P. G. AND RESEARCH DEPARTMENT OF GEOGRAPHY

M.Sc., G E O G R A P H Y
SYLLABUS

Under CBCS system

2018 - 2019 Onwards

GOVERNMENT ARTS COLLEGE (AUTONOMOUS)
(Accredited by NAAC with 'A' Grade)

COIMBATORE – 641018

M.Sc., GEOGRAPHY Degree Course

PG - SCHEME OF EXAMINATIONS: CBCS PATTERN

(For the students admitted during the academic year 2018 - 2019 and onwards)

Sub Code	Title of the Paper	Hrs (wk)	Internal (CA) Marks	External Marks	Total Marks	Ext– Min.	Total Pass Mark	Credits
Semester – I								
18MAG11C	**Core: 1** Applied Geomorphology	6	25	75	100	38	50	5
18MAG12C	**Core: 2** Applied Climatology	6	25	75	100	38	50	5
18MAG13C	**Core: 3** Advanced Cartography	6	25	75	100	38	50	5
18MAG14E	**Elective -1**: Environmental Geography	6	25	75	100	38	50	3
	Core: Practical – I: Techniques of Terrain Mapping	3	-					
	Core: Practical – II: Mapping of Qualitative and Quantitative Data	3	-					
Semester – II								
18MAG21C	**Core: 4** Urban Geography	5	25	75	100	38	50	4
18MAG22C	**Core: 5** Concepts and Trends in Geography	6	25	75	100	38	50	5
18MAG23C	**Core: 6** Statistical Methods in Geography	6	25	75	100	38	50	4
18MAG24E	**Elective -2:** Remote Sensing and its applications in Geography	5	25	75	100	38	50	3
18MAG25P	**Core:** Practical – I: Techniques of Terrain Mapping	4	40	60	100	30	50	3
18MAG26P	**Core:** Practical – II: Mapping of Qualitative and Quantitative Data	4	40	60	100	30	50	3

Sub Code	Title of the Paper	Hrs (wk)	Internal (CA) Marks	External Marks	Total Marks	Ext– Min.	Total Pass Mark	Credits
Semester – III								
18MAG31C	**Core: 7** Geography of Population	6	25	75	100	38	50	4
18MAG32C	**Core: 8** Agricultural Geography	6	25	75	100	38	50	5
18MAG33C	**Core: 9** Research Methodology in Geography	6	25	75	100	38	50	4
18MAG34E	**Elective – 3:** GIS and Its Applications	4	25	75	100	38	50	3
	Core : Practical –III: GNSS and GIS Mapping Survey	4	-					
	Core : Practical –IV: Map and Image Interpretation	4	-					
Semester – IV								
18MAG41C	**Core: 10** Regional Planning and Development	5	25	75	100	38	50	5
18MAG42C	**Core: 11** Geography of India	5	25	75	100	38	50	5
18MAG43C	**Core: 12** Transport and Industrial Geography	5	25	75	100	38	50	4
18MAG44E	**Elective – 4:** GPS and its Applications	4	25	75	100	38	50	4
18MAG45P	**Core : Practical –III:** GNSS and GIS Mapping Survey	4	40	60	100	30	50	3
18MAG46P	**Core : Practical –IV:** Map and Image Interpretation	4	40	60	100	30	50	3
18MAG47V	**Project Viva Voce**	3	20	80	100	40	50	10
	Total Credits							**90**

Core - Includes core theory, practical and electives

Includes 25/40 continuous Internal Assessment Marks for Theory and Practical papers respectively

Project evaluation done by both Internal and External examiner for 80 Marks

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	APPLIED GEOMORPHOLOGY	I	18MAG11C

Objectives:

- To understand about the Landforms Formation and Land features
- To understand about the Concepts and Applications of Geomorphological studies.

UNIT - I: Geomorphology: Geomorphology: Nature and Scope - Fundamental concepts – Uniformitarianism - Geological Time Scale.

UNIT - II: Internal Processes: Isostatic Balance - Continental Drift - Sea floor Spreading - Plate Tectonics: Margins, Seismicity and Volcanism.

UNIT - III: External Processes: Weathering and Mass movement - Erosional, Transportational and Depositional Land Forms: Fluvial, Glacial, Aeolian, Coastal and Karst Topography.

UNIT - IV: Conceptual Development in Geomorphology: Cycle of Erosion - W.M. Davis and Penck - Slope Development Theories: W.M. Davis, Penck and L.C. King - Morphogenetic Regions.

UNIT - V: Applied Geomorphology: Meaning - Applications in Mineral Exploration – Hydrology - Engineering – Forestry – Water Resource Management – Land use planning.

Reference Books:

1. Bloom, Arthur L. (1998), Geomorphology, Pearson Education Pvt.Ltd. Singapore.
2. Das Gupta, A and Kapoor, A.N., (2001). Principles of Physical Geography, S.C. Chand & Company Ltd, New Delhi.
3. Dayal, P., (1995). Text Book of Geomorphology, Shukla Book Depot, Patna.
4. Savindra Singh, (2002). Geomorphology, Prayag Pustak Bhawan, Allahabad.
5. Sharma, V.K., (1986). Earth Surface Process and forms, Tata McGraw Hill Publishing Company Ltd, New Delhi.
6. Strahler, A.N. and Strahler A.H., (1992). Modern Physical Geography, John and Wiley Sons, New York.
7. Thornbury, W.D., (1984). Principles of Geomorphology, John Wiley and Sons, New York.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	APPLIED CLIMATOLOGY	I	18MAG12C

Objectives:

- To understand about Climatic Elements and its Applications
- To familiarize about Pressure, Wind, Clouds, Climatic classification and Weather forecasting

UNIT - I: Applied Climatology**:** Meaning, Nature and Scope - Relation with Meteorology - Composition and Structure of the Atmosphere - Temperature: Horizontal and Vertical distribution - Heat Balance.

UNIT - II: Atmospheric Pressure: Distribution - General Circulation of the Atmosphere – Planetary winds – Seasonal winds - Local winds and Jet streams - Atmospheric Humidity - Evaporation – Condensation and Precipitation.

UNIT - III: Atmospheric Disturbances: Cyclones and Anti-cyclones – Tornadoes - Ocean and Atmospheric interaction: El-Nino, Southern Oscillation (ENSO) and La-Nina impacts.

UNIT - IV: Monsoon: Mechanism – Significance - Impact and Recent theories– Climatic Classification: Koppen and Thornthwaite.

UNIT - V: Applied Climatology**:** Agro-climatology - Human Comfort Zone – Urban climate - Micro climate – Weather Stations: Role and functions of Indian Meteorological Department (IMD) - Meteorological Satellites: Weather forecasting and other Applications.

Reference books:

1. Critch field, H.J., (1987). General Climatology, Prentice Hall of India Pvt. Ltd, New Delhi.
2. Lal, D.S., (1990). Climatology, Chatianya Publishing House, Allahabad.
3. Richmond W. Longley (1970). Elements of Meteorology, John Willey & sons inc, New York.
4. Savindra Singh, (2002). Physical Geography, Prayag Pustak Bhawan, Allahabad.
5. Siddhartha, K., (2005). Atmosphere, Weather and Climate, Kisalaya Publications Pvt. Ltd., New Delhi.
6. Tewartha, G.T., (1980). Introduction to Climate, Tata McGraw Hill, New York.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	ADVANCED CARTOGRAPHY	I	18MAG13C

Objectives:

- To Understand about Historical Development of Cartography, Map Projection and Generalization
- To Familiarize about Re-production methods and Recent trends

UNIT - I: The Earth: shape, size, areas and great circle – Co-ordinate system: Cartesian and spherical, latitude and longitude, directions and distance - Concept of base map - Map projections: Merits and demerits of cylindrical, Conical and Zenithal - Projection suitable for maps of India.

UNIT - II: Basics of map making: Determination of scale – Simplification - Symbolization: Kind of symbols: point, line, area, volume, size, location and direction - Theory of visual perception.

UNIT - III: Mapping of Qualitative and Quantitative data -– Maps: Types - Thematic, Chorocromatic - Choroschematic - Class intervals - Choropleth and isopleths.

UNIT - IV: Map design and Layout: Map compilation and Generalization - Compilation process - Design planning: Colour Theory and Models - Generalization - Lettering map Topography: lettering style, size, and types - Nature of typography.

UNIT - V: Advanced Cartography: Aerial photos and satellite data - Generating cartographic data - Computer cartography - Cartography and GIS – Automated cartography: Digital cartography – Map reproduction.

Reference Books:

1. Erwin Raiz, (1948), General Cartography, McGraw Hill Company., New York.
2. Keates, J. S., (1982), Understanding Maps, Longman, London and New York.
3. Lawrence, G.R.P., (1979), Cartographic Methods, Methuen, London.
4. Misra, R.P. and Ramesh, A., (2002), Fundamentals of Cartography, Concept Publication Company, New Delhi.
5. Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
6. Robinson, A.H., (1984), Elements of Cartography, John Wiley, London.
7. Sethu Rakkayi, S., (2014), Puvippadaviyal oor arimugam, Sree Meenakshi Offsets, Madurai.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	ENVIRONMENTAL GEOGRAPHY	I	18MAG14E

Objectives:

- To understand the relationship between Environment and Geography
- To familiarize about Ecosystem and Eco-crisis

UNIT – I: Environmental Geography: Nature and Scope – Role of Geography – Man and Environment relationship – Changing nature of the Concepts: Determinism – Possibilism – Neo-Determinism – Ecology – Biogeochemical cycle - Sedimentary and Gaseous cycles.

UNIT – II: Ecosystem: Concepts - Structure – Classification – Functions – Biomes and types – Food Chain - Food Web – Food Pyramid – Nutrient Cycle – Natural disruptions of the Ecosystem – Human interferences: Population growth and its impact - Biodiversity

UNIT – III: Man's modification on Biosphere – Agriculture – Green Revolution – HYV, Bio-Fertilizers, Pesticides, Insecticides– Man's impact on land, mining, soils and coastal areas.

UNIT – IV: Human Settlements and Environment - Industrial Environment – Emerging Environmental Degradation and Issues – Environment and Health - Hazards and Disaster: floods, drought and desertification.

UNIT – V: Environmental Management and Planning: Environmental Law and Protection – Environmental Impact Assessment - CPCB – TNPCB – Global Warming - Ozone depletion – International Co-operations: Stockholm Conference - Earth Summit - Kyoto protocol – Agenda 21.

Reference Books:

1. Batel, B. (1980) Management of Environment, Wiby Eastern Ltd., New Delhi.
2. Centre for Science & Environment: The State of India Environment, A Citizen's Report 1982, 1985, New Delhi.
3. Odum .E.P. (1971), Fundamental of Ecology, W.B.Sunders Co,
4. Paul R. Ehrlich, Anne H. Ehrlich, and John P. Holdren (1977), Ecoscience: Population, Resources, Environment, Edition3, W. H. Freeman Publishers.
5. Peter Hagett (2001), Geography - A.Modern Synthesis, Prentice Hall, London
6. Philadelphia.
7. Savindra Singh (1991), Environmental Geography, Kalyan Publications, New Delhi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	URBAN GEOGRAPHY	II	18MAG21C

Objectives:

- To understand the Nature and Development of Urban Geography
- To familiarize about Urbanization, Urban morphology, Urban theories and problems

UNIT – I: Urban Geography: Nature, Scope and Development – Origin and spread of cities – City Classification – Basic and non-basic – Functional classification of towns.

UNIT – II: Urbanization: growth and causes – Urbanization in India and World – Regional pattern of Urbanization in India - Urban expansion and conurbation – CBD and its characteristics.

UNIT – III: Urban Morphology: Urban land use and types - Internal Structure of cities - Burgess, Homer Hoyt, Harris and Ullman - Social Area Analysis.

UNIT – IV: Central Place Theory: Christaller and Losch - Primate City - Rank Size Rule - Urban Hierarchy – City Region - Rural-urban fringe - Suburbs - Satellite town – Umland.

UNIT – V: Urban Problems: Residential – Urban Environmental Pollution - Transport - Water Supply – Crime – Urban Slums - Urban Planning: Need – Types - Concepts – Master Plan – Urban Planning in India.

Reference Books:

1. Bala, Raj (1986), Urbanisation in India, Rawat Publishers, Jaipur.
2. Kundu, A (1992), Urban Development and Urban Research in India, Khanna Publication, New Delhi.
3. Majid Hussain (1999), Human Geography, Rawat Publications, Jaipur.
4. Mandal R.B (2009), Urban Geography: A Text Book; Concept Publishing Co., New Delhi.
5. Nath .V (2007), Urbanisation, Urban Development and Metropolitan Cities in India, Concept Publishing Co. New Delhi.
6. Pacione, Michael (2001), Urban Geography - A Global Perspective, Routedge, London.
7. Ramachandran .R (1989), Urbanization and Urban Systems in India, Oxford University Press, Delhi.
8. Ray M Northam (1979), Urban Geography – John Willey and Sons – Australia
9. Siddhartha K, (2013), Cities, Urbanisation and Urban Systems, kisalaya publication Pvt. Ltd New Delhi.
10. Vasant Kumar Bawa (1985), Indian Metropolis, Urbanization Planning and Management, Inter – India Publication, New Delhi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	CONCEPTS AND TRENDS IN GEOGRAPHY	II	18MAG22C

Objectives:

- To understand the Nature, Branches, Approaches and Development of Geographical thought
- To Familiarize about various schools of thought, Traditions, Quantitative Revolution and Recent trends

UNIT - I: Field of Geography: Nature – Branches - Approaches - Development of Geographical Thought - Classical period - Medieval Period: Greeks, Romans and Arabs.

UNIT - II : Modern Schools: German, British, French and Americans - Foundations of Scientific Geography - Founders of Modern Geographical Thought – Alexander Von Humboldt, Carl Ritter, Ratzel, Vidal de la Blache, Jean Brunhes, Mackinder, W. M. Davis and E.C. Semple.

UNIT - III: Four traditions in Geography: Man-Land, Area studies, Spatial and Earth Science – Dualism and Dichotomies: Determinism Vs Possibilism, Physical Vs Human - Paradigms in Geography.

UNIT - IV: Quantitative Revolution: Concept – Hypothesis - Laws, Theories and Models – Description and Explanation - Systems Approach and Analysis – Inductive and Deductive Approaches.

UNIT - V: Recent Trends in Geography: Human Ecology – Welfare Geography - Sustainable Development – Geo-Spatial Technology.

Reference Books:

1. Adhikari .S (1992), Geographical Thought, Chiatanya Publishing House, Allahabad.
2. Aeils Holt Jensen (2009), Geography, History and Concepts: A student's guide, Sage.
3. Dickinson .R .E (1969), The Makers of Modern Geography, Routeldge and Kegal Paul, London.
4. Dikshit .R .D (2006), Geographical Thought – A contextual History of Ideas, Prentice Hall of India.
5. George Henderson ed. (2009), Geographic Thought, A Praxis Perspective, Routledge.
6. Hussain.M (2007), Evolution of Geographical Thought, Rawat Publications, Jaipur.
7. Rana .L (2008), Geographical Thought: A systematic record of Evolution, Concept Publication, New Delhi.
8. Richard Peet (2003), Radical Geography, Rawat Publications, Jaipur.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	STATISTICAL METHODS IN GEOGRAPHY	II	18MAG23C

Objectives:

- To understand the Statistical Techniques, Numerical data in Geography
- To familiarize about Probabilistic Treatment, Parametric Statistics and Regression Analysis

UNIT - I: Statistics: Definition and concepts - Data and its types - Statistical Geography and academic lineage – Statistical techniques in Geography – Model building – Measurement scales in Geography.

UNIT - II: Geographical Data: Data Frequency distribution and curve – Central tendency measures: Mean, Median and Mode – Measures of Dispersion – Variance and Standard Deviation – Measures of Skewness and Kurtosis.

UNIT - III: Probabilistic Treatment: Normal Distribution – Binominal Distribution – Poisson Distribution – Spatial Statistics: Centrographic Analysis: Mean, Median and Modal center – Standard Distance Deviation – Nearest Neighbour Analysis.

UNIT - IV: Parametric Statistics: Sampling and Sampling Plan - Sampling estimates for large and small sized samples - Null hypothesis – Student 'T' test – Analysis of variance – 'F' distribution.

UNIT - V: Non-Parametric Statistics: Chi square test – Correlation: Spearmen Rank correlation and Pearson Product moment correlation - Spatial correlation analysis - Regression analysis: Linear and Multiple regression – Principle Component Analysis - Factor analysis – SPSS Software.

Reference Books:

1. Cole, John P. and Cuchlaine a. M. King (1968): Quantitative Geography, Techniques and Theories in Geography, John Wiley and Sons Ltd., London.
2. Misra R.P & Ramesh A. (2002) - Fundamentals of Cartography, Concept Publication Company, New Delhi.
3. R Hammond and P McCullagh. 1978. Quantitative Techniques in Geography: An Introduction (second edition), Oxford University Press
4. Robinson A.H. (1984) - Elements of Cartography, John Wiley, London.
5. S.P. Gupta, elementary statistical methods- sultan chand & sons, educational publishers, New Delhi.
6. Saroj k. pal, (2010) statistics for Geosceintists-techniques and applications, concept publishing company, New Delhi.
7. Taylor, Peter J. (1977): Quantitative Methods in Geography, An Introduction to Spatial Analysis. Hougton Miffin Company, Boston, USA.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	REMOTE SENSING AND ITS APPLICATIONS IN GEOGRAPHY	II	18MAG24E

Objectives:

- To understand about the basic Concepts, History and Types of Remote Sensing
- To familiarize about Aerial, Satellite remote sensing, image Processing and Applications

UNIT – I: Remote Sensing: Definition - Basic Concepts – History and Development – Types: Active and Passive -Electromagnetic Spectrum – Radiation Principles - Energy interaction with Earth and Atmosphere – Ideal Remote Sensing - Platforms.

UNIT – II: Aerial Remote Sensing: Aerial photographs: Classifications based on Camera, Film and Orientation –Photo scale - Parallax – Stereo model - Flight planning - Marginal information – Interpretation keys - LIDAR – Drone.

UNIT – III: Satellite Remote Sensing: Satellite – Types, Orbits and Sensors – Resolution: types - aspects of LANDSAT, SPOT, IRS, IKONOS, QUIKBIRD and recent satellites – Marginal information and Interpretation – Applications of Microwave and Thermal Remote Sensing.

UNIT – IV: Image processing: Pre-processing: Rectification and Enhancements – Manipulation - Classification methods: Supervised and Unsupervised - Ground truth verification – Accuracy assessment -Vegetation Indices: VI and NDVI, Software: ERDA and ENVIS.

UNIT – V: Applications of Remote Sensing in Geography: Geomorphology, Water Resources, Disaster studies, Forestry, Agriculture, Land use and Land cover and Urban planning.

Reference Books:

1. Chanrda, A.M. and S.K. Ghosh (2006), Remote Sensing and Geographical Information System, Narosa Publishing House, New Delhi.
2. Curran, P.J., (1985), Principles of Remote sensing, English Language Book Society Longmans, London.
3. Joseph, George (2003), Fundamental of Remote Sensing, University's Press (India) Pvt.
4. Kumar, S., (2003), Basics of Remote Sensing and GIS, Laxmi Publications, New Delhi.
5. Lillesand, T.M. and Ralph W. Keifer (2002), Remote Sensing and Image Interpretation, John Wiley & Sons, Inc., New York.
   Ltd., Hyderabad.
6. Panda, B.C., (2005), Remote Sensing: Principles and Applications, Viva Books Pvt. Ltd., New Delhi.
7. Sabins, Jr. (1978), Remote Sensing: Principles and Interpretation, Freeman and Co, Sanfrancisco.
8. Singh Surendra and A.N. Patel (1999), Principles of Remote Sensing, Scientific Publishers (India), Jodhpur.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	TECHNIQUES OF TERRAIN MAPPING	II	18MAG25P

Objectives:

- To understand the Representation of Relief and Slope Analysis
- To practice Familiarize about curves and Drainage analysis

UNIT – I: Representing Relief: Spot Heights and contour drawing – Contour interpolation, Profiles: Simple, Serial, Super-imposed, Projected and Composite profiles - Vertical Exaggeration.

UNIT – II: Slope Analysis: Wentworth – Smith and Robinson methods.

UNIT – III: Drawing of Altimetric frequency curve – Hypsographic – Clinographic curve.

UNIT – IV: Drainage Basin Analysis: Drainage Morphometry – Linear – Aerial – Relief - Streams Orders – Bifurcation Ratio – Drainage stream Density and Shape of the Basin – Thalwag.

Reference Books:

1. Gopal singh, (1996), Map Work and Practical Geography, Vikas Publishing House Pvt.Ltd.,
2. Khullar, (1997), Practical Geography, Educational Publishers, New Delhi.
3. Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
4. Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied Pvt. Ltd, Kolkata.
5. Sethu Rakkayi, S., (2014), Puvippadaviyal Oor Arimugam, Sree Meenakshi Offsets, Madurai.
6. Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
7. Zulfequar Ahmad Khan, M. D., (1998), Text Book of Practical Geography, Concept Publishing Company, New Delhi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	MAPPING OF QUALITATIVE AND QUANTITATIVE DATA	II	18MAG26P

Objectives:

- To understand the mapping techniques of qualitative data
- To familiarize about mapping quantitative data, graphs, curves and agricultural data

UNIT – I: Data: Sources and Types –Statistical Sampling: Random Systematic, Stratified and (Point- Line - Area sampling).

UNIT – II: Graphs: Simple, Semi log – Log log - Triangular – Lorenz curve - Distribution maps – Located bar, Circle and Spheres.

UNIT – III: Maps: Isopleths – Choropleth - Dasymetric – Chrochromatic and Chroschematic - Flow map. Crop concentration and Diversification: Ranking of crops: Bhatia – Gibbs. Crop Combination: Weaver, Doi's, Rafiullh.

UNIT – IV: Field study – Field trip / Field excursions for minimum 10 days is mandatory and report to be submitted.

Reference Books:

1. Gopal singh, (1996), Map work and practical geography, Vikas Publishing House Pvt.Ltd.,
2. Khullar, (1997), Practical Geography, Educational Publishers, New Delhi.
3. Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
4. Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied Pvt. Ltd, Kolkata.
5. Sethu Rakkayi, S., (2014), Puvippadaviyal oor arimugam, Sree Meenakshi Offsets, Madurai.
6. Singh, R. L., (2005), Elements of Practical Geography, Kalyani Publishers, New Delhi.
7. Zulfequar Ahmad Khan, M. D., (1998), Text Book of Practical Geography, Concept Publishing Company, New Delhi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	GEOGRAPHY OF POPULATION	III	18MAG31C

Objectives:

- To understand the scope and development of population geography
- To familiarize about theories, composition, dynamics and polices

UNIT – I: Population Geography: Scope and Development – Sources of Population Data: Census, Registers and Sample Survey - Human Resources.

UNIT – II: Population Distribution, Density and Growth – Theoretical issues: Classical and Modern Theories in Population Growth – Malthus, Optimum Theory, Ricardo and Demographic Transition. - World Patterns and their Determinants – India: Population Distribution, Density and Growth Profile.

UNIT – III: Population Composition: Age and Gender - Family and Households - Literacy and Education – Religion and Caste - Rural and Urban - Occupational Structure - Gender Issues - Population Composition of India.

UNIT – IV: Population Dynamics: Measurements of Fertility and Mortality - Migration: Types, Causes and Consequences – National and International Patterns. Ethnic crisis

UNIT – V: Population and Development: Population Polices in developed and less developed countries - Human Development Index (HDI) and its components - India's population polices - Population and Environment - Implications for the future.

Reference Books:

1. A Geography of Population, World patterns, John Wiley & sons. New York.
2. B.N.Ghosh (1985), Fundamentals of population geography, sterling publishing, New Delhi.
3. Beaujeau Garnier .J (1966), Geography of Population, Longman Group, London.
4. Chandha, R.C (1986), A Geography of population, Concepts, patterns, Kalyani publishers, New Delhi.
5. Clerk, I, (1984), Geography of Population, Approaches and Applications, Pergamon Press, Oxford, UK.
6. Kayastha, S.L., (1998), Geography of Population, Rawat, Publications, Jaipur.
7. William F.Hornby and Melvyn Jones, (1990), An Introduction to Population Geography, Cambridge University Press, Cambridge.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	AGRICULTURAL GEOGRAPHY	III	18MAG32C

Objectives:

- To understand the scope, Approaches and Development of Agricultural Geography
- To Familiarize about Determinants, Data sources and Regionalization of Agriculture

UNIT – I: Agricultural Geography: Scope and Content – Approaches – Origin and Development of Agriculture – Major Agricultural types of the World (Whittlessey).

UNIT – II: Determinants of Agriculture: Physical, Socio-economic, Institutional and Technological - Models: Von Thunen's and Jonson's model.

UNIT – III: Agricultural Data Sources and Analysis: Sources – Types of Data – Land use Surveys: USGS, NRSC and Nine fold - Sampling and Land use data - Soil survey Atlas.

UNIT – IV: Agricultural Regionalization: Crop Combination: Weaver, Doi and Rafiullah – Crop Concentration - Crop Diversification – Agricultural Productivity– Degree of Commercialization – Patterns of Crop Rotation.

UNIT – V: Land Capability: Classification – Green Revolution: Salient features and impact on Land use – Need for second Green ,white, and blue Revolution – Crop Calendar - Agricultural Regions of India –Food security – Agricultural policy in India -Recent problems.

Reference Books:

1. David Grigg., (1984), An introduction to Agricultural Geography, Hutchinson, London.
2. Hussian.M., (1996), Systematic Agricultural Geography, Rawat publication, New Delhi.
3. Jasbir Singh and Dhillon S.S.(2004), Agricultural Geography, Tata Mc Graw-Hill Publishing Company Ltd, New Delhi.
4. Mohamad Shafi, (2006), Agricultural Geography, Dorling Kinerlay (India) Pvt. Ltd. New Delhi.
5. Mohamad,(1981), Perspective Agricultural Geography, Vol. Concepts Publishing Company, New Delhi.
6. Morgan, W.B. & Munton R.J,C., (1971), Agricultural Geography, Methuen, London.
7. Negi. B.S., (1998), Agricultural Geography, Kedar Nath Ram Nath, Meerut.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	RESEARCH METHODOLOGY IN GEOGRAPHY	III	18MAG33C

Objectives:

- To understand the significances, Types and methods of Geographical Research
- To familiarize about Research Planning, Design, Data processing and Report writing

UNIT – I: Geographical Research: Objectives – Need - Significance – Types and Methods of Research – Conceptual Models.

UNIT – II: Research Planning: Selection of the Problem – Hypothesis: Types and Testing - Logic in Research: Facts, Themes, Concepts, Theories and their implications.

UNIT – III: Research Design: Need, Importance and Features – Major concepts – Literature Review – Sampling: Types and Techniques – Data Collection: Methods and Techniques.

UNIT – IV: Process of Data: Preparation - Editing – Coding – Tabulation – Classification – Statistical Analysis - Maps and Diagrams.

UNIT – V: Report Writing: Types and Planning - Organization of the Thesis: Preliminaries - Text - Foot notes - References and Bibliography – Appendices - Drafting and Final evaluation – Preparation of Abstract, Research Papers and Publication - Research Proposals – Role of Information Technology – Plagiarism

Reference Books:

1. Basotia G.R. & Sharma K.K. (2002), Research Methodology, Mangal Deep Publications, Jaipur
2. Dey, Ian (1993), Quantitative Data Analysis, Routledge, London
3. Drwajma khan (1998), Quantitative methods in Geographical research, Concept Publications, New Delhi.
4. Harvey, David (1969), Explanation in Geography, Edward Arnold, London.
5. John A. Mathews (1981), Quantitative and statistical approaches to Geography, Pregamon Press, Oxford.
6. Kothari C. R. (1990), Research Methodology: Methods and Techniques, Wishwa Prakasan Pvt. Ltd., New Delhi.
7. Krishnaswamy O. R. (1993), Methodology of Research in Social Sciences, Himalaya Publishing House, Mumbai.
8. Scale, Clive (ed.) (2008), Social Research Methods, Routledge (India Edition), London.
9. Somekh, Bridget and Cathy Lewin (eds.) (2005), Research Methods in the Social Sciences, Vistaar Publications, New Delhi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	GIS AND ITS APPLICATIONS	III	18MAG34E

Objectives:

- To understand the history, development and components of GIS
- To familiarize about data types, editing, overlay and applications of GIS

UNIT – I: GIS: Definition –History and Development - Maps and Spatial Information - Computer Assisted Mapping - Components – Data Types – Geographic and Spherical Coordinate system-Thematic characteristics of Spatial Data - Sources of Spatial Data.

UNIT – II: Spatial and Attribute Data: Spatial entities - Raster and Vector data model and structures - Raster and Vector approach to Digital Terrain Modeling (DTM) – Modeling third and fourth dimensions – RDBMS – Problems - Integrating spatial and attribute data.

UNIT – III: Data Input and Editing: Data Input – Data Editing: Topology- Data analysis: Measurements of Length, Perimeter and Area - Queries – Reclassification - Buffering and Neighbourhood functions.

UNIT – IV: Overlay: Raster and Vector - Problems - Spatial Interpolation – Surface Analysis - Network Analysis - GIS Output: Maps as output - Spatial Multimedia - Delivery Mechanism - Map as Decision Tool.

UNIT – V: Applications: Agriculture, Environment, Forestry, Emergency Services, Health, Regional and Local Planning, Transport and Tourism - Web GIS –Mobile GIS.

Reference Books:

1. Anji Reddy, M., (2004), Geoinformatics for Environmental Management, BS Publications, Hyderabad.
2. Chang, Kang-tsung (2002), Introduction to Geographic Information Systems, Tata McGraw Hills Publishing Company Ltd, New Delhi.
   –Hill Publishing Company Limited, New Delhi.
3. Ian Heywood, 2009), An Introduction to Geographical Information System, Pearson Education Pvt. Ltd., New Delhi.
4. Kang-tsung Chang, (2006), Introduction to Geographic Information systems, Tata McGraw
5. Kumar, S., (2003), Basics of Remote sensing and GIS, Laxmi publications, New Delhi.
6. LO, C.P., Albert K.W.Yeung, (2007), Concepts and Techniques of Geographic Information Systems, Prentice-Hall of India, New Delhi.
7. Peter, A. Burrough Rachael, A. and McDonnell, (1998), Principles of Geographical Information Systems, Oxford University Press Inc., New York.
8. Siddique, M.A. (2006), Introduction to Geographical Information Systems, Sharda Pustak Bhawan, Allahabad.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	REGIONAL PLANNING AND DEVELOPMENT	IV	18MAG41C

Objectives:

- To understand the history, development and components of GIS
- To familiarize about data types, editing, overlay and applications of GIS

UNIT –I: Regional Planning: Meaning, Scope and Content – Planning Regions: Formal and Functional –Types – Approaches to Regional Planning – Delineation of Regions in India: Physical and Economic.

UNIT –II: Planning: Constituents and Objectives –Micro, Meso and Macro Urban and Rural Planning – Planning Process – Criticism of Planning – Role of District, Block and Local Planning.

UNIT –III: Regional Analysis: Concepts, Methods and Techniques – Input-Output Analysis – Theories of Industrial Location, Center Pole and Growth Pole.

UNIT –IV: Regional Imbalances and Inequalities: Pre and Post Independence periods – Ashoka Mitra Study – Process of Urbanization – Regional Planning in Agriculture.

UNIT –V : Development of Backward Areas: Identification, Measures Adopted – Rural Industrial Project – NABARD – NCDBA – CADA – Centre State Resource Transfer – Planning for Tribal Development – Directions of Regional Policy - Recent policies in India.

Reference Books:

1. Bhatt, L.S. (1972), Regional Planning in India, Statistical Publishing Society, Calcutta.
2. Bhatt, L.S. et. al. (ends) (1982) Regional Inequalities in India, Society for the study Regional Disparities, New Delhi.
3. Blunder. J. et. al. (1973), Regional Analysis and Development, Harper & Row, London.
4. Chand, M and V.K. Puri (1985), Regional Planning in India, Allied Pub. Pvt. Ltd. New Delhi.
5. Chandna, R.C. (2000), Regional Planning- A Comprehensive Text, Kalyani Publishers, Ludhiana.
6. Hall Peter, (1974), Urban and Regional Planning, Penguin, London.
7. Kukhinski A.R. ed. (1972), Growth poles and Growth centers in Regional Planning - Mouton, Paris, The Hague.
8. Misra .R.P. (1971), Regional Planning: Concepts Techniques. Politics and case studies. University Mysore, Mysore.
9. Misra .R.P., Sundram, K.V. and V.L.S Prakasa Rao (1974), Regional development in India, Vikas publishing House, New Delhi.
10. Prakasa Rao V.L.S. (1963), Regional planning, Asia publishing House, Kolkatta. Glasson John, (1974) : An Introduction to Regional Planning, Hutchinson, London

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	GEOGRAPHY OF INDIA	IV	18MAG42C

Objectives:

- To understand about location, extent, physical features and climate of India
- To familiarize about India's Agriculture, Mineral, Industries and human Resources

UNIT – I: Physical Setting: Location, Major Physiographic Divisions – Climate: Seasons, Indian Monsoon, Soil Types and Distribution – Drainage Systems and Irrigation types – Multi-purpose projects - Natural Vegetation.

UNIT – II: Agriculture Resources: Food Crops: Rice and Wheat - Cash Crops: Sugarcane and Tobacco - Plantation Crops: Tea, Coffee - Fibre Crops: Cotton and Jute - Green Revolution - Animal Resources: Cattle and Sheep Rearing – White Revolution - Fisheries: Fresh and Marine Water Fishing – Blue Revolution.

UNIT – III: Mineral Resources: Distribution and Production of Iron ore, Bauxite, and Mica - Energy Resources: Distribution and Production of Coal, Petroleum and Atomic Minerals - Non Conventional Energy: Solar, Wind and Tidal -Geothermal.

UNIT – IV: Industries and Transport: Distribution and Production: Iron and steel - Cotton Textiles – Cement - Chemical and Electronic Industries – Industrial Regions of India.-Means of Transport: Roadways – Railways - Airways and Waterways – Communication: Telecommunication - Information Technology Development.

UNIT – V: Human Resources and Trade: Human Resources: Growth, Distribution and Density of Population, Population Problems - Trade: Volume and Composition of India's Foreign Trade – Role of India in SAARC and BRICKS.

References:

1. Gopal Singh, (1970), A Geography of India, Atnaram & sons, New Delhi.
2. Khullar, D. R., (2010), India – A Comprehensive Geography, Kalyani Publishers, New Delhi.
3. Krishnan, M.S. (1982), Geology of India and Burma, CBS Publishers, New Delhi.
4. Majid Hussain (2008), Geography of India, Tata McGraw Hill Publishing company Ltd., New Delhi.
5. Mathur, S.M. (1982), Physical Geology of India, National Book Trust, India, New Delhi.
6. Pal, Saroj K. (2003), Physical Geography of India – A study in Regional Earth Sciences, Orient Longman Pvt. Ltd. Kolkata.
7. Sharma, T.C., (2003), India – An Economic & Commercial Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
8. Singh, R.L., (1977), India - A Regional Geography, NGSI, Varanasi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	TRANSPORT AND INDUSTRIAL GEOGRAPHY	IV	18MAG43C

Objectives:

- To understand about transport and industrial aspects on geographical perspective
- To acquaint the students with scope, content and theoretical frame works related to transport and industrial activities

UNIT – I: Transport Geography: Nature, Scope, Significance and Development – Factors Associated with Development of Transport System: Physical, Social, Economical, Cultural and Institutional.

UNIT – II: Characteristics and relative significance of different modes of Transport: Railways, Roadways, Airways, Waterways and Pipe line - Transport Cost: Accessibility – Connectivity: Inter-regional and Intra Regional – Comparative cost Advantages.

UNIT – III: Transport Policy and Planning – Urban transportation: growth and problem – transport and environmental degradation - Alternative to transport system in mega cities of India - Flow Models – Network Structure – Gravity Model.

UNIT – IV: Industries: Nature, Scope and Development - Classification – Theories and Models: Weber and Losch – Resources based and Footloose Industries.

UNIT – V: Industries and Environmental degradation – Industrial Hazards and Occupational Health – Industrial Policies – Need for Integrated Industrial Development.

Reference Books:

1. Chorley R.J. & Haggett P. (1968): Network analysis, Edword Arnold, London
2. Goh Cheng Leong & Gillian C. Morgan (2000) : Human and Economic Geography,Oxford University Press
3. Sigh K.N. (1990): Transport network in rural development, Institute of rural economic development, Varanasi.
4. Taffe E.J. & Gauther H.L. (1973): Geography of transportation, Prentice Hall.
5. Vaidya B.C.(eds) (1998): Reading in Transport Geography: A Regional perspective, Devika Publications, NewDelhi Taffe E.J. & Gauther H.L. (1973): Geography of transportation,PrenticeHall.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	GPS AND ITS APPILCATIONS	IV	18MAG44E

UNIT – I: GPS: History - Advantages and Limitations – Segments: Control - Space and User - Geo Positioning: Point - Relative - Static – Kinematics - Uses of GPS.

UNIT – II: GPS Systems: NAVSTAR - GLONAAS – GALILEO - Beidou – QZSS - IRNSS - GPS receivers based on: Data type and yield – Realization of channels – Signal structure: Course Acquisition (Code) - Carrier ranging and Navigational message.

UNIT – III: Basic modes of GPS Surveying: DGPS - Data Transfer and Data Processing- Sources of Error - Dilution of Precision (DOP) - Error Correction – Location of GPS receiver -

UNIT – IV: Applications: Precision farming – Fishing – Environment – Forestry - Siting and Routing - Surveying - Navigational applications.

UNIT – V: Applications: Vehicle tracking – Simultaneous GPS - Mobile computing - Military applications – Recreational applications.

Reference Books:

1. Satheesh Gopi (2005), Global Positioning System Principles and Applications, Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. Ganesh, A. and Narayanakumar, R. (2006), GPS Principles and Applications, Satish Serial Publishing House, New Delhi.
3. Hofmann-Wellwnhof B. Lichtenegger, H. and Collins, J. (2007), GPS theory and Practice, Spinger (India) Private Limited, New Delhi.
4. Michael Kennedy (2002),The Global Positioning System and GIS: An Introduction, Taylor and Francis Inc., New York.
5. Leick Alfred (2004), GPS Satellite Surveying, Third Edition, John Wiley & Sons, Inc., Hoboken, New Jersey.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	GNSS AND GIS MAPPING SURVEY	IV	18MAG44P

Objectives:

- To understand about GNSS survey techniques, data collection and Integration with GIS
- To familiarize about digitizing, geo-referencing, editing and interpolation

UNIT –I: GNSS Survey: Principles and Components - Data Collection: Point – Line – Area – Integration with GIS data.

UNIT –II: GIS: Survey: Scanning – Digitization – Geo-reference – Database Creation – Attribute Editing.

UNIT – III: Interpolation – Buffer – Overlay Analysis – Creation of Elevation Models.

UNIT – IV: Field study – Field trip / Field excursions for minimum 1 week is mandatory and report to be submitted.

Reference Books:

1. Anji Reddy, M., (2004), Geoinformatics for Environmental Management, BS Publications, Hyderabad.
2. Curran, P.J., (1985), Principles of Remote sensing, English Language book society Longmans, London.
3. Hammond, R. and McCullagh, P. (1978), Quantitative Techniques in Geography: An a Introduction (second edition), Oxford University Press.
4. Lillesend, T.M. and Kiefer, R.W., (1979), Remote Sensing and Image Interpretation, John Wiley and sons, New York.
5. Monkhouse, F. J. and Wilkinson, H. R. (1976), Maps and Diagrams, Methuen and Co., London.
6. Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata.
7. Sabins, Jr. (1978), Remote Sensing: Principles and Interpretation, Freeman and Co, Sanfrancisco.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	MAP AND IMAGE INTERPRETATION	IV	18MAG46P

Objectives:

- To understand about survey of India Topograhic sheet, US and OS map interpretation
- To familiarize about weather report, aerial photos and satellite imageries

UNIT –I : Toposheets: Appreciation and Interpretation of SOI, US and OS sheets – Comparison of SOI, US and OS – Interpretation of NATMO and District Planning Map.

UNIT –II: Weather Map: Interpretation for Different Seasons – Cross Section and Cyclone Tracking.

UNIT –III: Aerial Photo Interpretation: Stereo-Vision Test – Marginal Information – Interpretation (Physical and Cultural).

UNIT –IV: Satellite Image Interpretation: Marginal Information – Visual Interpretation of Imagery (Physical and Cultural).

Reference Books:

1. Curran, P.J., (1985), Principles of Remote sensing, English Language book society Longmans, London.
2. Lillesend, T.M. and Kiefer, R.W., (1979), Remote Sensing and Image Interpretation, John Wiley and sons, New York.
3. Monkhouse, F.J. and Wilkinson, H.R., (1989), Maps and Diagrams, B.I.Publications, New Delhi.
4. Pijushkanti Saha and Partha Basu, (2010), Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata.
5. Sabins, Jr. (1978), Remote Sensing: Principles and Interpretation, Freeman and Co, Sanfrancisco.
6. Singh, R. L., (2005). Elements of Practical Geography, Kalyani Publishers, New Delhi.

Year	Subject Title	Sem	Sub Code
2018 - 2019 Onwards	Project and viva-voce	IV	18MAG47V

Objectives:

To understand about the various research methods and its applications

To familiarize about data collection, types, analysis, interpretation and report with suggestion

WRITE –UP: GENERAL GUIDELINES:

S. No.	Title
1	Introduction
2	Statement of the problem
3	Relevance of the study
4	Review of literature
5	Aim and objectives
6	Data and tools
7	Methodology
8	Data arrangements, Analysis and Interpretation
9	Results and discussions
10	Summary and Conclusions
11	References
12	Appendices

- The total number of pages should be minimum of 40, including text, figures, tables, photographs, references and appendices.
- The viva-voce presentation is with the help of equipment which are available in the department.

MODEL QUESTION PAPER

M.Sc., GEOGRAPHY

TIME : 3 Hours **Maximum Marks : 75**

SECTION – A **10 x 2 = 20**

Answer all questions

All answer carry equal marks

1.
2.
3.
4.
5. **{Two questions from each unit to be set}**
6.
7.
8.
9.
10.

SECTION – B **5 x 5 = 25**

Answer all questions

All answer carry equal marks

11. a) or
    b)

12. a) or
    b)

13. a) or **{Two Questions from each unit to be set questions either (a) or (b) type }**
    b)

14. a) or
    b)

15. a) or
    b)

SECTION – C **3 x 10 = 30**

Answer any THREE questions out of FIVE questions given

All answer carry equal marks

16.
17.
18. **{One question from each unit to be set}**
19.
20.

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