**Govt.P.G.College,Safidon(Jind)-126112**

**Session:2024-2025 (Even Semester)**

**Lesson Plan**

**Name of Teacher:…Sh.Balvinder Subject:...** **Remote Sensing and GIS Class…III (VIth)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Introduction to Aerial Photographs :Their Advantages and Typs. Elements of Aerial Photo Interpretation. Basic of Remote Sensing. Electromagnetic Spectrum,Sensors and Plateform,Resolution. |
| **2** | **February** | Development of Remote Sensing Technology. Types of Imageries and its use in Natural Resources Management India. |
| **3** | **March** |  Measure of Center Tendency(Mean) Mean. Median. Mode and Measure of Dispersion. |
| **4** | **April** | Range,Quartite Deviation Mean Devition. Standerd Deviation. Co-Efficient of Variation. Introduction to Geographical Information System. |
| **5** | **May** | Definition,Purpose,Advantages and Software and Hardware Requirements. Application of GIS in Various fields of Geography. |
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**Name of Teacher:…Mrs.Nisha Subject:...Basic of Economic Geography Class…IInd (IVth)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Nature and scope of economic geography and its relationship with economics. |
| **2** | **February** | Classification of economic activities and their impact on environment. Natural resources: types, bases of classification |
| **3** | **March** | Utilization and conservation of natural resources World distribution of food crops (rice and wheat), commercial crops (cotton and sugarcane) and plantation crops (tea and coffee). |
| **4** | **April** | World distribution and production of coal, petroleum and natural gas, iron ore and bauxite. |
| **5** | **May** | World distribution and production of iron and steel industry, textile industry, sugar industry and automobile industry.International trade and transport and major oceanic trade routes. |

**Name of Teacher:….Sh.Sandeep Subject:...Fundamentals of Physical Geography Class…B.A.I (IInd Sem)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** |  Interior of the earth, geological time scale, rocks and their types. |
| **2** | **February** | Theory of isostasy, continental drift and plate tectonic.Degradational processes: weathering, mass wasting and resultant landforms. |
| **3** | **March** | Landforms generated by following geomorphic agents: river, under-ground water, wind and glacier. Weather and climate: Atmosphere-composition and structure |
| **4** | **April** | Atmospheric temperature, pressure and moisture: measurement and distribution.Surface configuration of ocean floors: surface relief of the Pacific, Atlantic  |
| **5** | **May** | Indian Ocean.Circulation of oceanic waters: current of the Pacific, Atlantic and Indian Ocean. |

**Name of Teacher:……. Subject:...URBAN GEOGRAPHY Class…M.Sc (IVth)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Urban Geography: definition, nature, scope, different approaches and urban settlement concept (town, cities, and metropolitan)Origin and growth of urban places, factors and stages of urban growth and change. |
| **2** | **February** | Urbanization: definition, concept, trends and pattern of urbanization in the world with special reference of India. Aspects of Urban space: urban morphology: concentric zone model, sector model, multiple nuclei model and Social area analysis, |
| **3** | **March** | City Region Relations- Sphere of influence or umland and Urban Sprawl.Rural Urban Fringe: structural characteristics and its development.Functional classification of towns: by C. D Harris and H.J Nelson and Ashok Mitra. |
| **4** | **April** | Central place theory of Christaller andLosch. Rank Size rule and Law of Primate City concept.Contemporary Urban issues and challenges: Slums, Crime, renewal, Environmental Pollution. |
| **5** | **May** | Urban development Policies and programs in India.The concept of sustainable development of cities. |

**Name of Teacher:……. Subject:.. Hydrology And Oceanography Class…M.Sc (IVth)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Hydrology: Definition, nature, scope and development of Hydrology.Hydrological cycle. Estimation of global water budget.Impact of anthropogenic activities on hydrological cycle. Rainfall:Measurement of rainfall, determination of average rainfall (Arithmetic mean, Isohytel method and Theisson polygon), |
| **2** | **February** | world distribution of rainfall.Groundwater hydrology: Darcy's law and elementary groundwater flow equation geological formations of aquifer, types of aquifer and properties. |
| **3** | **March** | Sources and measurement of stream flow, hydrograph and its components, analysis of hydrograph, factors affecting the hydrograph shape, methods of hydrograph separation.Oceanography: introduction, nature, scope and relation with other sciences. |
| **4** | **April** | Corals-origin, types and conditions for development, theories of the origin of coral reefs (Subsidence and standstill).Tides: types, causes and theories explaining the origin of tides.Oceanic temperature: distribution and causes of variation; |
| **5** | **May** | Oceanic movement: Waves, Stream and Currents; Currents of Atlantic,Global warming and sea level changes. |

**Name of Teacher:……. Subject:…. Class…M.Sc (IVth)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | GIS: Definition and scope; Development of GIS, Computer requirements of GIS. Functions of GIS.Components of GIS: Hardware, Software, User, Organizational context and Methods and Procedures.Graphic user interface of Are GIS and Q-GIS. |
| **2** | **February** | Geographic Data: Spatial and Non-Spatial, their sources. Spatial Data Structure: Raster andVector;Non spatial data: file system and DBMS. Definition and need of coordinate projection system: types,characteristics and relevance of projection system. Understanding spheroid/ellipsoids, understanding datum. |
| **3** | **March** | Data input in GIS: scanning and digitization of maps and images, Errors in GIS, editing and cleaning Spatial Analysis in GIS: Overlay, Neighborhood and Proximity;  |
| **4** | **April** | Integration of raster and vector data. Queries in GIS: Spatial and Non-spatial queries.Understanding GPS; GPS satellite constellation; space segment-control segment and user segment; |
| **5** | **May** | GPS signals and codes; Errors in GPS observations; Introduction to DGPS; GPR. GPS system: NAVSTAR, GALILIO and IRNSS.Applications of GPS |

**Name of Teacher:……. Subject:…. Geography of Haryana Class…M.Sc (IVth)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Geographical location and agro-ecological regions of Haryana |
| **2** | **February** | Geology Structure and Relief, Drainage System, Climatic characteristics of Haryana. |
| **3** | **March** | Agriculture in Haryana: Major Irrigation Projects,Spatial Distribution and Development of Horticulture and Farming. |
| **4** | **April** | Green Revolution and its Socio-Economic and Ecological ImplicationsIndustrial development in Haryana: Location and distribution of agro-based industries Automobile Industries, cotton and IT industries. |
| **5** | **May** | Transportation: major transportation networks impacts of transportation development on regional development. Demographic Characteristics of Haryana: Population Growth, Density, Age and Sex Composition, Literacy. |

**Name of Teacher:……. Subject:….** Agricultural geography **Class…M.Sc (IInd)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Nature, scope and significance of agricultural geography; origin and I dispersal of agriculture; determinants of agricultural patterns: physical, technological and cultural factors.  |
| **2** | **February** | Approaches to the study of agricultural geography regional and systematic approach, ecological and commodity approach. Concepts of land capability classification, recent techniques in agriculture 11 Kagroforestry, contract farming, agri-business) |
| **3** | **March** | Concepts of intensity of cropping, degree of commercialization, cropping diversification and concentration, crop combination; Von Thunen model of agricultural land use.Agricultural regionalization: |
| **4** | **April** | concept and criteria; Whittlesey's Agricultural 15 systems, Agro-climatic region: concept and Indian experiences |
| **5** | **May** | Govt. of India Policies and Institutions (Role of ICAR, KVKs, Commodity Boards (Tea Board/Coffee Board/Marketing Organisations agriculture seed 15 bank.), Impact of Climate Change: Agriculture and Water. |

**Name of Teacher:……. Subject:….** Research methodology in geography **Class…M.Sc (IInd)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Research: Meaning. Definition Types and Methods Fundamental. theoretical research, Empirical, Diagnostic and action-oriented research. Concepts in  |
| **2** | **February** | Research: Identification and selection of Research problem, review of literature. Hypothesis Types, Characteristics and functions, Formulation and testing of Hypothesis |
| **3** | **March** | Type of data and their source: Data acquisition Techniques Interview, Questionnaire, Schedule; interpretation of data. Need and importance of pilot study, Selection of case studies. |
| **4** | **April** | Qualitative methods Foundations of Qualitative Methods, Interviews, Focus groups, Ethnography, Participant Observation, Case Study, Discourse analysis-Participatory research Introduction to abstract, synopsis and research paper. |
| **5** | **May** | Research reports: Writing preliminaries, main body of research. references and bibliography (APA, MLA), Glossary, Appendix, Plagiarism. Meaning and concept of workshop, seminar, conference, symposium. |

**Name of Teacher:…… Subject:…. Fundamentals of Remote Sensing Class…M.Sc (IInd)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Photogrammetry: History and Development. Aerial Photographs: Types, Geometry, Methods of Determining Scale. Ground Coverage and Overlapping; Stereoscopes and Stereoscopic Vision, Element of aerial photo interpretation. |
| **2** | **February** | Remote Sensing: Meaning and Basic Principles/Concepts. Electromagnetic Radiations (EMR): Electromagnetic Spectrum; Interaction of EMR with Atmosphere and Earth's Surface Features.. |
| **3** | **March** | Basic Principles of Thermal and Microwave Remote Sensing. Remote Sensing Platforms- Types and Characteristics; Satellite Orbits- Near Polar and Geostationary Orbits |
| **4** | **April** | Sensors Types, Specifications and Resolutions (Landsat, LISS and Cartosat). Elements of Image Interpretation; Digital Image Processing: Supervised and Unsupervised Classification. |
| **5** | **May** | Calculation and application of various indices (NDVL, NDWI) Remote Sensing Set up and Programmers in India, Remote Sensing Data Applications. |

**Name of Teacher:…Mr.Nisha Subject:…. G**eographical thought **Class…M.Sc (IInd)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Classification of knowledge, Nature of geography and its place among sciences. Geographic knowledge during ancient (Greek and Roman) and medieval (Arab) periods.  |
| **2** | **February** | Contribution of Ancient Indian scholars in geographical development. Foundation of Modern Geography: contributions of Varenius, Kant, Humboldt and Ritter. Geography as a study of: Physical features, chorology, landscape science.  |
| **3** | **March** | Concepts in Geography: Environmental determinism, Possibilism, Neo- determinism, aerial differentiation. Dualism in geography: Physical vs Human geography, systematic vs regional geography. |
| **4** | **April** | Quantitative Revolution: Emergence of geography as spatial science, Positivist Explanations in Geography: Laws, theories, hypotheses, models. Scientific explanations: routes to scientific explanations (Inductive and Deductive approach), cause and effect analysis. |
| **5** | **May** | Modern approaches in geography: Behavioral and Humanistic Perspectives in Geography, Welfare approach, Radical approach, Structuralism and postmodernism. |

**Name of Teacher:……. Subject:….Analytical physical** geography **Class…M.Sc (IInd)**

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| **Sr.No.** | **Months** | Topic |
| **1** | **January** | Representation of Climatic data: Rainfall deviation, Climograph (Taylor and Foster), Hythergraph, Star/Wind rose diagram, |
| **2** | **February** | Representation of data Time series analysis: moving average of rainfall and temperature data |
| **3** | **March** | . Ergograph Isohytes. Rainfall deviation diagram.Index of Aridity and index of Moisture. Koppen's Climatic classification. Morphometric Analysis: Profile analysis: Transverse; |
| **4** | **April** | Relief aspect of drainage basin: Area-height curve and Hypsometric integral curve. Slope analysis average slope(Wentworth's)and relative relief (G.H Smith's method). Representation and Interpretation of Physical features and Cultural features from topographical maps. |
| **5** | **May** | Serial, superimposed, composite and projected), longitudinal profile. Drainage network analysis: drainage frequency and density. Linear aspect: relationship between stream order and number and bifurcation ratio. |