**Lesson Plan**

**M.Sc. Geography\_1stSemester\_ Climatology (2022-23 odd semesters)**

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| Sr. No | Topics | No. of Days | Completed up to | Activities |
|  | **UNIT-I** |
| 1 | 1. Definition of weather and climate; Climatology and Meteorology. | 15 | 18 Aug | Class Test 1 |
| 2 | 2. Origin, composition, and structure of atmosphere. |
| 3 | 3. Solar radiation, heat budget and temperature distribution |
|  | **UNIT-II** |
| 4 | 4. Atmospheric pressure and its distribution pattern. | 25 | 7 Sept | Assignment 1 |
| 5 | 5. General circulation and planetary winds, Walker circulation- ENSO and La Nina, origin of monsoons and jet streams. | Student’s power point presentation |
| 6 | 6. Atmospheric Moisture : humidity, evaporation, condensation |
|  | **UNIT-III** |
| 7 | 7. Precipitation: Dynamics and types of precipitation. | 20 | 1 Oct | Student’s power point presentation |
| 8 | 8. Stability and instability of atmosphere, air masses and fronts. | Assignment 2 |
| 9 | 9. Weather systems: Extra tropical and tropical cyclones. |
|  | **UNIT-IV** |
| 10 | 10. Climatic classification: Bases of climatic classification by Koeppen, Trewartha and Thornthwaite. | 20 | 29 Oct | Class Test 2 |
| 11 | 11. Climatic change- Evidences and explanations. |
| 12 | 12. Global warming and its impacts. |
|  | Revision | 10 | Up to exams |  |

Department of Geography

Lesson plan- 2022-23 (Odd Semester)

**Geography of India, GEOG-102- Theory**

Class- M.Sc.I, Semester-1

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| Month/Year | Topic to be covered | Co-Curricular Activities |
| Sept, 2022 | Major terrain elements of India and their role in shaping physical landscapes of IndiaDrainage systems of India and their functional significanceRegional and seasonal variations in climate climate regions of India | Internal Assessment, class test, Topical presentationsQuizGeographical terms and concepts demonstrations etc.Map reading etc |
| October, 2022 | Soil and vegetation types of India- their distribution, characteristics and conservationAgriculture: Characteristics of Indian agriculture, agricultural development in India since independence, problems of Indian agricultureIrrigation development in India, Environmental impacts of irrigation development projects with special reference to Bhakra Nangal and Indira Gandhi Canal |
| November, 2022 | Production and distribution of following minerals and power resourcesMinerals: Iron ore, mica, manganese, bauxite.Power Resources: coal, petroleum, and hydropower.Minerals and power resources- The status of their use and need for conservation.Industrial Production and distribution--iron and steel-cotton textile-automobile industry |
| December, 2022 | Major industrial regions of India and their characteristics.Patterns of domestic and international trade.Major exports and imports of India’s tradeBalance of payment.Revision |

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Lesson plan- 2022-23 (Odd Semester)

**Economic Geography, GEOG-103- Theory**

Class- M. Sc. I, Semester-1

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| Month/Year | Topic to be covered | Co-curricular Activities |
| Sept, 2022 | Definition, nature, scope and approaches of economic geographyRelationship of economic geography with economics and other branches of social sciencesWorld Economies: bases of classification, patterns and characteristics of developed and developing economies of the world. | Internal Assessment, class test, Topical presentationsQuizGeographical terms and concepts demonstrations etc. |
| October, 2022 | World production and distribution of energy resources: coal and petroleumWorld production and distribution of mineral resources: iron-ore and bauxite |
| November, 2022 | Network structure economic activities impact of transport on economic activitiesEdward Ullman’s spatial interaction modelBasic concepts in location problems, location models of Weber, Christaller and LoschConcept of economic growth and development,  |
| December, 2022 | globalization and pattern of economic developmentRecent trends in pattern of international tradeEmergence of a new global economy – transnational integration and its spatial outcomesMajor regional trade blocks of the world, free trade initiatives (GATT, UNCTAD, WTO).Revision |

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Lesson plan- 2022-23 (Odd Semester)

**Statistical Methods in Geography, GEOG-104- Theory**

Class- M. Sc. I, Semester-1

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| Month/Year | Topics to be covered | Co-curricular Activities |
| Sept, 2022 | Descriptive Statistics : Histograms and Graphs, Measures of Central Tendency- mean, median, modePartitioned values: Quartiles and decilesComparing the mean, median and modeMeasures of Dispersion: Absolute measures: Range, Quartile Deviation, Mean Deviation, Standard Deviation. Relative measure of dispersion: coefficient of variation. | Internal Assessment, class test, Topical presentationsGeographical terms and concepts demonstrations etc. |
| October, 2022 | Normal curve as a probability distribution: Its characteristics and area under curveMeasure of inequality- -Location quotient -Lorenz curve.Sampling: Theory of sampling, Methods of sampling, Sampling distribution Chance errors in sampling. |
| November, 2022 | Bivariate Analysis: Scatter diagram, correlation analysis,Spearman’s rank correlation and Karl Pearson’s correlation coefficient. Test of significance.Simple Linear Regression Model: properties of least square estimate. Coefficient of determination. |
| December, 2022 | Residuals and their mappingBasics of multivariate analysis: -Correlation matrix, -partial and multiple correlationsRevision |

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Lesson plan- 2022-23 (Odd Semester)

**Cartographic Methods in Geography (Practical), GEOG-105**

Class- M. Sc. I, Semester-1

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| Month/Year | Topic to be covered | Co-curricular Activities |
| Sept, 2022 | Climate data representation by diagrams and maps  - Line and bar graph- Poly graph- Rainfall deviation diagram- Climograph (Taylor and Foster’s)- Hythergraph- Isopleth- Wind rose diagram | Internal Assessment, class test, Topical presentationsQuizGeographical terms and concepts demonstrations etc. |
| October, 2022 | Diagrams : Types and properties of diagrams representing socio-economic dataOne dimensional diagram - Bar diagram : Simple bar, multiple bar, comparative barTwo dimensional diagram- pie diagram, proportional circle, rectangle, square |
| November, 2022 | Three dimensional diagram- Sphere, cube, curbsi Distribution maps- Dot method- Choropleth – monovariate and bivariate |
| December, 2022 | Miscellaneous diagrams and graphs- Trend graph- Age and Sex pyramid- Flow diagram, cartogram and accessibility maps.Revision |

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