8. Saxena H.M. (2013) Economic Geography, Rawat Publications, Jaipur 9. Sharma, T.C. (2003) India: An Economic and Commercial Geography, Vikas Publishing House, New Delhi. 10. Singh, R.L. (Ed) (1971) India : A Regional Geography, National Geographical Society of India, Varanasi. 11. Tirtha Ranjit, Krishnan Gopal (1996), Geography of India Rawat Publications, Jaipur
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the fundamental concepts of Economic Geography of India. 2. **Analyse** the past, presents and future utility and potentials of natural resources. 3. **Evaluate** the challenges and opportunities of economic development in India 4. **Develop** critical thinking and analytical skills to address sustainability issues

Name of the Programme : **B.A. Geography**
Course Code : **GOG-322**
Title of the Course : **Applied Travel and Tourism Geography (Vocational)**
Number of Credit : **1+3=4**
Effective from AY : **2025-26**

Pre- requisites for the course:	Nil	
Course Objectives:	This course aims to provide students with a comprehensive understanding of the interplay between travel and tourism operations and geographical factors. It emphasizes the application of geographical knowledge in planning, managing, and enhancing travel experiences. The course also seeks to bridge the gap between theory and practical applications through the integration of geographical tools and real-world experiences.	
		No. of hours
Contents:	**1. Introduction to Applied Travel and Tourism Geography** • Definition and scope of applied travel and tourism geography • Importance and relevance of geographical perspectives in the tourism industry • Overview of key concepts and theories in travel and tourism geography • Factors influencing tourism destination development and attractiveness • Spatial patterns of tourism demand and supply • Geographical perspectives on destination image, branding, and marketing • Principles of sustainable tourism development • Geographic considerations in tourism planning and policy-making • Geographic perspectives on heritage preservation and interpretation	**15**
	2. Geospatial Analysis for Destination Assessment • Geospatial technologies and Tourism Management • Significance of Geographic Information Systems (GIS) for travel planning. • Role of technology in enhancing travel experiences. • Creating thematic maps depicting tourist attractions, accommodation facilities, and transportation networks • Conducting spatial analysis to identify hotspots of tourist activity and potential areas for development • Utilizing GIS tools to assess accessibility and connectivity between different tourist sites	**30**

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	3. Fieldwork and Site Visits • Conducting field surveys to assess visitor satisfaction, preferences, and behavior • Documenting spatial characteristics and features of tourist sites through field notes and photographs • Analyzing site visit observations to understand the spatial layout and management practices of tourism destinations • Conducting tourism impact assessments for selected destinations, including surveys, interviews, and data analysis • Identifying key stakeholders and engaging them in discussions on tourism management strategies • Developing action plans and recommendations for sustainable tourism development based on impact assessment findings	**30**
	Destination Marketing and Promotion Strategies • Developing marketing materials such as brochures, websites (using free websites), and social media content to promote tourism destinations • Conducting market research and segmentation analysis to identify target audiences and tailor marketing messages • Evaluating the effectiveness of marketing campaigns through metrics such as website traffic, social media engagement, and visitor arrivals	**30**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Albert, D. P., & Sirgy, M. J. (2004). Geographic Information Systems and Tourism. CABI. 2. Chipchase, J. (2017). The Field Study Handbook. Lulu.com. 3. Campagna, M. (2007). GIS for Sustainable Development. CRC Press. 4. Gupta, V., & Chandra, S. (2017). Destination Management: Concepts and Practices in India. Oxford University Press. 5. Goyal, N., & Jha, M. (2019). Tourism and Hospitality Management: Indian Perspective. Himalaya 6. Joshi, S., & Reddy, S. (2013). Heritage Tourism in India: Opportunities and Challenges. Mittal Publications. 7. Kumar, A., & Verma, R. (2015). Rural Tourism in India: A Geographical	

	Perspective. Kalpaz Publications. 8. Kumar, P. (2017). Tourism Geography: Indian Perspective. Sterling Publishers Pvt Ltd. 9. Mishra, R. K., & Chatterjee, P. (2017). Marketing Strategies for Tourism Industry: Indian Perspective. Prentice Hall India Learning Private Limited. 10. Raj, S. (2015). Tourism Marketing in India: A Strategic Approach. PHI Learning Pvt. Ltd. 11. Raj, S., & Kumar, P. (2014). Geography of Tourism in India. PHI Learning Pvt. Ltd. 12. Reddy, P. R., & Rao, B. S. (2015). Tourism Geography of India. Rawat Publications. 13. Singh, R., & Tiwari, S. (2016). Rural Tourism in India: A Spatial Analysis. Springer. 14. Seth, S., & Paliwal, R. (2018). Sustainable Tourism: Indian Scenario. Excel Books. 15. Sahay, B. S., & Patra, A. K. (2019). Geospatial Analysis in Tourism Planning: Case Studies from India. Springer. 16. Tewari, A., & Gupta, S. (2017). Ecotourism in India: Challenges and Opportunities. Cambridge Scholars Publishing.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Analyze** the importance and relevance of geographical perspectives in the tourism industry, and demonstrate an understanding of key concepts in travel and tourism geography. 2. **Develop** skills in utilizing geospatial technologies for travel planning and destination assessment, including creating thematic maps, conducting spatial analysis, and assessing accessibility and connectivity between different tourist sites. 3. **Acquire** practical skills in conducting field surveys to assess visitor satisfaction, preferences, and behavior, as well as documenting spatial characteristics and features of tourist sites through field notes and photographs. 4. **Develop** competencies in developing marketing materials such as brochures, websites, and social media content to promote tourism destinations.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-400**
Title of the Course : **Analytical Techniques in Geography**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites forthe Course:	Nil	
Course Objectives:	Analytical techniques in Geography is a technical and applicative course that provide students the base in analytical aspects of Geography. It takes into consideration the major analytical techniques of various disciplines of Geography. The main objective of this course is to orient the students to apply the analytical knowledge in the field of geographical research.	
		No. of hours
Contents:	**1. Advanced Spatial Statistical Analyses** • Statistics and Statistical Data: Spatial and Non Spatial • Correlation: Product Moment and Rank correlation • Regression: Linear and Non Linear. • Time Series Analysis: Time series Processes, Smoothing Time Series and Time Series Components • Hypotheses Analyses: Types and Testing	**15**
	2. Measurement Of Spatial Pattern And Distribution • Nearest Neighbor Index • Gravity Model by Rellys • Stewart's Potential Model • Z-Score and Composite Index • Graph theory and Network Geometry: Concept of topology, topological measurement of network efficiency.	**15**
	3. Socio-Demographic Analysis • Location Quotient Analysis • Index of Dissimilarity • Index of Isolation • Sopher Index of Disparity • Social Area analysis of a city (Shevky and Bell)	**15**
	4. Morphometric And Slope Analytical Techniques • Stream Order by Strahler's System • Bifurcation Ratio and Drainage Density • Slope analysis by Using Wenworth's Method • Roughness Index • Ruggedness Index	**15**
Pedagogy	• Lectures for theoretical foundations. • Group discussions and seminars for collaborative learning. • Presentations and case studies for real-world application. • Assignments and blended learning for interactive engagement. • Gamification and problem-solving approaches for practical skill development.	

	• Experiential learning through fieldwork and outdoor activities. • Discussion-based teaching for critical thinking. • Brainstorming sessions for idea generation. • Flipped classroom pedagogy for active participation. • Art Integrated Learning for creative expression. • Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	• Agyeman, Julian, Robert D. Bullard and Bob Evans (Eds.) (2003) Just Sustainabilities: Development in an Unequal World. London: Earthscan. (Introduction and conclusion) • Alvi Z (1995) 'Statistical Geography- Methods and Applications' by Rawat Publication , Jaipur • Bennet R.J & Wrigley. N (1981) ' Quantitative Geography: A British View' published by Routledge & Kegan Paul Ltd • Briggs K (1922) ' Practical Geography - Presentation and Analysis' published by Hodor and Stoghton, London • Das N G (2019)' Statistical Methods' published by M Graw Hill Tamil Nadu • Deshpandey A. V (2017) ' Statistical Techniques' by Vipul Prakashan , Mumbai • Hussain M (2021) ' Models in Geography' published by Rawat Publication Jaipur • Keller G & Malhotra G (2018)' Statistics for Management and Economics' published by CENGAGE Australia • Pathak K.B & Ram F (1998) ,'Techniques of Demographic Analysis' published by Himalaya Publishing House, Mumbai • Prasad G (2007), 'Trends and Techniques of Geomorphology' published by Discovery Publishing house New Delhi • Rogerson P (2020), ' Statistical Methods for Geography - A Student;s Guide' published by Sage publication New Delhi • Sarkar A (2017) ' Practical Geography - A systematic Approach' publisehd by Orient Blackswan Private Limited • Spatial Dimensions of Geography' by Department of Geography, Utkal University . Bhubneshwar • Yadav. O (2005), ' Tools and Techniques of Geomorphic Study' published by Shree Publisher & Distributer New Delhi
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Differentiate** between spatial and non-spatial statistical data and **apply** statistical measures to both types. 2. **Understand** graph theory and assess network efficiency using topological measurements. 3. **Calculate and interpret** socio-demographic indices, including the Index of Dissimilarity, Index of Isolation, and Sopher Index of Disparity. 4. **Calculate and interpret** bifurcation ratio and drainage density for watershed analysis.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-401**
Title of the Course : **Geography of Coast**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course:	Nil	
Course Objectives:	The Course provides the students, the coastal geomorphic conditions, coastal processes and the landforms created by waves, tides and currents. In addition, the features of erosion, transportation and deposition made by the tides and waves are highlighted. The uniqueness of coastal areas existing as the transition zones between the land and the seas will also be understood. Students should aim to develop strategies for effective coastal resource conservation and resilient coastal communities.	
		No. of hours
Contents:	**1. Introduction to Geography of Coast** • Definition, Nature and Scope of Coast and Its Significance. • Approaches to study the Coast. • Classification of Coasts and Shores: Submerged and Emerged coasts, Classification of Coast by Johnson and Shepard. • Coastal Zones and its Division.	**15**
	2. Coastal Processes and Mechanism • Waves- Generation and Types (Waves in Shallow Water and Deep Water, Wave Energy) Waves Induced Currents. • Tides- Origin, Significance and Types of Tides (Neap and Spring Tides). • Theories Of Origin of Tides (Equilibrium Theory, Progressive Wave Theory and Stationary Wave Theory).	**15**
	3. Coastal Landforms • Coastal Erosion and resultant landforms: Origin, Classification and Distribution (Cliffs, Wave-Cut Platforms, Terraces, Caves, Arches and Stacks). • Depositional landforms: Origin, Classification and Distribution (Sandy and Muddy Shores- Beaches and Beach Ridges, Barriers Spit and Bar: Mudflats and Marshes (Salt and Tidal), Tombolo, Lagoon. • Formation Of Estuaries and Mangrove Swamps, Coastal Sand Dunes, Wetlands and Deltas.	**15**
	4. Coastal Zone Management • Shoreline Changes: Mechanism, Rates and Causes. • Human Activities and Coastal Environment – Deforestation, Agriculture/Aquaculture, Pollution and Coastal Structures, And Their Effect on Coastal Zones. • Coastal Zone Management: Mapping And Monitoring of Coastal Changes, Legal and Institutional Coastal Regulation,	**15**

	Effective Coastal Zone Policies. • Application of Remote Sensing in Coastal Zone studies. • Role of Geographic Information Systems in Coastal Zone studies. • Local Field Visit & Field visit Report: Identifying the different coastal erosional and depositional features.	
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Carriveau, K. *Integrated Coastal and Ocean Management.* Electronic Green Journal, 2000. 2. Coleman, J. M. *Deltas: Processes of Deposition & Models for Exploration.* Continuing Education Publication Company, 1976. 3. Davis, R. J. *Coastal Sedimentary Environments.* Springer Science & Business Media, 1985. 4. Huggett, R. J. *Fundamentals of Geomorphology.* Routledge, 2011. 5. King, C. *Beaches and Coasts.* Edward Arnold, 1972. 6. King, C. A. *Introduction to Marine Geology and Geomorphology.* Edward Arnold, 1975. 7. Martin, K. *Applications in Coastal Zone Research Management.* U.N. Institute for Training and Research, 1993. 8. Pramod T Hanamgond, D. M. *Dynamics of the Karwar Coast, India, with special reference to the study of Tectonics and Coastal Evolution using Remote Sensing Data.* ResearchGate, May 2007. 9. Robin Davidson-Arnott, B. B. *Introduction to Coastal Processes and Geomorphology.* London, 2009.	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** the meaning, approaches and significance of the Coast. 2. **Analyse** the factors that contribute to the Coastal Processes and Mechanism. 3. **Assess** the different erosional and depositional landforms formed by different coastal agents. 4. **Evaluate** the effectiveness of different coastal management strategies in preventing coastal erosion.	

Name of the Programme : **B.A. Geography**
Course Code : **GOG-402**
Title of the Course : **Watershed Development in Geography**
Number of Credits : **3+1=4**
Effective from AY : **2026-27**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course aims to equip students with a comprehensive understanding of watersheds. Students will explore the physical processes influencing watersheds. The curriculum emphasizes integrated watershed management, community participation, and the analysis of policies governing watershed development. Through assessments, including examinations and practical projects, students will apply theoretical knowledge to real-world scenarios, fostering a holistic grasp of watershed geography.	
		No. of hours
Contents:	**1. Introduction to Watershed Management** • Definition and characteristics of watersheds • Delineation of watershed boundaries • Components of watershed • Importance of watershed in geography • Regional variations in watersheds • Influence of topography on watershed dynamics • Integration of climate and hydrological factors in watershed development	**15**
	2. Physical processes in watersheds • Geomorphological Characteristics (Linear, Aerial and Relief) Aspects, • Groundwater recharge and discharge • River channel and their dynamics • Runoff characteristics • Soil erosion and sedimentation • Deforestation and its consequences on watershed • Agricultural practices and their influence on watershed	**15**
	3. Watershed management strategies and policies 10. Need of watershed development and management • Multidisciplinary approaches to watershed development • National and international policies related to watershed management • Community participation, role of government agencies and NGO's in watershed development • Limitations of watershed development	**15**
	Practical in Watershed Development **1. Drainage Network Analysis** • Delineation of Watershed/Drainage Basin using	**30**

	Toposheet • Morphometric analysis of watershed: Linear aspects- Stream ordering (Strahler's method), Mean Stream Length, Stream length ratio, Bifurcation ratio Areal aspects- Drainage density, Stream frequency, Elongation ratio, circularity ratio, Form factor, Drainage texture, Length of overland flow, Constant channel maintenance Relief aspects- Relief ratio, Dissection index, Ruggedness index, Stream gradient, Hypsometric Integral **2. Preparation of Maps using GIS Software based on DEM data** • Drainage network map • Drainage density map • Contour map	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Briske, D. D., & Breshears, D. D. (Eds.). (2009). Rangeland systems: Processes, management, and challenges. Springer. 2. Brown, A. E., Zhang, L., & McMahon, T. A. (2005). Spatial representation of hydrologic model performance criteria: Part 1. Evaluation of model outcomes. Journal of Hydrology, 308(1-4), 196-221. 3. Carpenter, S. R., & Stanley, E. H. (Eds.). (2011). State of the world's freshwater ecosystems: Physical, chemical, and biological changes. Island Press. 4. Chaubey, I., & Hossain, F. (Eds.). (2017). Hydrological and water quality modeling: Rivers, lakes, and wetlands. John Wiley & Sons. 5. Dunne, T., & Leopold, L. B. (1978). Water in environmental planning. W. H. Freeman. 6. Federal Interagency Stream Restoration Working Group. (1998). Stream corridor restoration: Principles, processes, and practices. US Government Printing Office. 7. Gray, J. R., & Gulliver, J. S. (1983). Watershed models. Water Resources Publications.	

8. Gupta, R. K., & Deshpande, R. D. "Integrated watershed management in India: An overview." *Irrigation and Drainage,* vol. 53, no. 1, 2004, pp. 23-35.
9. Jha, M. K., & Woldemeskel, F. M. (Eds.). (2011). Hydrology and water resources of Africa. Springer.
10. Kalra, Y. P., & Chakraborty, D. (Eds.). (2011). Soil, water, and nutrient management in aquaculture. CRC Press.
11. Leopold, L. B., Wolman, M. G., & Miller, J. P. (1964). Fluvial processes in geomorphology. W. H. Freeman.
12. McCool, D. K., Brown, L. C., & Roark, B. A. (Eds.). *Applied Watershed Modeling.* CRC Press, 2008.
13. McCuen, R. H. (2005). Hydrologic analysis and design. Pearson Prentice Hall.
14. Mendoza, G. F., & Pohll, G. M. (Eds.). (2008). Integrated assessment of water resources and global change: A North-South analysis. Springer.
15. Merz, B., & Blöschl, G. (2003). A regional analysis of event runoff coefficients with respect to climate and catchment characteristics in Austria. Water Resources Research, 39(9), 1218.
16. Montgomery, D. R., & Buffington, J. M. "Channel processes, classification, and response." *Advances in Hillslope Processes,* vol. 2, 1997, pp. 83-138, John Wiley & Sons.
17. National Research Council. (2008). Urban stormwater management in the United States. National Academies Press.
18. Novotny, V., & Olem, H. (1994). Water quality: Prevention, identification, and management of diffuse pollution. Van Nostrand Reinhold.
19. Pitt, R., & Maestre, A. (2005). Stormwater effects handbook: A toolbox for watershed managers, scientists, and engineers. CRC Press.
20. Rinaldi, M., Casagli, N., & Dapporto, S. (1998). Stability of riverbanks formed in partially saturated soils. Water Resources Research, 34(6), 1603-1611.
21. Shaw, D. *Integrated Watershed Management: Principles and Practice.* John Wiley & Sons, 2007.
22. Sharma, U., & Tiwari, K. N. *Watershed Management: A Holistic Approach.* New India Publishing, 2006.
23. Singh, V. P. (1995). Computer models of watershed hydrology. Water Resources Publications.
24. Strahler, A. N. "Quantitative analysis of watershed geomorphology." *Transactions of the American Geophysical Union,* vol. 38, no. 6, 1957, pp. 913-920.
25. Trimble, S. W. (1994). Feedbacks of erosion, sedimentation, and nutrient cycling in two North Carolina estuaries. Ecological Applications, 4(4), 699-711.
26. Ward, A. D., & Trimble, S. W. (2004). Environmental hydrology. CRC Press.

Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Analyse** the physical processes involved in watershed development 2. **Examine** the role of community, government and NGO in watershed management 3. **Evaluate** policies and strategies of watershed management different regions and countries. 4. Utilize GIS software to **Create** a detailed map illustrating the drainage network within a watershed.

Instructions

1. Every candidate shall complete the laboratory course prescribed by the University entering all the experiment exercises in the laboratory journal, which shall be produced at the time of Practical Examination along with a Certificate signed both by the Course Teacher and the Head of the Department of Geography of the concerned college to the effect that he/she has completed the prescribed course in a satisfactory manner.
2. The total workload for this course is 30 hours, which corresponds to 1 credit. Each lab session is scheduled for a duration of 2 hours and cannot be divided into two 1-hour sessions.
3. There are a total of 15 laboratory sessions scheduled, with a total duration of 30 hours.
4. Each batch will comprise of 20 students.
5. The practical examination will be of 2 hours duration and will carry 25 marks.
6. The assessment for the practical examination also includes a total of 2.5 marks for the journal and 2.5 marks for the Viva Voce examination.
7. The practical examination is scheduled to be conducted at the end of the semester in either in the Geography Laboratory or a designated location exclusively assigned for the purpose.
8. In the event of University Examination, the University shall appoint the Internal Examiner (Course Teacher) and External Examiner (Geography faculty from any other College).
9. In case of a College Examination, Principal of the respective College shall appoint both the Internal Examiner (Course Teacher) and External Examiner (any other faculty of the Department).

Name of the Programme : **B.A. Geography**
Course Code : **GOG-403**
Title of the Course : **Research Methodology in Geography**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course:	Nil	
Course Objectives:	1. This course provides a broad introduction to research methodology in geography, focusing on the principles and practices essential for designing and conducting geographical research. 2. Students will explore various research methods, data collection techniques, and analytical approaches applicable to geographic inquiries. 3. The course emphasizes critical thinking, ethical considerations, and the practical application of research skills in the field of geography.	
		No. of hours
Contents:	**1. Introduction to Research Methodology:** • Introduction to the research process in geography • Understanding the role of research in advancing geographical knowledge • Principles of formulating research questions and hypotheses • Types of research designs in geographical studies • Ethical principles in geographical research • Ethical challenges in data collection and analysis	**15**
	2. Data Collection Techniques in Geography: • Surveys, experiments, and statistical analysis in geography • Application of GIS and remote sensing in quantitative research • Case studies, interviews, and participant observation • Content analysis and narrative analysis in qualitative research • Integration of quantitative and qualitative approaches • Case studies of successful mixed-methods research in geography	**15**
	3. Data Analysis and Interpretation: • Quantitative Data Analysis • Statistical techniques and software applications (Theoretical) • Spatial analysis and interpretation of quantitative data • Thematic analysis, and interpretation • Visualization techniques and mapping in geographical research	**15**
	4. Online Research tools and platforms and their applications:	**15**

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	• EndNote • BibTeX • Mendeley Data • ZoteroBib • Survey using Epicollect and KOBO Toolbox	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/Reading:	1. Kumar, Ranjit. *Research Methodology: A Step-by-Step Guide for Beginners*. Sage Publications, 2014. 2. Kothari, C.R. *Research Methodology: Methods and Techniques*. New Age International, 2004. 3. Chawla, Deepak. *Research Methodology: Concepts and Cases*. Vikas Publishing House, 2018. 4. Hennink, Monique M. *Research Methodology: A Step-by-Step Handbook for Beginners*. Sage Publications, 2019. 5. Singh, S.S. *Business Research Methods*. Pearson Education India, 2006. 6. Panneerselvam, R. *Research Methodology: From Philosophy of Science to Research Design*. PHI Learning Private Limited, 2014. 7. Goode, William J., and Paul K. Hatt. *Methods in Social Research*. Tata McGraw-Hill Education, 2012.	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Evaluate** the impact of research on addressing geographical challenges and enhancing understanding of spatial patterns. 2. **Design** and conduct case studies to investigate real-world geographical phenomena. 3. **Create** effective visualizations, including charts, graphs, and maps, to represent geographical data. 4. **Design** and deploy surveys using Epicollect, demonstrating an understanding of its user interface and functionality.	

Name of the Programme : **B.A. Geography**
Course Code : **GOG - 411**
Title of the Course : **Contemporary Issues in Geography**
Number of Credits : **4**
Effective from AY : **2026-27**

Pre-requisites for the Course	Nil	
Course Objectives:	• Develop an understanding of the global issues and their geographical dimensions. • Examine the contemporary environmental challenges and its impact. • Analyse the trends in human population and its impact on urbanization and migration. • Comprehend geopolitical issues and regional conflicts.	
		No. of hours
Content:	**Global Environmental Challenges** Climate change, greenhouse gases, global warming: Causes and consequences Biodiversity loss and its conservation: Threats to biodiversity, conservation efforts and initiatives Water scarcity and its management: Global water crises, GLOF – Glacial Lake Outburst Floods, water management strategies.	**15**
	Human Population, Urbanization & Migration • Trends in global urbanization Challenges and opportunities in megacities • Migration and Displacement Causes and consequences of migration Refugee crises and displaced populations Policies and responses to migration issues	**15**
	Globalization and its Impacts Economic, cultural, and social impacts of globalization, Globalization and Indian Economy Inequality and uneven development Regional disparities in economic development	**15**
	Geopolitical Issues and Regional Conflicts Geopolitics and International relations: Territorial disputes and conflicts, Role of geography in shaping geopolitical strategies Pandemics and Health Geography: Impact of pandemics on societies and economies, Global health challenges and responses.	**15**
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking.	

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	8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/Readings:	1. James M. Rubenstein, "Contemporary Human Geography" 2. Peter Dicken"Global Shift: Mapping the Changing Contours of the World Economy" 3. Savindra Singh, Introduction to Geomorphology 4. Suranjan Das, Environmental Geography: Contemporary Issues and Techniques in Geography 5. (edited) Ranjan Basu, Sukla Bhaduri 6. Edward J. Tarbuck, Frederick K. Lutgens, Dennis Tasa, The Atmosphere-Introduction to Meteorology
Course Outcomes:	By the end of this course, student will be able to: 1. **Develop** an understanding of the global issues and their geographical dimensions. 2. **Examine** the contemporary environmental challenges and its impact. 3. **Analyse** the trends in human population and its impact on urbanization and migration. 4. **Comprehend** geopolitical issues and regional conflicts.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-412**
Title of the Course : **Applied Geography**
Number of Credits : **04**
Effective from AY : **2026-27**

Prerequisites for the course:	Nil	
Objectives:	This course delves into the meaning, nature, and scope of Applied Geography, focusing on its application to contemporary global and local challenges. Participants will explore the role of Applied Geography in addressing issues related to physical geography variations, environmental management, human resources, spatial inequality, and sustainable development. The course adopts a multifaceted approach, incorporating lectures, discussions, case studies, fieldwork, and innovative teaching strategies to provide a comprehensive understanding of the subject.	
		No. of hours
Contents:	Meaning, nature and scope of Applied Geography; Contents of Applied Geography; Definition and Characteristics of Global cities; Contemporary world's urbanization with special reference to India.	**15**
	Issues related to variation in Physical Geography; Variation in land quality affecting agricultural productivity; Environment management of Deforested and Urban areas, Importance of applied Geography.	**15**
	Environmental Degradation; Environmental Disaster and Environment Management; Issues related to Human Resources; Carrying capacity of earth; Principal, Method and Applications of Land and Terrain Evaluation.	**15**
	Spatial inequality: Causes and Consequences; Environment and Sustainable development with special focus on Man-Environment relationship, Landslides with special reference to Uttara Khand, Himachal Pradesh and Jammu and Kashmir, Physical and Spatial characteristics of river floods.	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	

References/Readings:	1. Cooke, R. U. and Doornkamp, J. C., Geomorphology in Environmental Management: A New Introduction, Oxford University Press, New York, 2nd Edition. 2. Crozier, R. A., and M. G. L. Slaymaker. *Landslides: Processes, Prediction, and Land Use*. American Geophysical Union. 3. de Blij, H. J., Peter O. Muller, and Jan Nijman. *Geography: Realms, Regions, and Concepts*. Wiley. 4. Goudie, Andrew S. *The Human Impact on the Natural Environment: Past, Present, and Future*. Wiley-Blackwell. 5. Hails, John R., Applied Geomorphology. 6. Kanbur, Ravi, and Anthony J. Venables. *Spatial Inequality and Development*. Oxford University Press. 7. Morgan, R.P.C. Soil erosion and conservation. 8. McKnight, Tom L., and Darrel Hess. *Physical Geography: A Landscape Appreciation*. Pearson. 9. Pacione, Michael. *Applied Geography: Principles and Practice*. Routledge. 10. Sinha, B. N., Verma, R. S. & Paul, D. K., Landslides in Darjeeling district (W.B.) and Adjacent Areas, Bul. G.S.I. B (36)1-45. 11. Singh, Savindra, Aapda Prabandhan, Pravalika Publication, Allahabad.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Analyze** case studies to understand the practical applications of Applied Geography concepts in global and Indian urban contexts. 2. **Evaluate** the impact of physical geography on human activities and the environment. 3. **Assess** the impacts of environmental disasters on ecosystems, communities, and infrastructure. 4. **Explore** strategies for community engagement and resilience in the face of spatial inequality and environmental challenges.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-404**
Title of the Course : **Livelihood and Natural Resource Management**
Number of Credits : **4**
Effective from AY : **2026-27**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course provides a comprehensive exploration of the dynamic relationship between livelihoods and Natural Resource Management (NRM). Students will delve into key concepts and frameworks surrounding livelihoods, analyzing the interplay of ecological, socio-cultural, and economic dimensions. The course covers indigenous communities, traditional livelihoods, and the impact of natural resource crises on local populations.	
		No. of hours
Content:	**1. Introduction to Livelihoods and NRM** • Concepts and Scope of Livelihoods • Livelihood Framework Analysis • Capitals Involved in Livelihoods • Indigenous Communities and Traditional Livelihoods • Forms of Natural Resources and Dependencies • Impact of Natural Resource Crisis on Livelihoods **2. Threats to Traditional Livelihoods:** • Globalization, Urbanization, Privatization, and Migration • Climate Change Impacts, Mitigation, and Adaptation Strategies	**15**
	1. Non-Timber Forest Products (NTFP) • Types, Classification, and Distribution of NTFP • NTFP as a Survival Strategy • Policies and Acts Supporting NTFP Activities • Importance of Sustainable Resource Management • Case Studies on NTFP-based Livelihoods **2. People's Participation in Forestry** • Joint Forest Management (JFM) in India: Background and Focus • Policy Perspectives and Implementation Methods • Ecological, Social, and Economic Dimensions of JFM • Livelihood Generation Scope under JFM • Case Study on JFM	**15**
	1. Linking Rural Development with Livelihoods • Rural Development Approaches for Livelihood Support • Analysis of NRM Matrix **2. Rural Development Programmes and Schemes** • MNREGA and Components of NRM • SGSY, DRDP, WFP, Integrated Rural Development Programme	**15**

	• Rural Livelihood Programmes and Projects **3. NRM Programmes and Schemes** • National Afforestation Programme (FDA), DPIP • Man and Biosphere Programme, Bamboo Mission • Medicinal Plant Conservation and Cultivation Projects (NMPB) • Biofuel Mission, Rural Livestock Development Programmes • Horticulture and Agriculture Development Programmes	
	1. Case Studies on NRM-based Livelihood Development • Community-Based Coastal Fishery Management – A Case from Sri Lanka • Bamboo-Based Enterprise Development - Case Study of Bamboo Mission • Wet Rice Cultivation – A Traditional Practice amongst Apatani Tribe of Arunachal Pradesh • Biofuels Plantation for Rural Development • Livestock Management – CAPLI Programme- Small Ruminants Rearing • Ecotourism Initiative for Community Development – Kerala State Forest Dept. • Alpine Medicinal Plant Trade and Himalayan Mountain Livelihood Strategies	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. T.C. Sharma (2017), Economic Geography of INDIA, Rawat publication Jaipur 2. Husain Majid (2008), Geography of India McGraw Hills education pvt. Limited 3. Saxena H.M. (2013) Economic Geography, Rawat Publications, Jaipur 4. Tirtha Ranjit, Krishnan Gopal (1996), Geography of India Rawat Publications, Jaipur 5. Khullar D. R. (2008), India: A comprehensive Geography, Kalyani Publishers New Delhi	
Course Outcomes:	By the end of this course, students will be able to: 1. **Demonstrate** a comprehensive understanding of livelihood frameworks	

	and their components. 2. **Examine** the significance of sustainable resource management, particularly in the context of Non-Timber Forest Products (NTFP). And evaluate the policies and acts supporting NTFP activities and their impact on local communities. 3. **Evaluate** the scope of livelihood generation and its impact on local communities under JFM. 4. **Apply** insights gained to propose strategies for sustainable livelihoods and natural resource management in different contexts.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-405**
Title of the Course : **Geography of Social Well-being**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course	Nil	
Course Objectives:	This course delves into the spatial dimensions of social well-being, exploring the intricate relationships between geographic factors and the quality of life of individuals and communities. Through an interdisciplinary lens, the course examines how geographic contexts influence social well-being, encompassing aspects such as health, education, economic opportunities, and environmental sustainability.	
		No. of hours
Contents:	**1. Welfare Geography** • Welfare Geography and Social Well Being: • Welfare themes in human geography, • Well-being and Level of Living • Social differentiation, Discrimination, Deprivation (absolute and relative deprivation), Poverty (patterns of rural and urban poverty) and exclusion	**15**
	2. Indicators of Social Well-being • Economic vs Social Indicators of Well-being, Social Indicators Movement, Establishing criteria of Social Well-being and Terrestrial Well-being, • Changing Social Priorities, Social Reporting and Planning, Terrestrial Social Indicators, • Exclusion of Indicators of Well-Being.	**15**
	3. Education and Well-being • Concept of human resource development • Education and human resource development, • Education and enlarging choices, empowerment and well-being • Education and literacy in developing countries, Social and spatial disparity in literacy attainment in India • Female literacy in India, regional variations • Social access to education • Education, occupational changes, employment and unemployment in India • Education and social change	**15**
	4. Health and Well-being • Health and social wellbeing; health care systems (public and private) in India; • Disparity in healthcare provision in India. • Disease, disease prevalence and disease ecologies in India	**15**

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	• Environment and health with special reference to large urban areas of India • Occupational health and associated risks • Poverty and health in India	
Pedagogy	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Akhtar, R. and Izhar, N. (2010), Global Medical Geography (ed.), New Delhi: Rawat Publications 2. Butola, B.S. (2004). "Spatial Distribution of Crimes against Women in India: A Study in Crime Geography", The Deccan Geographer, Vol. 42, No.2, pp.25-34. 3. Elling, R.H. (1981). "The Capitalist World-System and International Health", International Journal of Health Services, Vol 11, No. 1, pp.21-51. 4. Dreze, J. (2016). Social Policy (Readings on the Economy, Polity and Society), New Delhi: Orient BlackSwan, 5. Hasan, Z. & Hasan, M. (2013). India: Social Development Report (ed.), Council for Social Development, New Delhi: Oxford University Press. 6. Kundu, A. Mohanan, P.C. & Varghese, K. (2013). "Spatial and Social Inequalities in Human Development: India in the Global Context", United Nations Development Programme (UNDP), New Delhi. 7. Samaddar, R. & Begum, A.A. (2014). "New Fault Line in Conflict? Women's Emergence as the Subject of Peace in the North-East", Economic and Political Weekly, Vol. XLIX, No. 43 & 44, pp. 74-83. 8. Smith, D. (1971). The Geography of Social Well-Being in the United States: An Introduction to Territorial Social Indicators, New Delhi: McGraw Hill Book Company 9. Sujatha, V. & Srivastava, R. (2007). Learning from the Poor: Findings from Participatory Poverty Assessments in India, Manila: Asian Development Bank 10. Tilak, J.B. (2013). Higher Education in India: In Search of Equality, Quality and Quantity (Readings on the Economy, Polity and Society), New Delhi: Orient BlackSwan,	
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** theoretical concepts to practical scenarios in the	

	identification and use of social well-being indicators. 2. **Analyze** the role of education in shaping employment patterns and addressing unemployment challenges. 3. **Develop** critical thinking skills to evaluate the strengths and weaknesses of healthcare systems and policies. 4. **Assess** the impact of environment on health

Name of the Programme : **B.A. Geography**
Course Code : **GOG-406**
Title of the Course : **Geography of Rural Settlement**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course	Nil	
Course Objectives:	Geography of Rural Settlement is the course that provides the concept of rural Geography in a detailed manner. This course aims to develop students' thinking ability over rural Geography with the spatial structure of human settlement and the awareness of various schemes for a development of rural people.	
		No. of hours
Contents:	**1. Introduction to Geography of Rural Settlement:** • Definition, nature and scope of rural settlement. • Development of Geography of rural settlement. • Branches of settlement Geography. • Characteristic of settlement Geography. • Approaches to study rural settlement. • Classification of rural settlement. • Functions of rural settlement. • Evolution of rural settlements in India. • Factors affecting rural settlement. • Importance of studying rural settlement.	**15**
	2. Spatial Organization and Distribution of Rural Settlement: • Role of sites, size, shape and distribution of settlement. • Hierarchy of rural settlement. • Types of rural settlement (hemleted, linear, compact, semi-compact and dispersed settlements). • Spacing of rural settlements (nucleated and dispersed). • Social segregation of rural settlements. • Rural urban divide • Census categories of rural settlements.	**15**
	3. Morphology of Rural Settlement: • Rural house types in India (with reference to coastal, arid, semi-arid, plain and mountainous regions). • Rural settlements of Goa. Its shape, size and pattern of Settlement. (Coastal, Plateau and Western Ghat). • Issues related to rural settlements in India. • Case study of any one village of Goa with reference to impact of urbanization on house types, pattern and growth of rural settlements.	**15**
	4. Growth of Rural Settlement: • Changing face of rural India with reference to schemes of development (RKVY, PMGSY, SJSY, MNREGA, Jan Dhan	**15**

	Yojana). • Panchayati Raj System. • Rural development policies and programmes in India. • Need for planning. • Status and Future of rural Geography in India.	
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Clout, Hugh. *Contemporary Rural Geographies*. Routledge, Milton Park, Abingdon, Oxon OX144RN, 2007. 2. Cloke, Paul. *An Introduction to Rural Settlement Planning*. Routledge, MiltonPark, Abingdon, Oxon OX14 4SB, UK, 2013. 3. Ghosh, Sumita. *Introduction to Settlement Geography*. Orient longman, 1998. 4. Harriss, Jhon. *Rural Development: Theories of Peasant Economy and Agrarian Change*. Rawat Publication, 2017. 5. Mandal, R. B. *Introduction to Rural Settlement*. Concept Publishing Company, New Delhi, 2001. 6. Krishnamurthy, J. *Rural Development: Problems and Prospects*. Rawat Publications, 2000. 7. Ramachandran, H., Guimaraes, J.P.C. *Integrated Rural Development in Asia: Learning from Recent Experience*. Concept Publishing, 1991. 8. Singh, K., Shishodia, A. *Rural Development: Principles, Policies, and Management*. 4th ed, Sage, 2016. 9. Singh, R.Y. *Geography of Settlements*. Rawat publications, Jaipur, 1998. 10. Thomas, Chris. *Rural Geography*. Routledge, London, 2001. 11. Wanmali, S. *Rural Infrastructure, the Settlement System and Development of the Regional Economy in Southern India*. International Food Policy Research Institute, 1992. 12. Woods, Michael. *Rural Geography: Processes, Responses and Experiences in Rural Restructuring*. SAGE Publications Ltd, University of Wales, Aberystwyth, 2005. 13. Woods, M., Holloway, Lewis., & Panelli, Ruth. *Key Concepts in Rural Geography*. Sage Publication, London, 2012. 14. Yugandhar, B.N., Mukherjee, N. (Eds). *Studies in Village India: Issues in Rural Development*. Concept Publishing, 1991.	

Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** rural settlement and its characteristic, function and development. 2. **Apply** knowledge to identify patterns of rural settlements of India and Goa. 3. **Analyse** evolution of rural settlement from ancient time and their process of settling in India. 4. **Evaluate** morphology of rural settlement with the help of case studies.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-407**
Title of the Course : **Geography of Urban Settlement**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course	Nil	
Course Objectives:	Geography of Urban Settlement is the course that provides the concept, models, theories and application of urban Geography in a detailed manner. This course aims to develop students' thinking ability over urban Geography with the spatial structure of human settlement and the awareness of various issues of urbanization.	
	1.	**No. of Hours**
Contents:	**2. Introduction to Geography of Urban Settlement:** • Definition, nature, scope and concept of urban Geography. • Importance of studying Urban Geography. • Different approaches and recent trends of urban Geography. • Origin of urban places in ancient, medieval, modern and post-modern periods. • Aspect of urban places: location, site and situation of urban places. • Classification of towns, cities and its size and spacing. • Rural-urban fringe, sub-urbanization and urban sprawl. • Patterns of urbanization in developed and developing countries. • Factors affecting urban growth.	**15**
	3. Theories of Urban Land use: • Hydraulic theory. • Rank size rule. • Central place theory. • Law of primate city model. • Bid rent curve. • Central business district model: Concentric zone model, sector model and multiple nuclei model.	**15**
	4. Metropolitan Cities in India and its Issues: • Trends and pattern of urbanization: Case study of metropolitan cities of India. (Mumbai, Delhi and Kolkata). • Issues of urbanization with special reference to housing, slums, civic amenities (water and transport), pollution, urban heat and garbage management.	**15**
	5. Urban planning in Future: • Climate change and urbanization. • The garden city concept. • Concept of master plan. • Green urbanization.	**15**

	• Smart city mission. • Urban planning and sustainable development of Cities.	
Pedagogy:	1. Lectures for theoretical foundations. 5. Group discussions and seminars for collaborative learning. 6. Presentations and case studies for real-world application. 7. Assignments and blended learning for interactive engagement. 8. Gamification and problem-solving approaches for practical skill development. 9. Experiential learning through fieldwork and outdoor activities. 10. Discussion-based teaching for critical thinking. 11. Brainstorming sessions for idea generation. 12. Flipped classroom pedagogy for active participation. 13. Art Integrated Learning for creative expression. 14. Cutting-edge and cooperative learning strategies for a holistic learning experience.	
References/ Readings:	1. Baghla, S. *Urban Geography*. Book Enclave, Jaipur, 2018. 2. Carter, H. *The Study of Urban Geography*. 4th ed, Arnold, 1995. 3. Dhawan, B. *Urban Geography*. 1st Edition, Ishwar Books, New Delhi, 2019. 4. Giuliano, G., Hanson, S. (Eds). *The Geography of Urban Transportation*. 4th edition, Guilford Press, 2017. 5. Gottdiener, M., Budd, M., Lehtovuori, P. *Key Concepts in Urban Studies*. 2nd edition, Sage Publication, 2016. 6. Jonas, A.E.G., McCann, E., Thomas, M. *Urban Geography: A Critical Introduction*. Wiley-Blackwell, 2015. 7. Kaplan, D., Holloway, S. *Urban Geography*. 3rd ed, Wiley, 2014. 8. Knox, P.L., McCarthy, L.M. *Urbanization: An Introduction to Urban Geography*. 3rd edition, Pearson, 2011. 9. Latham, A., McCormack, D., McNamara, K. McNeill, D. *Key Concepts in Urban Geography*. Sage, 2009. 10. LeGates, R.T., Stout, F. (Eds). *The City Reader*. 6th ed, Routledge, 2015. 11. Levy, J.M. *Contemporary Urban Planning*. 11th ed, Routledge, 2016. 12. Macionis, J.J., Parrillo, V.N. *Cities and Urban Life*. 7th ed, Pearson, 2016. 13. Mandal, R.B. *Urban Geography: A Text Book*. 1st edition, Concept Publishing Company, 2000. 14. Mandal, R.B. *Urban Geography: A Text Book*. Concept Publishing Company, 2008. 15. Potter, R.B., Lloyd-Evans, S. *The City in the Developing World*. Routledge, 2014. 16. Pacione, M. *Urban Geography: A Global Perspective*. Routledge, 2009. 17. Saxena, Hitesh. *Urban Geography*. Srishti Book Distributors, New-Delhi, 2012. 18. Singh, R.B. (Ed.) *Urban development, challenges, risks and resilience in Asian megacities: Advances in Geographical and Environmental Studies*. Springer, 2015. 19. Singh, S. *Concepts in Urbanization*. 1st Edition, ABD Publishers, 2014. 20. Singh, S., Jitender, S. *Urban Geography*. 1st Edition, Pearson India	

	Education Service Pvt. Ltd., 2021. 21. Thomas, Chris. *Rural Geography*. Routledge, London, 2001. 22. Verma, L.N. *Urban Geography*. 2nd Edition, Rawat Publication, 2008.
Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** and appreciate the concepts of Urban Geography 2. **Identify** various plans of developing cities in terms of sustainable goals. 3. **Examine** the contemporary issues faced by urban people. 4. **Evaluate** morphology of urban settlement with the help of case studies.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-413**
Title of the Course : **Geography of Transport Network and Flow Analysis**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course	Nil	
Course Objectives:	This course provides a comprehensive exploration of Transport Geography, encompassing the historical development of transportation systems, key concepts shaping the field, and an in-depth analysis of transport's role in spatial interaction, urban settings, regional planning, and the specific context of the Indian transport landscape.	
		No. of hours
Contents:	**1. Introduction:** • Definition and scope of Transport Geography • Historical development of transportation systems • Key concepts: accessibility, connectivity, mobility • Sustainable transportation • Intelligent transportation systems • The future of transportation technology	**15**
	2. Transport for spatial interaction: • Spatial interaction and time-space convergence, enlarging the catchment area of markets, dynamic relationship between transport and spatial readjustment, role of transport as a lead sector • Problem of accessibility: Transport network, network shape and location, regional variations in its density, methods of measurement, transport and spatial processes, traffic flow and regional interaction.	**15**
	3. Urban Transport: Profile of urban transport facilities, traffic in towns, transport services and urban land use pattern, role of intermediary transport modes, modal split.	**15**
	4. Regional Transport Planning: The framework of regional transport planning traffic generation, methods of forecasting, zonal interchange of traffic, mode and route assignment methods; Indian Transport: Transport development during colonial and plan periods, transport and regional structure of Indian Economy, metropolitan transport	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement. 5. Gamification and problem-solving approaches for practical skill	

	development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Ashton, W.D., 1966. The Theory of Traffic Flow, Methuen , London 2. Berry, B.J.L et a., 1966. Essays on Commodity Flow and Spatial Structure of Indian Economy, Department of Geography, Chicago. 3. Berry, B.L.J. and Marble, D.F. (eds.) 1979). Spatial Analysis: A Reader in Statistical Geography, Prentice Hall. 4. Brooks, P.W., 1994. The Development of Air Transport Hurst, M.E. (ed.) Transportation geography: Comments and Reading, Mc Graw Hill, 256-273 5. Cooley, C.H. 1994. The Theory of Transportation, in Hurst, M.E. (ed.) Transportation geography: Comments and Reading, Mc Graw Hill, 15-29. 6. Fleming, D.K. and Hayuth, Y. 1994. Spatial Characteristics of Transportation Hubs: Centrality and Intermediacy, Journal of Transport Geography, 2 (1), 3-18. 7. Gautam, P.S. 1992. Transport Geography of India: A Study of Chambal Division, M.P., Mittal Publications, New Delhi 8. Haggett, P. 1965. Locational Analysis in Human Geography, London. 9. Haggett, P. and Chorley, R.J. 1969. Networks Analysis in Geography, London. 10. Hoyle, B. S., and Richard Knowles. *Modern Transport Geography*, John Wiley, 1999. 11. Kansky, K.J., 1963. Structure of Transportation Networks: Relationships between Network Geometry and Regional Characteristics, University of Chicago, Department of Geography, Research Paper, Chicago, 84. 12. Nagar, V.D. and Gautam S. 1964. Principles and Problems of Indian Transport, Kailash Pustak Sadan, Gwalior. 13. Owen, W. 1968. Distance and Development: Transport and Communications in India, Washington. 14. Raza, M. and Aggarwal, Y. 1986. Transport Geography of India, Concept Publishing Company, New Delhi. 15. Rodrigue, Jean-Paul. *Geography of Transport Systems*, 5th ed., Taylor & Francis, May 2020. 16. White, H. P. and Senior, M.L. 1983. Transportation Geography, Longman Inc. New York. 17. Saxena, H. M. *Transport Geography*, 2nd Revised ed., Indian Books and Periodicals, 2022. 18. Vaidya, B. C. *Geography of Transport Development in India*, 1st ed., Concept Publishing Company Pvt. Ltd, 2003.

Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. **Understand** key concepts such as accessibility, connectivity, and mobility in the context of transport geography. 2. **Analyze** the concept of spatial interaction and its importance in transport geography. 3. **Assess** the relationship between transport services and urban land use patterns. 4. **Evaluate and apply** various methods of forecasting in regional transport planning.

Name of the Programme : **B.A. Geography**
Course Code : **GOG-414**
Title of the Course : **Geography of Agriculture**
Number of Credits : **04**
Effective from AY : **2026-27**

Pre-requisites for the Course:	Nil	
Course Objectives:	This course explores the spatial dynamics of agriculture, examining the geographical factors that influence farming practices, crop distribution, and the global food system. Students will gain insights into the relationship between geography, agriculture, and sustainable development with reference to India.	
		No. of hours
Contents:	**1. Introduction** • Nature, scope and significance of Geography of Agriculture • Historical perspectives on the evolution of agriculture. • Determinants of agricultural patterns: physical, technological and cultural • Impact of urban expansion on agricultural land. • Principles of sustainable agriculture • Role of international trade in agriculture	**15**
	2. Concepts and Approaches in Geography of Agriculture • Concepts of land capability survey, land use and cropping pattern. • Agricultural Concepts: intensity of cropping, Degree of commercialization, Cropping diversification and concentration, Crop combination, Contract framing and agri-business. • Agro-ecological approaches to farming. • Approaches in agricultural regionalization: Von Thunen Model of agricultural land use, • Agro-climatic zonation: Concept and Indian experience.	**15**
	3. Agricultural Systems • Bases of identification of agricultural systems by Whitllesey and agricultural typology by Kostrowiki. • Measurements of agricultural efficiency and productivity.	**15**
	4. Issues and Challenges in Indian Agriculture • Food production and security in India. • Neo-liberalization and Indian agriculture. • Green revolution: Its impacts and consequences in India. • Agriculture and climate change: impacts and adaptation.	**15**
Pedagogy:	1. Lectures for theoretical foundations. 2. Group discussions and seminars for collaborative learning. 3. Presentations and case studies for real-world application. 4. Assignments and blended learning for interactive engagement.	

Issued on: 24/01/2025

	5. Gamification and problem-solving approaches for practical skill development. 6. Experiential learning through fieldwork and outdoor activities. 7. Discussion-based teaching for critical thinking. 8. Brainstorming sessions for idea generation. 9. Flipped classroom pedagogy for active participation. 10. Art Integrated Learning for creative expression. 11. Cutting-edge and cooperative learning strategies for a holistic learning experience.
References/ Readings:	1. Bayliss Smith, T.P. : The Ecology of Agricultural Systems. Cambridge University Press, London, 1987 2. Chauhan, Dharmender Singh. Agricultural geography. Jaipur, India: Ritu Publications, 2010. 3. Berry, B.J.L. et. al. : The Geography of Economic Systems. Prentice Hall, New York, 1976 4. Bowler, Ian R. Agriculture under the Common Agricultural Policy: A geography. Manchester [Greater Manchester]: Manchester University Press, 1985. 5. Brown, L.R. : The Changing World Food Prospects – The Nineties and Beyond. World Watch Institute, Washington D.C., 1990 6. Briggs, David J. Agriculture and environment: The physical geography of temperate agricultural systems. London: Longman, 1985. 7. Briggs, David. Agriculture and environment: The physical geography of temperate agricultural systems. Harlow: Longman Scientific & Technical, 1989. 8. Cantor L.M. : A World Geography of Irrigation. Oliver and Bord, London, 1967. 9. Desai G.N. and Vaidhanathan A : Strategic Issues in Future Growth of Fertilizer Use in India. McMillan Pub., New Delhi, 1998. 10. Gregor, H.P. : Geography of Agriculture. Prentice Hall, New York, 1970 11. Grigg D.B. : The Agricultural Systems of the World. Cambridge University Press, New York, 1974. 12. Grigg David, An Introduction to Agricultural Geography Second edition, Routledge London and New York, 1989 13. Majid Husain, Agriculture Geography, Rawat Publications 2020 14. Morgan W.B. and Norton, R.J.C. : Agricultural Geography. Mathuen, London, 1971. 15. Nelson, Paul : Greenhouse Operation and Management. Reston Publishing, Virginia, 1985. 16. Newbury, Paul A. R. A geography of agriculture. Harlow: Longman Scientific & Technical, 1986. 17. Sarkar, A.K. : Practical Geography : A Systematic Approach. Oriental Longman, Calcutta, 1997. 18. Sauer, C.O. : Agricultural Origins and Disparities. M.I.T. Press, Mass, U.S.A., 1969. 19. Singh, J and Dhillon, S.S. : Agricultural Geography. Tata McGraw Hill Pub., New Delhi, 1988.

Course Outcomes:	At the end of the successful completion of this course, students will be able to: 1. Explain the fundamental concepts and principles underlying the geography of agriculture. 2. Apply the Von Thunen Model to real-world examples and assess its relevance in contemporary agricultural landscapes. 3. Analyze case studies to apply the principles of Whittlesey's and Kostrowicki's classifications in real-world agricultural scenarios. 4. Examine the adaptation strategies and sustainable practices to mitigate the adverse effects of climate change on agriculture.