

MOTHER TERESA WOMEN'S UNIVERSITY KODAIKANAL

**M.V.Muthiah Govt. Arts College (W) Dindigul, Department of Geography
Course Structure for M.Sc. Geography under CBCS
(Those Who Join June 2018 Onwards)**

Paper No	Paper code	Course title	Hours	Credits	(CSI)	(ESE)	Total
SEMESTER - I							
1	PGET11	Advanced Geomorphology	6	5	25	75	100
2	PGET12	Applied Climatology	6	5	25	75	100
3	PGET13	Hydrology and Oceanography	6	5	25	75	100
4	PGEP11	Practical- I Terrain and Climatic Data Analysis	6	5	25	75	100
5	PGEE11	Elective - I Social Geography	6	5	25	75	100
		TOTAL	30	25			
SEMESTER - II							
6	PGET21	Agricultural Geography	6	5	25	75	100
7	PGET22	Urban Geography	6	5	25	75	100
8	PGET23	Geography of India	6	5	25	75	100
9	PGEP22	Practical - II Socio Economic Data Analysis	6	5	25	75	100
10	PGEE22	Elective- II Environmental Geography	6	5	25	75	100
		TOTAL	30	25			
SEMESTER - III							
11	PGET31	Geographical Thought	6	5	25	75	100
12	PGET32	Remote sensing, GIS and GPS	6	5	25	75	100
13	PGET33	Cartography and Quantitative method	6	5	25	75	100
14	PGEP33	Practical-III Cartography and Geo informatics	6	5	25	5	100
15	PGEE33	Elective -III Geography of Economic Activities	6	5	25	75	100
		TOTAL	30	25			
SEMESTER - IV							
16	PGET41	Population Geography	6	5	25	75	100
17	PGET42	Research Methodology	6	5	25	75	100
19	PGEP43	Project	18	5	40	60	100
		TOTAL	30	15			

Total Credits = 90

SEMESTER - I

ADVANCED GEOMORPHOLOGY

Objectives

- **To recognize the methodologies, tools and data sources used by geomorphologists and physical geographers.**
- **To identify basic landforms from tectonic, volcanic, fluvial, glacial, aeolian and coastal environments.**
- **To determine the physical, chemical and biological processes controlling the modern evolution of identified landforms.**
- **To communicate the importance of fundamental geomorphic principles and findings to the wider academic community.**

UNIT I Nature – Scope and Content – Fundamental Concepts – Recent Trends

UNIT II Geomorphic process – Endogenic – Diastrophism - folds, faults – continental Drift theory – Plate tectonics – Mountain Building theories –geosynclinal theory of Kober, thermal contraction theory of Jeffrey, and thermal convection theory of Holmes - earth quake and volcanoes – Exogenic process – Weathering – Mass Movement – Soil formation .

UNIT III Gradational Process – Work of River, Normal cycle of erosion by Davis – Peneplain concept - Modification of the cycle - concept of Penck and King

UNIT IV Aeolian landforms – erosional and depositional - Glacial landforms – Erosional and Depositional - Underground water and karsts topography – landforms developed in limestone regions - Waves – erosional and depositional features – coast – Johnson’s classification of coast.

UNIT V Development of slopes – Ideas of Wood, Davis, Penck and King – Climatic geomorphology - Morphogenetic regions -Applied Geomorphology – Mineral exploration, Engineering, hydrology.

BOOKS FOR REFERENCE

- 1. Thorn Bury D. Principles of Geomorphology, Wiley Eastern Ltd. New Delhi – 1984.**
- 2. Dayal P. A Text book of Geomorphology, Shukla book Deprt, Patna – 1995.**
- 3. Worcester P.G., A Text book of Geomorphology, Van Nostrand Rein holds Company, New york, 1948**
- 4. Strahler, A.H and Strahler, A.N., Modern Physical Geography, New York, John Wiley & sons .INC**

SEMESTER - I

APPLIED CLIMATOLOGY

Aims and Objectives

- **Climatology explain the nature of climate**
- **Why it differs from place to place**
- **How it is related to other elements of the**
- **Natural environment and human activities**
- **It is the study of the verities of climates found**
- **On the Earth and their distribution over the**
- **Surface of the Earth**

- UNIT I** **Composition and structure of atmosphere, solar radiation - temperature - factors controlling the distribution of temperature - horizontal, vertical distribution of temperature - heat balance of the earth - Atmospheric Pressure - distribution - General circulation of the atmosphere -wind - systems - planetary - seasonal and local winds .**
- UNIT II** **Atmospheric moisture - Humidity, evaporation - condensation - clouds - Precipitation - types and forms - distribution - Air mass - classification- fronts - Thunderstorms - jet streams - Elnino and La Nina .**
- UNIT III** **Empirical and generic climatic classification - Koppen and Thornthuwaite - World Climatic regions - Climatic changes - evidences and theories .**
- UNIT IV** **Applied climatology - micro climate - agro climatology - concepts - elements - temperature - wind - rainfall - water budget - artificial rainfall.**
- UNIT V** **Urban climatology - micro climatic changes - global warming - heat island - health hazards - pollution - rainwater harvesting - man's impact on climate.**

Reference Books

1. **Lal. D.S., Climatology , Chatianya Publishing House, Allahabad, 1990**
2. **Howard J. Chritchfield, General Climatology, Prentice - Hall of India Pvt Ltd, 1987**
3. **Glenm.T.Trewartha and Lyes H. Horn An introduction to Climate, International Student Eidition ,McGraw Hill International Book Company, 1980.**
4. **Peter Haggett, - Geography of Modern Synthesis , Hopper and Row Publishres INC, 1979**
5. **Berry R.G &Chorely R.J., - Atmosphere, Weather and climate , Mathew & co, London 1978**

SEMESTER - I

HYDROLOGY AND OCEANOGRAPHY

Aims and Objectives

- **To introduce students to the basic principles underlying physical processes in the ocean.**
- **To show students that the basic physical principles can be represented with mathematical equations.**
- **To apply these basic physical principles to develop an understanding of specific ocean phenomena and processes.**
- **To understand some of the important linkages between physical oceanography and the other oceanographic disciplines-- marine biology, chemical oceanography, and marine geology.**
- **To help understand why physical oceanography is important in the earth system and to learn about the interactions with other components of the system, particularly the atmosphere.**

UNIT I	Hydrological cycle - sub cycle - elements - precipitation, evaporation, infiltration, runoff .
UNIT II	Drainage basin - characteristics, human impact on hydrological systems - Construction of dams and reservoirs - capacity changes - river draining - principles of water balance and it application.
UNIT III	Ocean of the world - Atlantic, Indian and Pacific Ocean - relief temperature, salinity and density of ocean water - distribution
UNIT IV	Movements of ocean water - waves, tides ,Tsunami - currents of Atlantic, Pacific and Indian oceans
UNIT V	Ocean deposits - Origin Types and Distribution - Coral reef- - conditions for growth - types and distribution - theories .

Reference Books

1. **H.M. Raghunath., Hydrology Principles, Analysis and design., Wiley Eastern Limited, New Delhi, 1986.**
2. **Richard J.Chorley., Introduction to Physical Hydrology - Methuen & CO LTD - 1977.**
3. **Lal .D.S., Oceanography**
4. **Grant Gross - Oceanography, Prentice - Hall International Editions , 1987**
5. **Sharma.R.C., and M.Vital - Oceanography for Geographers , Chatianya publishing house , Allahabad , 1987**
6. **Paul R. Pinet - Oceanography, West Publishing Company, 1992**

SEMESTER - I

PRACTICAL – I TERRAIN MAPPING AND CLIMATIC DATA ANALYSIS

- UNIT - I** Terrain data analysis - Profiles –Serial, Super imposed – projected and Composite –Slope analysis – Smith, Wentworth, Robinson Methods.
- UNIT - II** Drainage Basin analysis – stream ordering – Strahelr’s method – Bifurcation ratio, drainage density – shape of the drainage basin- Miller’s circulatory ratio.
- UNIT - III** Climatic data analysis – climatic diagram – E.E. Fosters climograph, climatograph – Thermo isopleths – rainfall distribution – dispersion – rainfall variability.
- UNIT - IV** Water balance – Aridity Index – NDVI Index

REFERENCE BOOKS

- 1** R.L. Singh _ Elements of Practical Geography, KalyaniPublishres, New Delhi
- 2** F.J. Monkhouse and H.R Wilkinson, Maps and Diagrams, B.I. Publications, Madras
- 3** Gopal Singh – Map work and Practical Geography, Vikas publishing house Ltd
- 4** V.P. Subrahmanyam and Subramaniam,A.R. Application of water balance concept for a climatic study of droughts in south India, 1964

SEMESTER - I

ELECTIVE – I - SOCIAL GEOGRAPHY

Aims and Objectives

- **Preparing responsible citizens for the nation, the state, and the local area.**
- **Preparing students who have the knowledge and skills in social studies needed for college.**
- **Developing awareness and understanding of contemporary social issues.**
- **Developing healthy self-concepts.**

- UNIT – I Social Geography – Nature and scope – social structure and processes – concept of space and place – social well being – quality of life – social exclusion , derivation and discrimination issues relating to under privileged groups – spatial distribution of social groups in India, tribes, castes , religions and language groups.**
- UNIT – II Concept of culture, culture complex, culture areas and cultural regions, cultural heritage, cultural interactions, cultural diffusion and cultural ecology – cultural imperialism.**
- UNIT – III Health – factors affecting human health – nutritional status, diseases – etiological condition, classification and distribution patterns, - Health care planning and policies in India, prospects of medical tourism in India.**
- UNIT – IV Concept of boundaries and frontiers, heart land and rim land theories – conflicts – resource, regional and ethnic human rights and conflicts resolution – recent trends and development in Political Geography.**
- UNIT – V Geopolitics of climatic change, geo politics of World Resources – regional organizations of co operation(SAARC, ASEAN, OPEC , EU)**

REFERENCE BOOKS

- 1. Majid Husain-Human Geography-Rawat Publications 1994.**
- 2. Gillian C.Morgan – Human and Economic Geography, Oxford University Publications 1999.**
- 3. Aime Vincent Perpillou-Human Geography, Longman Group limited London 1977.**
- 4. C.Daryll Forde-Habitat, Economy and Society, Methuen Publishers 1977.**
- 5. Chandna-Popualtion Geography, Kalyani Publishers**

SEMESTER – II

AGRICULTURAL GEOGRAPHY

Aims and Objectives

- **To examine the spatial distribution of crops, livestock and other agricultural activities. The cropping patterns and crop and livestock combinations vary in space and time. For example, the crop associations of Punjab and Haryana are different from those of Rajasthan, Bihar and West Bengal. The causes of such variations and their systematic explanation are one of the primary objectives of agricultural geographers.**
- **To ascertain the spatial concentration of agricultural phenomena. There are certain crops which have very high concentration in one area and low or insignificant concentration in other areas. The reasons for such spatial densities are examined by agricultural geographers.**

UNIT I	Nature, Scope and significance of agricultural geography - Approaches to the study of Agricultural Geography - Agricultural types and their Characteristics - Elements of Agriculture – Land, Labour , Capital, Market
UNIT II	Determinants of Agriculture – Physical, Economic, Social Institutional and technological factors – Green Revolution – First and Second - its implications.
UNIT III	Von Thunen’s Theory of Agricultural location and its modification – Application of Von Thunen’s theory to present day agricultural location – land use - types – land use survey - land capability classification – Remote sensing in land use analysis.
UNIT IV	Agricultural productivity – Determinants and - measurements - Regionalization - cropping Pattern, – crop combination Analysis – Weaver, DoiRafiullah, Crop Diversification – Bhatia. .
UNIT V	Agricultural Regions of the World – India and Tamil Nadu – Whittlessey’s agricultural classification.

BOOKS FOR REFERENCE

- 1. Hussain, M. – Agricultural Geography Inter, India Publications, New Delhi**
- 2. Morgan , W.B &Muntan , R.J.C. – Agricultural Geography**
- 3. Singh Jasbir, and Dhillon - Agricultural Atlas of India- A Geographical Analysis, Vista Publishers, Krukshetra.**
- 4. Symons,I – Agricultural Geography, G. Bells & Sons, London**
- 5. Savindra Singh and Dhillon**

SEMESTER – II

URBAN GEOGRAPHY

Aims and Objectives

- **To analyze cities as entities in terms of locations, characters, growth, and relations to the surrounding countryside, as well as,**
- **To discuss patterns of the city's interior – land use, social and cultural patterns, patterns of circulation, and above all, natural patterns of environment – all as they exist in interrelation and interaction in the urban area.**

UNIT- I Nature, Scope and Development of urban Geography – Urbanization – Factors – Urbanization in developed countries and India.

UNIT – II Demographic structure of cities – age and sex structure – population – growth, density, and occupational structure.

UNIT – III Urban land use models – C.B.D. – Delimitation - Economic base – Functional classification of towns and cities – Basic and non-Basic concepts.

UNIT IV Urban Expansion – Vertical and Horizontal – Urban sprawl – Urban fringe – Urban renewal – Suburbs - Growth and characteristics – City regions concept – Umland demarcation – Hierarchy of Urban centers – Rank size rule –Central Place Theory.

UNIT – V Urban problems – Slums – Pollution – Transport – Urban Planning.- Rural settlement – types and patterns distribution – Urban migration , land use changes – land acquisition and characteristics.

Reference Books

- 1. H. Carter- The Study of Urban Geography, Edward Arnold, London**
- 2. J.H.Johnson- Urban Geography of Towns, Hutchinson University Library, London**
- 3. Mayer & Kohn – Readings in Urban Geography, Central Book Depot, Alahabad**
- 4. Northam – Urban Geography. John Wiley & Sons Inc; 2nd edition 1979**

SEMESTER – II

GEOGRAPHY OF INDIA

- UNIT I** **Location – Structure and relief – Drainage pattern – Climate – Rainfall distribution – Climatic types.**
- UNIT II** **Soils-Natural vegetation – Need for conservation of soils and forests – Agriculture types and regions – Irrigation – Types and multipurpose projects – Distribution of food and commercial crops – Rice, Wheat, Cotton, Sugarcane, Tea, Coffee and Jute.**
- UNIT III** **Power resources – Hydel, Thermal, Atomic - Mineral resources – Iron ore, Manganese, Mica, Bauxite and Copper. Major industries – Cotton, Iron and Steel, Sugar, Cement – Small scale and cottage industries.**
- UNIT IV** **Transport and communication – Land, Water and Air – Ports and Harbors – Economic significance – Trade – volume – direction. Population – Distribution and density – growth – Trends – Problems.**
- UNIT V** **Resources of Tamilnadu – climate, water, soil, forest, population, power – Industrial regions.**

BOOKS FOR REFERENCE

- 1) Gopal Singh – Geography of india, Atma Ram & Sons, New Delhi, 1995**
- 2) Sharma T.C. and Countinho. O – Economic and Commercial Geography of India, Vikas publishing house Pvt Ltd, New Delhi, 1998**
- 3) Memoria, C.B, Economic and Commercial Geography of India, Sivalalagrawal and company, Agra 1995**
- 4) Tirtha, Geography of India, 1996**

SEMESTER – II

- PRACTICAL II – SOCIO ECONOMIC DATA ANALYSIS

UNIT I **Population data - growth – Simple line graph – Semi log –Log
Log graph – Lorenz curve – Age and sex pyramid - Triangular
graph – Population Potential map.**

UNIT II **Transport analysis – Connectivity measures – Alpha, Beta and
Gamma indices. Accessibility measures – Binary matrix,
shortest path matrix, Associated Numbers, Shymbel Index,
Distance Matrix – Detour index.**

UNIT III **Agricultural Data Analysis – cropped areas of individual crops –
crop ranking – crop combination analysis - Weaver’s, Doiand
Rafiullah’s methods – crop diversification Bhatia’s method**

UNIT IV **Index of Industrial Diversification - Hierarchy of Industrial
centers - Rank Size rule – Functional Classification – Nelson’s
and Rafiullah’s methods – Nearest Neighbor Technique.**

BOOKS FOR REFERENCE

- 1. F.J.Monkhouse&H.R.Wilkinson – Maps and Diagrams, Dirton
Co- New York 1971**
- 2. R.L Singh – Elements of Practical Geography – Kalyani
Publishers New Delhi, 1979**
- 3. Kansy, Y. – The Structure of Transportation Network.**
- 4. Tafee, E.J.& H.L Gauthier – Geography of Transportation,
Prentice Hall, New York.**

SEMESTER – II

ELECTIVE – II - ENVIRONMENTAL GEOGRAPHY

Aims and Objectives

- **It deals with the study of flow of energy and materials in the environment.**
- **It deals with the study of nature and its function.**
- **It deals with the exchange of various materials between the biotic and abiotic components of environment. E.g., Biogeochemical cycles.**

- UNIT I** **Environment – Elements and Types Man and environment relationships – determinism – possibilism, changing nature of concept – lithosphere – hydrosphere – biosphere – multi disciplinary approach**
- UNIT II** **Concept of Ecosystem – Ecosystem – structure – classification – Biomes – functioning of the ecosystem – food web – food pyramid – nutrient cycle – biodiversity – types .**
- UNIT III** **Natural disruptions of the ecosystem – natural hazards – land slide, earth quake, volcano , floods, droughts, pollution, human interference on ecosystem – population growth and its impact – Man’s modifications of the biosphere – agriculture – Green Revolution – HYV and pesticides – mining, soils – coastal areas.**
- UNIT IV** **Environmental planning and management; objectives and strategies; natural resource management and conservation (land, water and forest) – sustainable development concept, need, problems and strategies – EIA principles and procedures.**
- UNIT V** **The Stockholm conference, the earth summits and round tables, climate change (causes and consequences), Kyoto Protocol, world climate data monitoring programme (WCD MP) Environment related policies and programmes in India pertaining to wild life, water, forest and environment; Environment Governances**

BOOKS FOR REFERENCE

- 1 Trivedi, R.N - A Text Book of Environmental Sciences, AnmolPublicationsPvt.Ltd New Delhi, 1997**
- 2 Sexna, H.M – Environmental Geography, Rawat Publications Jaipur, 1999**
- 3 Savindhra Singh – Environmental Geography Prayag PushtakBhawan University Road, Alagabad 1991**
- 4 Gillbert White – Environment as a Hazard, Toronto, 1978**
- 5 Bruce Mitchell – Resources and Management Orient Long Man London, 1991**

SEMESTER – III

GEOGRAPHICAL THOUGHT

UNIT – I Contributions of Greek,Roman, Arab, Chinese and Indian scholars to geography – Beginning of modern Geography – varenions, kant, Alexander Von Humboldt, Carl Ritter – German, French, British and American schools of geographical thought.

UNIT – II Major geographic traditions – earth science, man – Environment relationship – area studies spatial analysis.

UNIT – III Dualism in Geography, physical Vs human, regional Vs systematic, determinism Vspossibilism, qualitative Vs quantitative, ideographic Vs nomothetic

UNIT – IV Forms of explanations in geography – Models, Theories and laws in geography.

UNIT – V Perspectives in geography – possibilism, behaviouralism, humanism – Marxism and structuralism, feminism – postrodemisim.

REFERENCE BOOKS

- 1. Negi B.S. Geographical thought – KarinathRamnathmeerat 1994.**
- 2. Freeman. R. Hundred Years of geography – Hutchinson London 1970.**
- 3. Harvey D. explanation to geography Edward Arnold publication, London.**

SEMESTER – III

REMOTE SENSING, GIS and GPS

Aims and Objectives

- To provide exposure to students in gaining knowledge on concepts and applications leading to modeling of earth resources management using Remote Sensing.
- To acquire skills in storing, managing digital data for planning and development.
- Understand the basic concepts of geography necessary to efficiently and accurately use GIS technology.
- Have an understanding of GIS and its relationship to mapping software development.
- Have an appreciation of GIS career options and how to pursue them.

UNIT I	Remote Sensing- definition-Types – Basic Principles – Ideal Remote Sensing System – Aerial Photography - Types of Photographs – Photo Mosaics – elements - photo Interpretation - Limitations of Aerial Photographic Technique – Photogrametry .
UNIT II	Space borne Remote Sensing – EMR – Platforms – Sensors – Resolution – Spectral signatures – visual image interpretation - Fundamentals – equipments – digital image processing .
UNIT III	Development of Remote Sensing programs in the world – USA, USSR, FRANCE, U.K and India – Development of remote sensing in India
UNIT IV	Application of Remote Sensing – land form inventory – water resources – urban studies , waste land management , disaster management, land use planning .
UNIT V	GIS – Definition – Basic Principles – Elements – DBMS – Geographic Database – GIS – Hardware and Software – Use of GIS – Application of GIS – resource mapping – natural hazards , flood and drought management in India – GPS –Historical development – components – differential GPS – applications

BOOK FOR REFERENCE.

1. C.S.Agarwal&P.K.Grag – Text Book of Remote Sensing – Wheeler Publishing 2000
2. Ball D.R. – Babbage – Geographic Information System for Defence Application – Pergamon Press – Australia
3. Barrette &Burough – Principles of GIS for Land Resource Assessment – Clarendon Press – Oxford
4. BidhaneshMisra – Geographic Information System & Economic Development.
5. Gampbell. James B.I Introduction to Remote Sensing – The Guild Press , New York
6. LanHeywod, Sarah Cornelines, An Introduction to Geographical Information System I Addison – Wesley, Longman Ltd,2000

SEMESTER – III

CARTOGRAPHY AND QUANTITATIVE METHODS

Aims and Objectives

- **To describe and summarize spatial data.**
- **To make generalizations concerning complex spatial patterns.**
- **To estimate the probability of outcomes for an event at a given location.**
- **To use samples of geographic data to infer characteristics for a larger set of geographic data (population).**
- **To determine if the magnitude or frequency of some phenomenon differs from one location to another.**
- **To learn whether an actual spatial pattern matches some expected pattern.**

UNIT - I Meaning, Scope and Development of Cartography - Fundamentals of Map Projections- Types - Uses and choice of map Projection - Compilation and Generalization of Maps-Compilation of Base Maps.

UNIT - II Simple and Complex - Thematic maps – Qualitative and Quantitative- Point, line, Area and Volume Symbols -Map Design and Layout- Lettering and Toponymy- Tools and Techniques for map drawing – map construction and production – photographic and non - photographic processes , printing processes – stencil cutters.

UNIT - III Hypothesis Testing – Needs & Types – Significance & Confidence Level – Parametric – Non Parametric Produce – Chi Square Testing, T- test-Test

UNIT - IV Data collection – sources of data – secondary , primary and spatial data – data processing – measures of central tendency – mean , median , mode – standard deviation - coefficient of variation.

UNIT - V Data analysis – co relation – Pearson’s product movement correlation – Spearman’s rank correlation- Regression analysis – residual mapping – factor analysis - ANOVA

BOOKS FOR REFERENCE

1. **Monkhouse F.J. and Wilkinson H.R.-Maps and Diagrams-Dirton Co.,Newyork.**
2. **R.P.Mishra and A.Ramesh-Fundamentals of Cartography-Concept publishing Company,New Delhi.**
3. **Raise E.-Principles of Cartography M.C.Graw Hill.**
4. **Robinson A.H. and R.D.Sale-Elements of Cartography-Hjohn Wiley and Sons, NewYork..**
5. **Singh R.L. and P.K.Dutt-Elements of Practical Geography.**
6. **Subramaniam-Introduction to Computer.**
7. **M.D.Zulfequarahamad Khan –Text Book of Practical Geography, Concept Publishing Company, NewDelhi.**

SEMESTER – III

PRACTICAL – III - CARTOGRAPHY AND GEO INFORMATICS

UNIT I Preparation of Thematic Maps – Representation of Statistical Data by Point, Area, Line and Volume Symbols.

UNIT II Interpretation of Survey of India Toposheet.

UNIT III Visual Interpretation of Aerial Photographs, satellite Imageries.

UNIT IV Digital image processing technique.

BOOKS FOR REFERENCE

- 1. Monkhouse F.J. and Wilkinson H.R.-Maps and Diagrams-Dirton Co.,Newyork.**
- 2. R.P.Mishra and A.Ramesh-Fundamentals of Cartography-Concept publishing Company,New Delhi.**
- 3. Robinson A.H. and R.D.Sale-Elements of Cartography-Hjohn Wiley and Sons, NewYork..**
- 4. Singh R.L. and P.K.Dutt-Elements of Practical Geography.**
- 5. M.D.Zulfequarahamad Khan –Text Book of Practical Geography, Concept Publishing Company, NewDelhi.**

SEMESTER – III

ELECTIVE – III - GEOGRAPHY OF ECONOMIC ACTIVITIES

Aims and Objectives

- **One can study easily about the economic activities of a particular region.**
- **Identification of geographical benefits in terms of an economic activity can be made easier through this *i.e.* India receives large benefit of sunlight than any other countries in Asia which helps to set up a solar power panels manufacturing industry.**
- **From which place it is most beneficial to get the maximum resources can be surveyed through it.**

UNIT – I	Economic Geography – Economic activities – Primary – secondary- tertiary and Quaternary activities – Natural resources – classification – World distribution and associated problems – resource management.
UNIT- II	Classification of industries – factors affecting location of industries – world industrial regions – tourism industry potentials and problems.
UNIT- III	World distribution and growth on information and communication technology – spatial interaction ideas of Edward Ullman , functional approach of m.E.Hurst , Models of transport and transport cost.
UNIT-IV	Measures and indices of connectivity and accessibility , spatial flow models – gravity model and its variants – allocation models.
UNIT-V	World Trade Organizations, Globalization and liberalization and world trade patterns –problems and prospects of inter and intra regional co – operation and trade .

BOOKS FOR REFERENCE:-

- 1. Gopal Singh – Geography of India, Atma Ram & Sons, New Delhi, 1995**
- 2. Sharma T.C. and Countinho. O – Economic and Commercial Geography of India, Vikas publishing house Pvt. Ltd, New Delhi, 1998**
- 3. Memoria, C.B, Economic and Commercial Geography of India, Sivalalagrawal and company, Agra 1995**
- 4. Tirtha, Geography of India, 1996**
- 5. Dubey and Negi – economic and commercial geography 1999**

SEMESTER – IV

POPULATION GEOGRAPHY

Aims and Objectives

- **Biological Attributes: human numbers, birth, death, sex, species, health, knowledge, etc.**
- **Social Attributes: marriages, religion, caste, literacy, language, education, nationality, family, social traditions.**
- **Economic Attributes: occupational structure, income, working population, depending and non-depending population and migration.**
- **Population distribution, density, and their affecting factors.**

- UNIT I** Nature, scope and significance of population geography – sources of populations data – Reliability of population data. Distribution and density of world population - Factors and pattern distribution.
- UNIT II** Dynamics of population – fertility – its measures and determinants and world pattern - mortality – its measures and determinants and world trend – world population growth and its trend – theories of populations growth - Malthus , Ricardo and Marx.
- UNIT- III** Demographic transition - Migration types – determinants – consequences of migrations– laws of migration – policies of migrations.
- UNIT – IV** Populations composition characteristics – age ,sex, rural, urban, occupation education – literacy – determinants and world pattern
- UNIT – V** Population resource relationship – optimum population under population – over population - population policies.

Reference Books

1. Chandna R.S – A Geography of Population Concepts, Determinants and patterns, Kalyani Publishers., New Delhi 1980
2. Clark John. I.- Population Geography Pergamum Press Ltd. Oxford 1981
3. Gosh, B.N – Population Geography, Sterling Publications. 1987
4. Beauju- Garneir.J –Geography of Population, Longman group Ltd, 1978

SEMESTER – IV

RESEARCH METHODOLOGY

Aims and Objectives

- **To understand some basic concepts of research and its methodologies.**
- **To identify appropriate research topics.**
- **To select and define appropriate research problem and parameters.**
- **To prepare a project proposal (to undertake a project).**
- **To organize and conduct research (advanced project) in a more appropriate manner write a research report and thesis.**

UNIT – I Research meaning and need for scientific research – approaches to research – interdisciplinary and trends in geography

UNIT – II Research design – identification selection and definition of problem – selection of topic – formulation of hypothesis – testing of hypothesis

UNIT – III sampling techniques – types – construction of Schedule / questionnaire – quantitative techniques used to analysis the data

UNIT - IV Collection of data – sources of data – primary , secondary, data – data transformation, tables charts diagrams and maps

UNIT – V Library and thesis writing – bibliography – cards – glossary – appendix – languages presentation – review of work done in the field – review of books and journals – writing of project reports.

Reference Books

- 1. B.N.Ghosh ,, scientific method and social research, strelling publishing , pvtlited , 1982**
- 2. Good and Hatt , method in social research , McGraw hill book company , 1981.**