

UNIVERSITY OF MYSORE
SYLLABUS FOR HONOR'S DEGREE IN GEOGRAPHY
UNDER CBCS

PAPERS FOR TWO SEMESTERS

CORE PAPERS (Compulsory)	CREDIT	CREDIT DESIGN IN LTP STRUCTURE	TOTAL CREDIT
1. Geological Basic of Geomorphology	3	2-1-0	
2. Applied Economic Geography	3	2-1-0	
3. Techniques of Analysis in Physical Geography Part-I	2	0-1-1	
4. Applied Climatology	3	2-1-0	
5. Conceptual Development in Geography	3	2-1-0	
6. Techniques of Analysis in Human Geography	2	0-1-1	16

ELECTIVES

Any six of following

1. Social Geography	3	2-1-0	
2. Research Methods in Geography	3	2-1-0	
3. Medical Geography	3	2-1-0	
4. Geography of Population Dynamics	3	2-1-0	
5. Tourism Geography	3	2-1-0	
6. Agricultural Geography	3	2-1-0	
7. Resources Conservation & Management	3	2-1-0	
8. Urban Geography	3	2-1-0	
9. Water Resources Management	3	2-1-0	
10. Thematic Cartography	3	2-1-0	
11. Fundamentals of Remote Sensing	3	2-0-1	
12. Fundamentals of G.I.S	3	2-0-1	
13. Geography of Mysore city	2	0-1-1	18-20

OPEN ELECTIVES

Any two of the following

1. G.I.S & Remote Sensing	3	2-1-0	
2. Physical Basis of Geography	3	2-1-0	
3. Introduction to Human Geography	3	2-1-0	
4. Geography of India	3	2-1-0	
5. Geography of Karnataka	3	2-1-0	6

UNIVERSITY OF MYSORE
SYLLABUS FOR M.SC IN GEOGRAPHY
UNDER CBCS

PAPERS FOR TWO SEMESTERS

CORE PAPERS (Compulsory)	CREDIT	CREDIT DESIGN IN LTP STRUCTURE	TOTAL CREDIT
1. Principles of Remote Sensing OR Remote Sensing Applications*	4	2-1-1	
2. Fundamentals of G.I.S OR Spatial analysis and Modeling**	4	2-1-1	
3. Methods of Regional Analysis	4	2-1-1	
4. Advanced Surveying & Photogrammetry	3	2-1-0	
5. Multivariate statistics	2	0-1-1	
6. Techniques of Analysis in Physical Geography Part-II	4	2-1-1	
	1	0-0-1	18

ELECTIVES

Any six of the following:

1. Transportation Geography	3	2-1-0	
2. Monsoon Climatology With Reference to India	3	2-1-0	
3. Environmental Impact Assessment	3	2-1-0	
4. Population, Resources & Development	3	2-1-0	
5. Global Geo-politics	3	2-1-0	
6. Fluvial Geomorphology	3	2-1-0	
7. Geographical Perspectives of Globalization	3	2-1-0	
8. Disaster Management	3	2-1-0	
9. Regional Development Planning in India	3	2-1-0	
10. Project in I semester	3	0-1-2	
11. Project in II semester	3	0-1-2	
12. Bio-Geography	3	2-1-0	18

* Only for those who have studied Remote sensing as optional at Honor's level.

** Only for those who have studies G.I.S as optional at Honor's level

Syllabus
Honors in Geography
Core Papers (Compulsory)
Paper – 1

Title of the Paper: GEOLOGICAL BASIS OF GEOMORPHOLOGY (Credits – 3)

UNIT-I. Geological Time Scale

- i) Era, Period and Epoch
- ii) Major events in Precambrian era
- iii) Major events in Carboniferous period
- iv) Mountain building activity
- v) Tertiary and quaternary geology

UNIT-II. Stratigraphy

- 1).Classification of rocks
 - i) Physical and chemical composition of rocks
 - ii) Factors effecting physical and chemical composition of rocks
 - iii) Hard and Soft rocks
 - iv) Weak and Strong rocks
- 2) Stratification
 - i) Layers
 - ii) Structures
 - iii) Horizontal and vertical structure
 - iv) Conformities and un-conformities
 - v) Stratigraphic classification

UNIT-III. Structural Geology

- i) Elements of structural geology
- ii) Deposition textual and structure
- iii) Non – diastrophic structures

UNIT-IV. Major Structures and Tectonic events

- i) Convergent plate margin and associated landforms
- ii) Divergent plate margin and associated landforms
- iii) Transform plate margin and associated landforms

Reference:

1. Structural Geology by Robert J. Twiss and Eldridge M. Moores (Hardcover - Dec 15, 2006)
2. Structural Geology of Rocks and Regions, 2nd Edition by George H. Davis and Stephen J. Reynolds (Hardcover - Jan 19, 1996)
3. Fundamentals of Structural Geology by David D. Pollard and Raymond C. Fletcher (Hardcover - Sep 19, 2005)
4. Basic Methods of Structural Geology by Stephen Marshak and Gautum Mitra (Paperback - April 4, 1988)
5. Earth Structure: An Introduction to Structural Geology and Tectonics (Second Edition) by Stephen Marshak and Ben A. van der Pluijm (Hardcover - Dec 29, 2003)
6. 3-D Structural Geology: A Practical Guide to Quantitative Surface and Subsurface Map Interpretation by Richard H. Jr. Groshong (Hardcover - Jul 24, 2008).

Paper – 2

Title of the Paper: APPLIED ECONOMIC GEOGRAPHY (Credits -3)

UNIT-I. Economy-Concept and a Simple Model of the Economy, Structure of the Economy in its spatial context. Environmental relations of the economy. The economy and economic Geography. Spatial and Systematic Approaches to the study of economic activities.

UNIT-II. Decisions making in the Economy: Types and Mechanics of decision making, Effect of Time & Space on Price formation, Government Intervention. Locational choices of the industries. Theories of industrial location, weber, Losch, D.M.smith, Fetter, Hotelling, Allen pred, Greenhot, Location and Allocation problem.

UNIT-III. Consumers Behavior and the economy - Analysis of consumers Behavior spatial variation in construction consumers Behavior in Space. Market Centers-Origin & Types-Periodic & daily marketing Sequential Development retails & wholesale markets.

UNIT-IV. Movement & spatial interaction. Movement and its spatial analysis generation of movements within between areas Spatial and non spatial factors. The distribution of movement. The Structure of commodity flows.

References:

1. Abler, Adams and Gould (1971) – Spatial Organization, Prentice – Hall, Englewood Cliffs, New Jersey.
2. Hodder and Lee – Economic Geography
3. John W. Alexander and Gibson (1979) – Economic Geography, Prentice – Hall of India private limited, New Delhi.
4. K. Siddhartha (2000) – Economic Geography, Kishalaya Publication, New Delhi.
5. Prithwish Roy (2005) – Economic Geography, New central Book Agency Kolkata.
6. Knowles & Wareing (1996) – Economic & Social Geography, Rupa& co, Calcutta.
7. Fredman and Aconse (1964) – Regional and Development and Planning, M.T.Press, Cambridge.
8. David M.Smith (1984) – Human Geography, A welfare Approach, Arnold Heinemann, London.

Paper – 3

Title of the Paper: TECHNIQUES OF ANALYSIS IN PHYSICAL GEOGRAPHY PART - 1
(Credits-2)

UNIT-I. Techniques of terrain mapping: Slope and Aspect map, Calculation of gradient and slope- per cent gradient and Angle of the slope, Altimetric frequency analysis, Hypsometric and area height curves.

UNIT-II. Profile Drawing: Introduction, Uses, Types. Serial Profiles, Superimposed profiles, projected profiles, Composite profiles.

UNIT-III. Fluvial Analysis: Morphometric analysis- Stream order analysis, Bifurcation Ratio Analysis, Sinuosity Index, Drainage density Analysis, Drainage Frequency Analysis, River flow analysis, Rainfall discharge relationship, Drawing of Thalweg profiles.

UNIT-IV. Drawing of Block diagrams: Two point perspective, one point perspective, non-perspective, Groundwater inferences techniques and Climatic data construction techniques

Reference:

1. R.L Singh: Elements of practical Geography, Kalyani Publications. 2005
2. RP. Mishra: Fundamental Cartography, Concept publication, New Delhi. 2001
3. R.Hammond and P.Mecullagh: Quantitative techniques in Geography. Claredon press, oxford. 1975.
4. Anson R.W and Colour use guidelines for mapping and visualization “visualization in modern Geography” Oxford.

Paper – 4

Title of the Paper: APPLIED CLIMATOLOGY (Credits - 3)

UNIT-I. Dynamics of wind system: Humid region, Development, Types, movement and Impact. Sub Humid region, Development, Types, movement and Impact. Semi Arid – development, Types, movements and impact. Arid region – Development, types, movement and impact.

UNIT-II. Applied Climatology – Koppen – Thornthwaite – Trewartha classification, weather forecasting – methods and trends, agro climatology: elements – heat island – air pollution – green house effects – ozen depletion – human comfort zones.

UNIT-III. Global warming and climate change – Process of climate change – process of Ice ages – impact of ice ages, Theories of climate change – Astronomical Theory.

UNIT-IV. Application of Remote sensing and GIS in the field of Climatology. Analysis of LISS – II and Thematic Mapper Satellite data and Google image.

Reference:

1. Milankovitch, M. 1920. theorie Mathematique des phenomenes Thermiques produits par le radiation Solarie. Gauthier – Villars Paris.
2. Milakvitch, M. 1930. Mathematische Klimalehre und Astronmische Theorie der Klimaschwankungen, Handbuch der Klimalogie Band 1 TeilA Borntrager Berlin.
3. Milankovitch, M. 1941 Kanon der Erdbestrahlungen und seine Anwendung auf das Eiszeitenproblem Belgrade.
4. Lal. D.S (1996), Allahabad : Chaitanya publishing house.
5. Collings. V.K (1987) Weather, radar and Flood forecasting, John Wiley and sons.
6. Crithfield. H.J (1996) General Climatology, Prentice Hall, New Jersey.
7. Menon P.A (1989) Our weather, National Book Trust, New Delhi.
8. Smith. K. (1975), Principles of Applied Climatology, McGraw Hill book Co., London

Paper - 5

Title of the Paper: CONCEPTUAL DEVELOPMENT IN GEOGRAPHY (Credits - 3)

UNIT-I. Growth of geography as a systematic science.

1. Development of Geographical thought during pre modern period – An overview:
 - iii. General Vs Particular
 - iv. Quantitative vs qualitative
- i. Determinism Vs possibilism
- ii. Inductive vs deductive
- v. Pragmatism vs Behaviouralism

UNIT-II. Revolution in Geography:

- a. Conceptual revolution:
 - i) Space and distance - Spatial implications and distance decay.
 - ii) Spatial diffusion behavior and movements.
 - iii) Regional concepts and Regional methods in geography and regionalism
 - 1 Regional approach in geography
- b. Quantitative revolution
 - 1 Development of theories, Laws, models in paradigms geography

UNIT-III. Contemporary issues in geography

- a) Approaches in geography:
 - 1 Systems approach.
 - 2 Multi-disciplinary and inter disciplinary approach
 - 3 Ecological approach.
- b) Dimension in geography:
 - 1 Global and local dimensions: global changes influencing local conditions..
 - 2 Ecological dimension: human welfare and quality of life.
 - 3 Spatial dimensions: A difference is spaces with respect to employment, resources, topography, climate, spatial connection, spatial mobility, population, spatial relationships.)
- c) Contemporary themes in Geographical perspective: gender; intercultural; socio-economic and religious perspectives.

UNIT-IV Application of digital technology in geographical analysis

1. Remote sensing and Geographic information system.
2. Spatial decision support system to assist in interpretation of geographical phenomena.

References:

1. Mishall R. : Changing nature of geography.
2. Majid Hussain : Evolution of geographical thought.
3. Freeman T. : Hundred years of geography
4. Chorley and Peter Haggett: Models in geogaphy.
5. Hartshorne R. : Perspectives on the nature of geography.
6. Wooldridge and East. W. G : The spirit and purpose of geography

Paper - 6

Title of the Paper: Techniques of analysis in Human Geography (Credits -4)

UNIT-I. Nature of Geographical Data. Need for quantitative techniques in geography and limitations of these techniques. Measures of point distribution – centrality index, Central location- Median Centre, Mean Centre, Central location by formula method. Measures of dispersion of point, Dispersion about the median or mean center, Dispersion about some other specific location, Dispersion of point in relation to each other. (Barth and Demangeon and Deboures methods of dispersion analysis)

UNIT-II. Nearest neighbor analysis, Rank size Rule, Gravity model. Measures of line distribution, Accessibility of nodes. Route density, Route sinuosity, Detour index, shortest path and shortest distance analysis, Traffic flow, Measure of connectivity- Beta index, Connectivity, Gamma index, Cyclomatic number, Alpha index, Eta index.

UNIT-III. Measures of Area Distribution. Lorenze curve, Gini-coefficient, Index of dissimilarities and Similarities, Location Quotient, Index of concentration, Gibbs Martin index, shift-share analysis

UNIT-IV. Measures of Disparities – Kendall’s method, Bhatia’s method. Combinational analysis – Weaver’s method, Ternary diagram.

References:

1. Aslam Mahmood (2007) – Statistical Methods in Geographical studies, Rajesh Publications, New Delhi.
2. R.B. Mandal (2005) – Introduction to Rural Settlement, Concept Publishing Company, New Delhi.
3. R. Hammand and P. Mcchllagh (1975) – Quantitative Techniques in Geography, Clarendon press, Oxford.
4. J.P. Cole and C.A.M. King (1968) – Quantitative Geography, John Willey & sons Ltd, London.

Electives

Paper - 1

Title of the Paper: SOCIAL GEOGRAPHY (Credits - 3)

UNIT-I. Nature and scope and Development of Social Geography, Social structure, Social process and Elements of Social Geography: ethnicity, tribe, dialect, language, caste and religion.

UNIT-II. Conceptual and Methodological approaches in Social Geography, Philosophical basis of Social Geography Positivism, Humanism, Idealism, Phenomenalism, Existentialism, Structuralism and Radicalism. .

UNIT-III. Space and Society, Individual's space, Intimate, Personal, Public and social space, Spatial Interaction and Social relations, Theoretical space organic, perspective and symbolic space, Interaction and social relations

UNIT-IV. Social Groups, Primary and secondary groups, Social structure, Models of assimilation and segregation. Social wellbeing, Concepts, components and Indicators of measurement of social wellbeing. Patterns of social wellbeing in world and India.

References:

1. Anand Aijazuddin(1999) : Social Geography, Rawat publications, Newdelhi.
2. Bulsara J.F(1970) : patterns of social life in metropolitan areas , Popular Prakashan Bombay.
3. Orang Mike (1998) Cultural Geography,Routledge Publication London.
4. Dubey, S.C (1991) Indian Society, National bank Trust, New Delhi.
5. Gergom. D and Lassy J (1985): Social relations and spatial structure Mcmillan .
6. Messey D et all (Eds) 1999: Human Geography today, policy press Combridge .
7. Herbert D.T and Smith D.M (1979): Socia problems and city Geographical Perspective Oxford University press London.
8. Jones Emrys(1975): Readings in social Geography oxford University press London.
9. Kroy P.L (1978): Social Wellbeing a Spatial Perspective, oxford University press London.

Paper – 2

Title of the Paper: RESEARCH METHODS IN GEOGRAPHY (Credits -3)

UNIT-I. Research Methodology: Meaning –Need for Scientific research Type of research- Approaches to geographical research: Defining the Research problem

UNIT-II. Research design: Concepts relating to research design, Different type of Research design. Sampling design: Need for Sampling Methods, Size of Sampling; Measurement and Scaling Techniques,

UNIT-III. Data Acquisition and Analysis; collection of data- sources of data- primary and secondary- Processing-Editing, Coding, Classification and Tabulation, Analysis- data transformation- SPSS package in data analysis

UNIT-IV. Interpretation and Report writing: meaning, techniques and significance of report writing- Drafting of the thesis-First, Second and Final- Writing of abstracts, Research papers for seminar and conferences, Journal Publications.

References:

1. Anderson, J. Durston, B.H. and Poole, M,(1970) Thesis and Assignment Writing, Wiley Eastern Ltd, New Delhi
2. Cooray, P.G (1992) Guide to Scientific and Technical Writing, Handagala, Srilanka
3. Davis J.C. (1986) Statistics and data Analysis, John Wiley and Sons NY.
4. Fitz Gerald, B.P. Ed (1974) Science in Geography, Series 1, 2, 3,4,5,6. Oxford University press, London
5. Hang, L.L. and Lounsbury, J.F. (1971) Research Methods in Geography, Brown company Publishers, Iowa
6. Kothari, C.r. (1990) Research methodology: methods and Techniques, Vishwaprakashana, New Delhi

Paper – 3

Title of the Paper: MEDICAL GEOGRAPHY (Credits - 3)

UNIT-I. Concepts and Traditions: Definition, scope, elements, Growth of medical Geography Methods and techniques.

UNIT-II. Human-Environment Interaction: Health and environment-concept of health, Geographical approaches of health, Natural environment and health- Inorganic and organic, Social environment and health : Food intake, Perception of diseases, Treatment of diseases, Socio-economic conditions and health.

UNIT-III. Modernization, Population change and health: Disease classification- Genetic, Communicable, non-communicable, Occupational, deficiency diseases, WHO Classification of diseases. **Diseases Diffusion:** Meaning, factors/barriers, Phases, Types of diffusion. **Epidemiological Transition**-The theory of epidemiological transition (Omran theory) factors of transition- Demographic, Changes in risk factors, Practices of modern medicine. Indicators.

UNIT-IV. Global Inequalities in Health resources: Concept of health care, levels of health care, social context of disease, health care accessibility and utilization, Health care system world wide, health care services in India, health care policy in India.

Reference:

1. Husain Majid (1994): 'Medical Geography', Amol Publication Pvt.Ltd. New Delhi
2. Learmonth A T A (1978): 'Patterns of diseases and hunger', a case study in Medical Geography, David and Charles, Victoria
3. May J M (1970): 'The world atlas of diseases' National Book Trust, New Delhi
4. Mc. Glashan N.D (1972): 'Medical Geography, Methuen, London
5. Misra R P (1970): 'Medical Geography' National Book Trust, New Delhi
6. Rais A S Learmonth A T A (1990): 'Geographical aspects of health and diseases in India' rawat Publication, Jaipur
7. Stamp L. D.(1964): 'Some aspects of Medical geography', Oxford University Press Oxford
8. M.S.Meade and R.J. Erickson (2005), Medical Geography Guilford press.

Paper - 4

Title of the Paper: GEOGRAPHY OF POPULATION DYNAMICS (Credits- 3)

UNIT-I .Population dynamics and components of population dynamics. Fecundity and fertility. Measures of fertility determinants of fertility, world's pattern and trend. Theories of fertility. Fertility in India, trend and spatial patterns.

UNIT-II. Mortality – morbidity. Measures, determinants world's pattern and trend. Theories of mortality. Mortality in India-trend and pattern. Life table construction. Migration-measures, theories of migration. International migration – past and present trend. Migration in India, trend and pattern, problem of Brain drain and impact.

UNIT-III. Population growth stepped and exponential growth and demographic transition. Transition in USA, UK, Japan and China. Population growth and Boserup theory, Malthusian trop. India and demographic transition. Economic implications of Demographic transition with reference to India. Current demographic status in MDCs and LDCs.

UNIT-IV. Population policies and population projections. Population policies – importance, various aspects of population policy. Policies in LDCs and MDCs. India's population policy, China's policy. Methods of population projections.

Reference:

1. Asha A.Bhende & Tara Kanitkar – Principles of Population Studies, Himalayan Publishing House, New Delhi.
2. R.C. Chadana () – A Geography of Population, Kalyani Publishers, New Delhi.
3. Mohammad Izhar Hassan (2005) – Population Geography, Rawat Publications, Jaipur.
4. R.K. Tripathi (2000) – Population Geography, Commonwealth Publishers, New Delhi.
5. Hornby & Jones (1983) – An Introduction to Population Geography, Cambridge University press, London.
6. Majid Husain (1994) – Human Geography, Rawat Publication, Jaipur.
7. Dina Nath Verma (1992) – Population Patterns, Jaitosh Prakashan, Lucknow.

Paper - 5

Title of the Paper: TOURISM GEOGRAPHY (Credits -3)

UNIT – I. Nature, Scope, Definition & importance of Tourism. Approaches to the study of Tourism. Tourism System, Tourist – Types of Tourist. Factors affecting Tourism (Tourist attraction)

UNIT- II. Tourism Motivations, Tourist Behavior, Travel Agencies, Types of travel agents & tour operators. Organizational structure of travel Agencies, Membership & Types, Organizational structure of IATA. Rules & conditions for Recognition of Travel Agency.

UNIT- III. Tour packaging – Definition, Components, types of package tour & Tour package – Designing & Developing Process, Destination & Market & Demand & Dimensions of Tourism. Tourism and GPS.S

UNIT- IV. Travel & accommodation: Structure of accommodation. Travel & Transport – Modes of Transport, Tourism Planning & Environment.

Reference:

1. Rana Pratap and Kamala Prasad (2003) “Tourism Geography” Shree Publishers and Distributors, New Delhi.
2. Krishan K.Kamra & Mohinder chan (2006) basics of Tourism theory, operatuion & practice, Kanishka publishers New Delhi.
3. Batta.N (2004), “Tourism and the Enronment” Indus Book, New Delhi.
4. Bhatia A.K (2006) The business of Tourism concepts & strategies, sterling publishers prorate limited, New Delhi.
5. Bhardwaj, Kandan and Choudary (2004), “Domestic Tourism in India” Indus Books.
6. Bhatia A.K (2002) Interntional Tourism management, sterling publishers prorate limited, New Delhi.
7. Pran Nath Seth & Sushma Seth Bha2006t An introduction to Travel & Tourism , sterling publishers prorate limited, New Delhi.

Paper – 6

Title of the Paper: AGRICULTURAL GEOGRAPHY (Credits -3)

UNIT- I. Nature, Scope & Significance of Agricultural Geography, Origin & diffusion of agriculture and approaches to the study of agriculture geography world classification of agriculture bases for the whillesey.

UNIT- II. Determinants of agriculture:

1. Physical 2. Economic 3. Social 4. Institutional
5. Technological Green Revolution, White Revolution Blue Revolution

UNIT- III. Models in Agricultural Geography – Nature & Need of models, significance of Agricultural models, Limitation of models, Classification of models, Input, output/Decision making/Diffusion/Von Tuner’s, Janissaries model and Game Theory.

UNIT- IV. Agricultural Regionalization: Delimitation of Agricultural regions, Empirical/single Element/Multi-Element or statistical/Quantitative-cum-Qualitative Technique, Methodology for agricultural regionalization Cropping Pattern/Crop concentration, Crop combination Crop Diversification & Agricultural productivity.

Reference:

1. M.Shafi,(2006) “Agricultural Geography” Dorling Kindersly (India) pvt, ltd, Licensees of Pearson Education in South Asia. New Delhi.
2. Majid Hssain, (2002)“ Systematic Agricultural Geography” Rawat Publication, Jaipur.
3. Noor Mohammed, “Perspectives in Agricultural Geography”, Vol. I to II, concept publishing company, New Delhi.
4. Sing and Dhillin, (2000) “ Agricultural Geography”, Tata Mcgrow – Hill publishing company ltd, New Delhi.
5. Jasbir sing, “Agricultural Geography”

Paper – 7

Title of the Paper: RESOURCES CONSERVATION AND MANAGEMENT (Credits -3)

UNIT-I. Introduction: Concepts, Classification and Appraisal –Natural Resources-
Natural Resources Economics-Management of Natural Resources: Government-
Other Agencies.

UNIT-II. Resource Assessment: Land Evaluation-Methods-Land Classification
Methods-Soil & Water Conservation- Land Use & Land Cover Mapping –Land
Use Planning & Development.(3 Case Studies)

UNIT-III. Resource Assessment: Water Resources Assessment- Watershed Analysis &
Management-Coastal & Ocean Resources & Management-Fisheries
Management (3 Case Studies)

UNIT-IV. Risk Assessment: Wild Life, Forest, Recreational, Agriculture & Range Land
Assessment- Ecological Risk Assessments (ERA) - Natural Resource Damage
Assessment (NRDA)(At Least 3 Case Studies)

Reference:

1. Dasmann – Environmental Resources.
2. Finch Trewartha and Sheares – The Earth and its Resources
3. Herald G.V.V – Conservation of Natural Resources
4. Kommeyer – Poulation Studies
5. Negi B.S – Resource Geography
6. Oliver. Owen – Natural Resource Conservation
7. Renner G.G – Conservation of Resources
8. Zimmermann – world Resources.

Paper – 8

Title of the Paper: URBAN GEOGRAPHY (Credits- 3)

UNIT-I. Urbanization Concepts and process: meaning of urban settlements and Urbanization. Criteria used to distinguish urban settlements, Behavioral, structural and demographic concept of Urbanization, distribution and evolution of cities through historical times, Urbanization curve.

UNIT-II. Urban Morphology- Models of Urban structure: Park and Burgess Model. Homer And Hoyt model, Harris and Ullman model. **Rural- Urban fringe:** Meaning, characteristics, Suburbanization, Concepts of conurbation, megalopolis, Satellite towns. **Factorial ecology and social area analysis.**

UNIT-III. City and its region, Contemporary Urban issues: Concepts of city region, Characteristics and demarcation, Nature of Urban influence. Contemporary Urban issues: Price of land and vertical and horizontal growth of cities, Urban sprawl, Scarcity of housing and growth of slums, problems of civic amenities, urban transport problem, Environmental pollution.

UNIT-IV. Urban policy and planning with special reference to India: Policies of Urban development, Need of city Planning, elements of city planning, Master plans of towns, New towns.

References:

1. Roberts, Brian K. (1996): Landscapes of settlement: Prehistory to the Present, Routledge, London.
2. Gates, Richard and stout, Fredric (2000): The city Reader, Rout ledge (London and New York)
3. O'sullivan, A. (2000): Urban Economies, 4th Edition, Me Graw Hill, Boston
4. Knox, Paul and Pinch Steven (1996): Urban Social Geography: An Introduction
5. Carter (1972): The study of urban geography, Edward Arnold, London.
6. Kundu.A (1992): Urban development and urban research in India, Khanna Publications
7. Hall P (1992): Urban and regional planning, Rout ledge, London
8. Tim Hall: Urban Geography
9. K Siddhartha and S Mukherji: Cities, Urbanizations and urban systems.
10. Shah Manzoor Alam: Urbanization in developing countries.

Paper – 9

Title of the Paper: WATER RESOURCES MANAGEMENT (Credits - 3)

UNIT-I. Sources of water, Atmospheric relationship of water:rainfall and temperature, evop-transpiration, rainfall and runoff relationship, hydrological cycle.Rain harvesting as strategies of water resource conservation, other strategies of water conservation; water recycling.

UNIT-II. Hydrological, hydro-morphological and hydro-pedagogical assessment. Morphological units and drainage classifications assessment of surface and sub surface (ground water) discharge and recharge condition and water table relationship. Measurement of soil moisture, soil classification and water quality; Water logging and salinization, floods and droughts.

UNIT-III.Watershed management; concept of watershed; morphological units, morphogenetic classification, marphometric analysis, importance of watershed protection and approaches to watershed protection, watershed management.

UNIT-IV.Impact of modern development on water resource: - need of water for domestic and non-domestic use. Irrigation development and water resource management, Big and Small irrigation project and their impact on water resource, Tank and Well irrigation and their impact on water resource. Industrialization and its impact on water resource, Urbanization and its impact on water resource. Demand and supply position of water resource, contemporary water crisis.

Reference:

1. Bruce J.P. & R.H. Clerk, Introduction to hydrometeorology, pergamon press, Oxford, 1996.
2. David Keith todd, Ground water hydrology, John Willy and sons, New York, 1959.
3. Robert J. Reimold, watershed management, practice, policies and co-Ordination, McGraw-Hill, New Delhi, 1998.
4. B.D.Dhawan,Indian water resource management for Irrigation : Issues Critiques reiews, Commonwealth publishers, New Delhi, 1993.
5. Ravi Misra, Fresh water Environment, Anmol publication pvt.LTD, New Delhi, 2002.
6. Ramaswamy R. Iyer, water perspective, Issues, concerns, SAGE publications, New Delhi, 2003.

Paper - 10

Title of the Paper: THEMATIC CARTOGRAPHY (Credits - 3)

UNIT-I. Nature of cartography

- a. Meaning of maps
- b. Cartography as a science of human communication
- c. Type of Maps and photographs and their uses
- d. Collection of data- Physical and cultural details.
- e. Map scale.

UNIT-II. Map Making Process:

- a) Elements of generalization,
- b) Measurement of geographical variables (nominal, Ordinal, interval, ratio,)
- c) Basic statistical concepts and processes (absolute and derived data. Ratios, Indexes of variation,)
- d) Basic statistical relationships (correlation analysis and regression analysis)
- e) Symbolization: qualitative, quantitative, continuous and discrete data.
- f) Thematic and complex mapping.

Lab: generalization, simplification, classification, symbolizing qualitative, quantitative, continuous and discrete data. Symbolization-point, line, and area.

UNIT-III. Map design and Layout:

- a) Scope and objective of Map design
- b) Design process
- c) Perceptual considerations
 - i. Graphic elements
 - ii. Visual variables
 - iii. Classes of symbols
- d) Design principles
 - i. Legibility
 - ii. Visual contrast
 - iii. Figure – ground organisation
 - iv. Hierarchical organisation.
- e) Controls of map design (Purpose, Reality Available data Map scale Audience)
- f) Design planning
- g) Principles-Theory of Visual Perception
- h) constraints in map design

Lab: Map Layout. Map compilation, map scale, Colour and patterns, Map lettering.

UNIT-IV. Printing and publishing

- a) Computer cartography- hardware and software,
- b) Toponymy and map reproduction: planning and process related to duplicating,
- c) Printing and latest methods.

References:

1. Misra R.P. and Ramesh.(1989) Fundamentals of Cartography, concept publishing Co.New Delhi.
2. Nag,P.ed.,(1992) Cartography and Remote Sensing concept Publishing Co. New Delhi
3. Robinson, A H, Sale AH. Morrison JL and Muerake (1985) Elements of Cartography, John wiles and sons NY.
Burrough P.A. (1986) Principles of GIS for land assessment.

Paper - 11

Title of the Paper: Fundamentals of Remote Sensing (Credits -3)

1. Fundamentals: Definition – scope – types of Remote Sensing – Ideal and real remote sensing system. Comparison of Ariel remote sensing and satellite remote sensing – advantages and limitation of satellite remote sensing.
2. EMR and Remote sensing: Energy sources – Electro Magnetic s Radiation – Spectral regions – Energy interaction in the atmosphere, Atmospheric windows.
3. Remote sensors: Electro-optical IRS and IKONS sensors – Resolution: spatial, spectral, radiometric and temporal resolution of the satellites.
4. Microwave Remote sensing, principles of Microwave remote sensing, Active and passive Remote sensing systems, Radar Nomenclature. SAR AND SLAR systems. Interpretation of Radar images.

References:

1. Curran P.J (1985) Principles of Remote sensing, Longman, Essex.
2. Lillesand T.M and R.W. Kiefer (1994) 3rd edition. Remote sensing and image interpretation, John Wiley and sons, New York.
3. Sabins F.F Jr (1987) Remote sensing: principles and Interpretation , W.H.Freeman and Co., New York.

Paper – 12

Title of the Paper: FUNDAMENTALS OF GIS (Credits - 3)

UNIT-I. Definition and components of GIS, History of GIS, Objectives of GIS
Geospatial data- Spatial data, Attribute data, integration of Spatial and
Attribute data

UNIT-II. Coordinate systems; Map projections, Type of map projection, Datum Plane

UNIT-III. Structuring of spatial data - scanning, digitizing, error detection and
Correction, topology

UNIT-IV. Conceptual models of Spatial Information - Raster data model, Vector data model,
Integration of Raster and Vector data model, Conceptual Models of non-spatial
Information – Hierarchical, Network and Relational data models.

Reference:

1. Burroughs, P. A (1986): Principles of Geographical Information Systems for land Resources Assessment, Oxford University Press
2. Bernhardsen, Tor (1999): Geographic Information Systems: An Introduction, John Wiley and Sons
3. Clarke, Keith C. (1999): Getting Started with Geographic Information Systems, Prentice Hall
1. Demers, Michael N. (2000): Fundamentals of Geographic Information Systems, John Wiley
5. Haywood, Ian (2000): Geographical Information Systems, Longman
6. Chang, Kang-taung (2002): Introduction to Geographic Information Systems, Tata McGraw- Hill
7. Kang-tsung Chang (2008) “Introduction to Geographic Information Systems” Tata McGraw- Hill
8. Albert K.W.Yeung “Concepts and techniques of Geographic Information Systems’ Prentice-Hall, inc., New Jersey.

Paper – 13

Title of the Paper: GEOGRAPHY OF MYSORE CITY (Credits - 2)

1. Back ground of Mysore City

- (a) Physical background – location, size, situation, Climate, vegetation, soil, water bodies
- (b) Economic background
- (c) Demographic background.

2. History of Urbanization (The Evolution of Mysore as a Town)

- Prehistoric period, Medieval period, British period (1800-1947)
- Post independence period

3. Land Use, Location of activities and Urban Transport System

- (a) Land use and location of activities
 - Standard classification of Land uses in Mysore city
 - Location of activities:
 - (i) Residential
 - (ii) Commercial
 - (iii) Educational
 - (iv) Recreational
 - (v) Industrial.
- (b) Mysore city and Region
 - Area of city influence and characteristics.
 - Area of city Dominance
- (c) Urban Transport System

4. The Rural-Urban Fringe

- Transformation of Fringe and Its stages
- Structure of rural-urban fringe
 - (a) Land use
 - (b) Social characteristics
 - (c) Demographic characteristics.

Reference:

1. P.D.Mahadev- people, space and economy of Indian city. A case study of Mysore city. Prasaraanga, University of Mysore.
2. Ramachandran, Urbanization and Urban system in India.
3. K. Siddhartha and S. Mukherjee - cities, Urbanization and Urban system.

OPEN ELECTIVES

Paper- 1

Title of the Paper: G.I.S AND REMOTE SENSING (Credits -3)

UNIT-I. Introduction to remote sensing

- principles of remote sensing
- Electro-magnetic radiation (EMR)
- Electro magnet spectrum
- Energy interactions with atmosphere
- Energy interactions with earth-surface features.

UNIT-II. Satellites and sensors

- Microwave remote sensing
- SAR and SLAR
- Imaging interpretation and analysis

UNIT-III. Introduction to GIS

- definition, concepts and components of GIS
- Geographical entities

UNIT-IV. Sources of spatial data

- data encoding-spatial data modeling-raster-vector data models
- Data management system: Relational and hierarchical modes
- GIS applications.

Reference:

1. Borrough P.A (1986), "Principles of Geographic information system for land resources," Clarendon press, Oxford
2. Chrisman N.R. (1997), "Remote sensing and Geographical information systems"
3. Sabbins.F.F (1987), "Remote sensing: principles and interpretations", W.H.Freeman and Co, New York
4. Haywood.L, Comelius.S and S. Carver (1988), "An introduction to Geographical information system", Addison Willey, New York.

Paper - 2

Title of the Paper: PHYSICAL BASIS OF GEOGRAPHY (Credits - 3)

UNIT –I. Solar system – shape & size of the earth, Movement of the earth-
Rotation & Revolution Effects of the movement – Earth coordinates – Latitude
Longitude & Time.

UNIT – II. Composition of the Earth's Interior, Rocks, –Minerals – Classification &
rocks – Igneous rocks sedimentary rocks, Metamorphic rocks,
Weathering – Mechanical, Chemical & Biological Work of Running
Water & Glaciers.

UNIT – III. Composition of Atmosphere, Weather & Climate Factors affecting the
Distribution of Temperature, Insulation, Horizontal & Vertical Distribution
of Temperature- seasonal variation in the general distribution of
Temperature pressure & winds, Rainfall – Types of rainfall.

UNIT – IV. Distribution of Land & Sea – submarine relief, surface relief of the ocean
vertical distribution of Temperature, Salinity – Factors controlling Salinity,
Distribution of the salinity, ocean currents, tides & Types of tides.

Reference:

1. B.S.Negi (1993) "Physical Geography" S.J Publication. Meerat.
2. R.N.Tikka (2002) "Physical Geography" Kedar nath ram nath & co. Meerat.
3. K.Siddhartha (2001) "Atmosphere, wheather and climate", Kisalaya publication, New Delhi.
4. William D. Thornbury (1997) "Principle of Geomorphology", New Age InternaTIONAL (P) Limited, New Delhi.
5. D.S Lal (1998). "climatology" Chaitanya publishing house, Allahabed.

Paper - 3

Title of the Paper: INTRODUCTION TO HUMAN GEOGRAPHY (Credits - 3)

UNIT-I. Field and Scope of Human Geography. Branches of Human Geography. Approaches – Nomethetic and Idiographic. Development of Human Geography – Germans, French and American contribution.

UNIT-II. Cultural Diversities – Race, Religion and Language. Major tribes of the World.

UNIT-III. Survey of World Resources – Concept and Types of Resources. Forest resources, Mineral and Power resources – Iron, Manganese, Bauxite, Gold, Coal, Petroleum, Atomic and Hydro. Agricultural region of the World.

UNIT-IV. Population of the World – Density and Distribution, Growth and Composition. Human Migration – types, Causes and Consequences.

References:

1. Majid Husain (2002) - Human Geography, Rawat Publication, Jaipur.
2. Rubenstein and Baon (1990)- The cultural Landscape: An Introduction to Human Geography, Prentice – Hall of India LtD, New Delhi.
3. Brek and Webb (1968) – A Geography of Mankind, McGraw – Hill Book Company, New York.
4. Peter Hagget (1972) – Geography: A modern Synthesis, Harper & Row Publishers, New york.

Paper - 4

Title of the Paper: GEOGRAPHY OF INDIA (Credits - 3)

UNIT-I. Geographical location of India, Economic Position of India in relation to world, salient features of geological structures of India. Main Physiographic divisions: Northern Mountains, North Indian Plains, Peninsular Plateau ,Costal lowlands and islands, Drainage system of India, East flowing and West flowing rivers.

UNIT-II. Climate seasons and Climatic Regions: various seasons and associated weather conditions , mechanism of Monsoon , majors climatic regions of the India. Soils , types and their distribution , soil degradation and conservation. Forest, types and their distribution in India, deforestation and conservation of forest.

UNIT-III. Minerals and Power Resources ,distribution of Ironore, Manganese,Baxite ,coal ,Petroleum and Natural gas , Major power projects in India(Hydro, Thermal, Atomic) Agriculture, Distribution of Major Crops, Rice, Wheat, Cotton, Sugarcane, and Maize. Green revolution in India.

UNIT-IV. Major Industries and Industrial development in India.Distribution of Industries, Cotton textile, Iron and Steel Sugar, Chemical fertilizers and engineering . Industrial Regions of the India. Transportation: Road, Railway, Airway and Inland Water transportation systems in India.Population growth , distribution and composition in India.

Reference:

1. Chopra S.N : India an area study.
2. Dubey and Negi: Economic Geography of India.
3. Gopal Singh: Geography of India.
4. Khulhar: Regional geography of India.
5. Singh R.L: regional geography of India.
6. Sharma and Continu: Economic and commercial Geography of India.

Paper – 5

Title of the Paper: GEOGRAPHY OF KARNATAKA (credits - 4)

UNIT-I. Location , Administrative divisions and Physiographic divisions of the Karnataka. Geology, Rivers, Climate, Soils, vegetation, Social forestry and National Parks and Birds sanctuaries.

UNIT-II. Development of Irrigation in Karnataka, Major Multipurpose river valley Projects, Krishna and Caveri water dispute. Agriculture : Distribution of crops, Rice, Jowar, Ragi, Bajara, Maize, Wheat, Tur, Oil Seeds ,Sugarcane ,cotton, Tobacco, Coffee, Mango, Coconut, Areca nut, Pepper, Cardamom , Coriander and Sericulture.

UNIT-III. Mineral resources: Distribution of Iron ore, Manganese, Bauxite, Copper, Gold. Major power Projects, Hydel power Projects, Thermal Power Plants and Atomic Energy centers. Industries: growth and Distribution of Cotton textile, Silk textile, Sugar, Iron and Steel, Cement and Paper Industries in Karnataka. Industrial Regions and Special Economic Zones in Karnataka.

UNIT-IV.Transportation : Development and distribution of Roads, Railway, Water way Ports and Harbors and Airways. Population: growth Distribution, Density and Composition of Population in Karnataka. Tourism: major Historical and geographical Places in Karnataka.

Reference:

1. R.P.Misra (1973) :Geography of Mysore.
2. N.B.K.Reddy &G.S.Murthy(1967); Regional Geography of Mysore State.
3. P.Mallappa(2008): Geography of Karnataka.
4. Karnataka State Gazetteer.
5. Karnataka: Directorate of Information and Tourism, Govt, of Karnataka.
6. Karnataka Walkipedi

SYLLABUS
M.SC IN GEOGRAPHY
CORE PAPERS (Compulsory)
Paper- 1

Title of the Paper: Principles of Remote sensing (Credits -4)

Unit.1 Energy sources, Electro Magnetic Radiation (EMR), Blockbody concept, Electromagnetic Spectrum, Ideal and real Remote sensing, Atmospheric windows.

Unit.2 Energy interaction with atmosphere, Energy interactions with earth surface features, Platforms and sensors.

Unit.3 Sensor Systems – Type and Characteristics of earth Resource satellite – LANDSAT, SPOT, IRS, IKONS Sensors.

Unit.4 Microwave Remote sensing- Principles of Microwave remote sensing. Active and passive remote sensing systems, Radar Nomenclature. SAR and SLAR systems, Interpretation of Radar images.

Practicals: Digital Image Processing

1. Elements of visual interpretation
2. Techniques of visual interpretation and interpretation keys.
3. Ground truth collection – spectral signature
4. Commonly used ground truth equipments use of Radiometers
5. Image rectification and restoration
6. Geometric correction
7. Radiometric correction and Noise removal
8. Image enhancement and image classification

Reference:

1. Burroughs, P. A (1986): Principles of Geographical Information Systems for land Resources Assessment, Oxford University Press
2. Bernhardsen, Tor (1999): Geographic Information Systems: An Introduction, John Wiley and Sons
3. Clarke, Keith C. (1999): Getting Started with Geographic Information Systems, Prentice Hall
4. Demers, Michael N. (2000): Fundamentals of Geographic Information Systems, John Wiley
5. Haywood, Ian (2000): Geographical Information Systems, Longman
6. Chang, Kang-taung (2002): Introduction to Geographic Information Systems, Tata McGraw-Hill
7. Kang-tsung Chang(2008) “Introduction to Geographic Information Systems” Tata McGraw-Hill
8. Albert K.W. Yeung “Concepts and techniques of Geographic Information Systems’ Prentice-Hall, inc., New Jersey.

Paper- 1

Title of the Paper: Remote sensing Applications (credits - 4)

1. Remote sensing Data: Types – Digital, analogue. Fluvial landforms – drainage pattern – Erosional and depositional landforms – flood plain mapping – coastal landforms – Erosional and depositional features – glacial landforms.
2. Land use / Land cover: concepts – classification: USGS, NRSA – land use mapping – land evaluation. Agriculture: crop assessment, forestry- types – species identification and disease detection. Soil – Soil mapping, soil moisture – soil erosion – reservoir station – soil salinity – soil conservation.
2. Water Resources: Surface water resources – water quality monitoring and mapping – water pollution, identification of ground water potential and recharge areas – integrated watershed development.
3. Hazards: Analysis – earthquake and volcanoes – landslides – land subsidence – Flooding – forest fire, desertification coastal erosion – oil spill.

References:

- a) American Society of Photogrammetry (1983) manual of Remote Sensing (2nd editions) ASP, Fall church, Virginia.
- b) Arthur Cracknell and Landson Hayes (Editors), 1991, Remote sensing year book 1987, Published by Taylor and Francis Ltd., London.
- c) Barrett E.C and Anton Micalle, 1991, Remote sensing for Hazard Monitoring and Disaster Assessment, Taylor and Francis Ltd., London.
- d) Barrett E.C, 1990, Satellite Remote sensing for Hydrology and water management, Garden and Breach Science publications, Switzerland.
- e) Buiter H.J and Jan ag.p Clevers , 1999, Land observation by Remote sensing, Taylor and Francis, 1999, London.
- f) Lillisand T.M and Kiefer P.W, 1998 Remote sensing and Image interpretation, John Wiley & sons, New york.
- g) Moffit H.F and Edward M.M (1980) Photogrammetry, Harrard Roe Publishers, New York.
- h) Skidmore A and Hendrik Prins 2002. Environmental Modelling with GIS and Remote sensing, Taylor and Francis Ltd., 2nd Edition.

Practical – Remote Sensing Applications

Interpretation of Aerial photography for:

Structural landforms
Fluvial landforms
Coastal landforms
Land use/ Land cover mapping
Transport and settlement

Interpretation of Satellite Images for:

Structural and Lineament
Fluvial landforms
Coastal landforms
Glacial landforms
Land use/ Land cover mapping
Urban land use
Soil mapping
Forest Cover
Digital data classification of land use.

References:

1. American Society of Photogrammetry (1983) manual of Remote Sensing (2nd editions) ASP, Fall church, Virginia.
2. Barrett E.C and Anton Micalle, 1991, Remote sensing for Hazard Monitoring and Disaster Assessment: Marine and Coastal Applications, Gardan and Breach Science publications, Pennsylvania, USA.
3. Gottfrieds.K . Geoinformation, 2003, Remote sensing, Photogrammetry and GIS, Taylor and Francis, 1st edition 2003, USA.
4. Lillisand T.M and Kiefer P.W (1998) Remote sensing and Image Interpretation, John Wiley & sons, New York.
5. Moffit H.F and Edward M.M 1980, Photogrammetry, Harperand Row publishers, New York.
6. Rencz R.N 1999 Manual of Remote sensing, Remote sensing for Earth Sciences, 3rd edition, Volume 3, John Wiley and Sons 1999, Canada.
7. Wolf 1974 Elements of Photogrammetry, McGraw Hill books Co., London.

Paper- 2

Title of the Paper: FUNDAMENTALS OF GIS (Credits -4)

UNIT-I. Definition and components of GIS, History of GIS, Objectives of GIS
Geospatial data- Spatial data, Attribute data, integration of Spatial and Attribute data

UNIT-II. Coordinate systems; Map projections, Type of map projection, Datum Plane
Structuring of spatial data - scanning, digitizing, error detection and correction,
Topology

UNIT-III. Conceptual models of Spatial Information - Raster data model, Vector data model, Integration of Raster and Vector data model, Conceptual Models of Non-spatial Information – Hierarchical, Network and Relational data models.

UNIT-IV. Spatial analysis and Modeling
Nearest neighbor Analysis, Trend surface Analysis
Gravity model, Network Analysis,
GIS Modeling

Reference:

1. Burroughs, P. A (1986): Principles of Geographical Information Systems for land Resources Assessment, Oxford University Press
2. Bernhardsen, Tor (1999): Geographic Information Systems: An Introduction, John Wiley and Sons
3. Clarke, Keith C. (1999): Getting Started with Geographic Information Systems, Prentice Hall
4. Demers, Michael N. (2000): Fundamentals of Geographic Information Systems, John Wiley
5. Haywood, Ian (2000): Geographical Information Systems, Longman
6. Chang, Kang-taung (2002): Introduction to Geographic Information Systems, Tata McGraw- Hill
7. Kang-tsung Chang (2008) “Introduction to Geographic Information Systems” Tata McGraw- Hill
8. Albert K.W. Yeung “Concepts and techniques of Geographic Information Systems” Prentice-Hall, inc., New Jersey.

Paper- 2

Title of the Paper: Spatial Analysis and Modeling (credits - 4)

1. Concept of Spatial organization:

Spatial Structure and arrangement: Location and Distance: Straight line – Shortest path – Manhattan – Rectilinear. Location – single and multiple locations. Spatial organization – process – interaction between places and regions.

2. Analysis of Point entity:

Distribution and Density – Centrophagy – Nearest neighborhood – reflexive neighbor – mapping density analysis (Isometry, dissymmetry) – point buffers.

3. Analysis of line entity.

Network topology – connectivity analysis, Shortest path and total connectivity – Detour index, accessibility – Buffers.

4. Analysis of Area entity/ Surface

Index of concentration and diversification – interpolation techniques – Gravity potential model- Thiessen polygon. 3D modeling. TM / DM – TIN and grid – contour – slope – hill shading – Time representation (4D). Trend surface analysis.

References:

1. Abler, Adam and Gould, 1971, Spatial organization: The Geographer's View of the world.
2. Burrough P.A, 1986, Principles of Geographic Information Systems for Land Resource Assessment, Oxford University press, New York.
3. Mitchell A, 1999, ESRI Guide to GIS analysis Vol.1, Geographic Patterns of Relationship, ESRI, Redlands, California.
4. Mitchell A, 2002 Arc GIS, spatial analyst, ESRI Redlands, California.
5. Tsung Chang – Kang 2002, Introduction to Geographic Information Systems, Tata MC GrawHill publishing c., NewDelhi.

Practical – Spatial Analysis and Modelling

1. Spatial database generation and editing; Geo referencing, projection and Re Projection, Spatial geometry and Data capturing methods, concepts of Geo data base.
2. Measuring Geographical distribution: Central feature and Mean acenter, Directional distribution and Directional mean, standard distance.
3. Density Analysis: Kernel density – point and line
Proximity Analysis: Buffer, Nearness and point distance
Interpolation Analysis: Kriging and Spine
Distance Analysis: Eduliedean and Path distance, Allocation and direction.
4. Surface and 3D Analysis: TIN, Slope, Contour, Hill shade and aspect. Network analysis: Best route closest facility and service area.

References:

1. Abler, Adam and Gould, 1971, Spatial organization: The Geographir's View of the world.
2. Burrough P.A, 1986, Principles of Geographic Information Systems for Land Resource Assessment, Oxford University press, New York.
3. Mitchell A, 1999, ESRI Guide to GIS analysis Vol.1, Geographic Patterns of Relationship, ESRI, Redlands, California.
4. Mitchell A, 2002 Arc GIS, spatial analyst, ESRI Redlands, California.
5. Tsung Chang – Kang 2002, Introduction to Geographic Information Systems, Tata MC GrawHill publishing c., NewDelhi.

Paper- 3

Title of the Paper: METHODS OF REGIONAL ANALYSIS (Credits - 3)

UNIT-I. Regional concept and regional methods. Types of regions characteristics of different regions. Delineation of regions and methods of delineation. Regionalism v/s Sectionalism. Regional consciousness and contemporary regional movements in India-Telangana, Gorkaland, Kodagu etc.

UNIT-II. Analysis of regional growth and diffusion. Sector and Stage theory of Regional growth, Export base theory of Douglesic, North, economic base theory, convergence and divergence growth, multi plier effect. Analysis of spatial diffusion at local and regional level. Simulation analysis.

UNIT-III. Growth pole and growth centers in regional analysis. Growth pole theory perrolux, Mydral, Hermensons views. Limitations of the growth pole, modifications - R.P.Mishra's growth foci. growth poles and regional development. Input and output analysis in general and regional context.

UNIT-IV.Analysis of Regional disparities – Balanced and unbalanced growth, Williamson's views on region inequality, causes for disparities in regional growth causes and consequences. Measures of disparities. Extent of disparities in India and Karnataka.

References:

1. Abler, Adams and Gould (1971) – Spatial Organization, Prentice – Hall, Englewood Cliffs, New Jersey
2. R.P. Mishra (1992) – Regional Planning, Concept Publishing Company, New Delhi.
3. Jayasri Ray Chaudhuri – An Introduction to Development and Regional Planning, Orient Longman Ltd, Kolkata.
4. John Glasson (1975) – An Introduction to Regional Planning, Hutchinson Prakashan, Meerat.
5. Walter Isard (1960) – Methods of Regional Analysis: an introduction to Regionla Science, Published by, The Massachusetts institute of Technology & John Wiley & sons, Inc, Newyork.

Paper- 4

Title of the Paper: ADVANCED SURVEYING AND PHOTOGRAMMETRY (Credits - 2)

UNIT-I. A) Earth linear measurement Theodolite and Total Station, Mapping the ground object, Locating the ground object from the map, Area computation- Triangle method, Square method, Trapezium method, Ordnance method, Mechanical method

B) Triangulation -Chain of simple triangulation, Chain of polygon, Chain of quadrilaterals
Classification of triangulations:

Ist order (central polygon and braced quadrilaterals)

IInd order (central polygon and braced quadrilaterals)

IIIrd order (order simple triangulations)

UNIT-II A). Measurement of vertical angle using Theodolite and Total station

i) Measurement of object height's theodolite – Graphical and trigonometrical

ii) Total station, iii) Measurement of volume

▪ Contoured line method, Spot levels method

B) GPS survey

i) Mapping the ground object

ii) Locating the ground objects from the maps

Unit. III

A) Introduction to Aerial Photographs, Definition, Types of Aerial Photographs, Procedures of taking vertical Aerial Photographs. Uses of Aerial photographs, Stereovision depth perception, Familiarization of Pocket and Mirror Stereoscope. Marginal information's of Aerial photographs.

B) Methods Of calculation of photo scale, computing scale a map known scale, computing scales using focal length and altitude, computing scale with photo distance and ground distance elements of a Aerial photo interpretation

Unit.IV

A) Measurement of height from Aerial photographs, parallax and parallax measurement. Mapping and interpretation of aerial photographs, relief, drainage system, Natural vegetation, settlements, transportation and land use and land cover.

B) Digital Photogrammetry: Definition of digital photogram metric image, creation of digital images, creation of digital photogram metric image and Automated surface modeling.

Reference:

1. American Society of Photogrammetry 1983: Manual remote sensing 2nd edition, ASP, Falls Church, Virginia.
2. Berling G.L and Roy W.W, Monticell, 1995, Application of Aerial photographs and Remote sensing imagery to urban research and studies.
3. Lillisand T.M & Keifer P.W, 1998, Remote sensing and image interpretation.
4. Moffit H.F & Edward M.M, 1980, Photogrammetry, Harper Row Publication New York.
5. Rampal K.K 2005, A Hand book of Aerial Photogrammetry and interpretation.
6. Sr. Michel H.R, John Wiley and Sons 1986, Remote sensing Methods and applications.
7. Rampal, Surveying, Mittal Publication, Merat, 2002.
8. P.C Punmia, Surveying, Laxmi publication, New Delhi, 2005.
9. R.P Mishra, Fundamental cartography, Concept publication, New Delhi, 2005.

Paper- 5

Title of the Paper: MULTIVARIATE STATISTICS (Credits- 4)

UNIT-I. Significance of Statistics in Geography, Review of basic statistical measures. Measures of Central tendencies, Measures of variation, Analysis of Variance (ANOVA),

UNIT-II. Basic Multi Variate Analysis. Correlation Analysis - Correlation coefficient for grouped and Uni grouped data, Rank Correlation. Regression Analysis – Simple Linear regression, Residual Analysis, Multiple Regression.

UNIT-III. Theory of Sampling and Testing of Hypotheses: Types of Sampling, Sampling distribution and standard error. Testing of Hypotheses – t test, f test and Chi-square Test.

UNIT-IV. Advanced Multivariate Analysis: Introduction, Factor Analysis and its methods, Centroid method, Principal Component Method, Use of SPSS in Statistical Analysis.

References:

1. R.Pannerselvam- Research methodology, Prentice hall India, New Delhi, 2008.
2. C.K Kothari - Research methodology, New Age International publishers, New Delhi, 2007.
3. Aslam Mohammad – Statistical methods in Geographical Studies. Rajesh Publishers, New Delhi, 2007.
4. RSN Pillai and Bhagavathi – Statistics –Theory and Practice, S Chand and Co.Ltd. New Delhi. 2007.

Paper- 6

Title of the Paper:TECHNIQUES OF ANALYSIS IN PHYSICALGEOGRAPHY PART –II (Credits - 1)

UNIT-I. Geological maps: Introduction, Interpretative information, Uses, Activity 1: Strike and Dip 2: Geological Cross sections, 3: A rule for Determining Attitude (Dip) from a map. 4. Conformity and unconformity

UNIT-II. Identification of Rock types: Importance and uses of rocks identification, Study of Rocks in relation to Mineralogy,Description about its colour, structure, texture, etc,

UNIT-III. Indian meteorological weather map analysis

Spatial distribution of Barometric instability and temperature gradient in

- Coastal India, Arabia, Indian Ocean, Bay of Bengal, Decan plateau, Gangetic plature
- Central India , Thar desert

UNIT-IV. Weather forecast (decimal) - S.W Monsoon period (out burst of monsoon)

- Tracking clouds Arabian Sea , Temperature,Pressure gradient, Wind direction and speed
- Relative humidity

North East monsoon period (Retreating transition)

- Tracking clouds BOB and IO
- Isothermal variation BOB and IO
- Barometric variation BOB and IO
- Wind velocity and direction BOB and IO
- Relative humidity BOB and IO

Development of cyclones (eastern dependency)-

- Continental and maritime barometric and temperature variation (study of any one cyclone period),Wind direction and velocity ,Forecast next two days

References:

1. Maltmann .A. (1998), Geological maps an introduction, John Wiley & sons.
2. Bennison,G.M & Moseley K.A (1997). An introduction to geological structures and maps.
3. Arnold.Leysho P.R & Lisle R.J (1996). Stereographic projection techniques in structural geology. Butterworth – Heinemann.
4. Lisle.R. (1995) Geological structures and maops. Butterworth – Heinemann.
5. Bulter B.C.M & Bell J.D (1988). Interpretation of geological maps. Longman earth Science Series.
6. Platt J.I (1961). Elementary exercises upon geological maps. Thomas Murby & Co.
7. Platt J.I (1961). Selected exercise upon geological maps.

Electives

Paper- 1

Title of the Paper: TRANSPORTATION GEOGRAPHY (Credits- 3)

UNIT-I. Historical evaluation of transportation, Transportation and spatial organization. Geography of transportation Network – Basic elements of transport network, Nodes & links measures of Transportation Methods, location of transportation routs and links.

UNIT-II. Flow Analysis: Methods of flow analysis trade and commodity flows, Spatial interaction and gravity model Spatial choices; destinations, modes & routes.

UNIT-III. Urban transportation; Urban land use and urban transportation, Urban mobility, Urban transport problems, land use modeling, Lowery, model Telecommuting & Transportation, City Logistics.

UNIT-IV. Transport planning & Policy: The nature of transport policies, the policy process, Transport Planning, Transport safety and Security. Geographic Information Systems in transport (GIS-T) - Current issues and problems, societal trends and their impact on transport.

Reference:

- 1.G.Gaile and C.Willmott (eds). "Transportation Geography" in Geography in American at the Dawn of the 21st century. New york. Oxford University press, 2004.
2. PeterDicken and Peter Lloyd. Location in space, 1990, "Structure of Transport costs."
3. Susan Hanson "The ext of Urban Travel", in Hanson and Giuliano (eds), The Geography of Urban Transportation,2004.
4. H.Dimitriou (ed) Transport planning for Third world cities. London. Routledge, 1990.
5. Moonis Raza (1999) Transportation Geography of India, Concept Publishing company, New Delhi.
- 6.Jean – Paul, The geography of Tranport system.
7. Saxena H.M (2005) "Transportation Geography".

Paper- 2

Title of the Paper: Monsoon climatology with reference to India (Credits - 3)

UNIT-I. Fluctuation of Temperature

- i) Seasonal fluctuation of temperature
- ii) Pattern of iso – therms on a peninsular India
- iii) Indo- gangetic plains
- iv) Arabian sea
- v) Indian ocean and bay of Bengal

UNIT-II. The Concepts of Low Pressure Trough

- i) On Shore and Off Shore Barometric Anomalies
- ii) Southern oscillation and conveyor belt

UNIT-III. The Role of Jet Streams

- i) Tropical Jet Streams
- ii) Subtropical Jet Streams
- iii) The south-west monsoon rainfall regions and north east monsoon rainfall Regions.

UNIT-IV. Impact of Global Warming

- i) Causes and Impact
 - a) Elnio – La nino
 - b) Rising of Sea level.
 - c) Deforestation
 - d) Melting of ice

Reference:

1. The Asian Monsoon: Causes, History and Effects by Peter D. Clift and R. Alan Plumb
2. The Asian Monsoon (Springer Praxis Books / Environmental Sciences) by Bin Wang
3. Monsoons over China (Atmospheric and Oceanographic Sciences Library) by Ding Yihui
4. Changes In The Human-Monsoon System Of East Asia In The Context Of Global Change (Monsoon Asia Integrated Regional Study on Global Change) by Congbin Fu (Hardcover - Jul 14, 2008)
5. Climatology by Robert V. Rohli and Anthony J. Vega (Paperback - Oct 18, 2007)
6. Monsoon Dynamics by James Lighthill and R. P. Pearce (Hardcover - April 30, 1981)

Paper- 3

Title of the Paper: ENVIRONMENTAL IMPACT ASSESSMENT (Credits -3)

UNIT-I. Introduction-Patterns and trends in E.I.A, Needs of E.I.A and emerging issues, Processes and procedures for environmental Assessment and Review.

UNIT-II. Technical components of E.I.A: Methods for Environmental Assessment; Adhoc Method, Check list Method, Matrix method, Overlay Method, Network Method, Beneficiant ratio method, UN procedure, Procedures adapted in Developed (USA & Canada) and Developing countries(India & China)

UNIT-III. Case studies and EIA and Review: for water resources, water quality, Land resources and terrestrial ecology, Waste Management, Traffic and Transportation, Air quality, Industrial & Irrigation projects, Assessment of impact on socio-economic Environment.

UNIT-IV. Synthesis and case Applications: Actual impact statements of cases on: Real estate, urban design, transportation, energy, natural resources, sustainable design, Irrigations Project & Social Justice.

Reference:

1. Environmental Impact Assessment: A New Dimension in Decision making 2nd Edition,
2. R.K.Jain, L.V. urban and G.S.Stacy, Van Nostrund Reinhold company.
3. K.Kumarswamy (2005) "Remote sensing for Environmental studies" Dpt. Of Geography, Bharathidasan University, Tiruchinapalli.
4. H.M Saxena (1999) "Environmental Geography", Rawat publications, Jaipur.
5. Savindra singh (1995) "Environmental Geography", Prayag Pustak Bhawan, Allahabad.

Paper- 4

Title of the Paper: POPULATION, RESOURCE AND DEVELOPMENT (Credits-3)

UNIT-I. Population Resource Nexus, limits to growth, optimum, over and under population.

Population equilibrium and population pressure. Impact of population pressure on energy, water and other resources. Population and food security / supply. Hunger, health and malnutrition. Population – resource regions of the world.

UNIT-II. Population growth and its environmental implications. Direct and indirect impact on environment. Impact on lithosphere, Atmosphere, Hydrosphere, Biosphere. Other implications.

UNIT-III. Population and development relationship. Concept, content and measure of development. Human development Index and its spatial analysis. Population and development - Experiences of the western countries and third world countries. Impact of population on economic development with reference to India. Quality v/s quantity of population.

UNIT-IV. Emerging demographic issues.

- Demographic dividend
- Ageing process
- Gender issues
- Quality of life
- Demographic regions.

References:

1. Lester R. Brown (1976) – In the Human Interest, A Strategy to stabilize world population, affiliated east – West Press, New Delhi.
2. B.N. Ghosh (1998) – Population Theories and Demographic Analysis, Meenakshi Prakashan, Meerat.
3. H.M. Saxena (1999) – Environmental Geography, Rawat Publication, Jaipur.
4. Nauhmal Singh (2002) – Population and Poverty, Mittal Publication, New Delhi.
5. Liebid and Iruday Rajan (2005) – An Ageing in India: Perspective, Prospects and Policies, Rawat Publication, Jaipur.

Paper- 5

Title of the Paper: GLOBAL GEO-POLITICS (Credits-3)

UNIT-I. Concept of state and nation's state

- i) Spatial factor of state
- ii) Frontiers and

UNIT-II. Concepts of geo-politics and models of geo-politics

- i) Rim land
- ii) Heart land theory model
- iii) Sea Pointer nodal
- iv) Territorial Sea and Maritime Boundaries

UNIT-III. Geo – politics and world organization

- i) UNO
- ii) WHO
- iii) IMF
- iv) ADB
- v) WB
- vi) FAO

UNIT-IV. Global politics and global strategy

- i) Pre – world war period
- ii) Post – world war period
- iii) Post – communist downfall geopolitics
- iv) Post – global economic change geopolitics

Reference:

1. Australia and the Insular Imagination: Beaches, Borders, Boats, and Bodies by Suvendrini Perera (Hardcover - Oct 27, 2009)
2. States of Emergency: The Object of American Studies by Russ Castronovo and Susan Gillman (Hardcover - Nov 15, 2009)
3. The Impact of 9/11 on the Media, Arts, and Entertainment: The Day that Changed Everything? by Matthew J. Morgan and Rory Stewart (Hardcover - Nov 24, 2009)
4. The 2008 Presidential Elections: A Story in Four Acts by Erik Jones and Salvatore Vassallo (Hardcover - Oct 27, 2009)
5. Hong Kong Cinema since 1997: The Post-Nostalgic Imagination by Vivian P. Y. Lee (Hardcover - Oct 27, 2009)
6. Sudeeptha Adhikari, Political Geography (1999) Rawat publication, New Delhi.

Paper- 6

Title of the Paper: FLUVIAL GEOMORPHOLOGY (Credits-3)

UNIT-I. The Application of GIS and Remote Sensing In Study of Fluvial Geomorphology

UNIT-II. Tectonic modification of Rivers

- i) Co- seismic modification of River system
- ii) Gradual change of river system
- iii) Longitudinal profiles
- iv) River pattern sinuosity
- v) Bed rock channel path river
- vi) Alluvial channel path river
- vii) Integrated models of tectonic adjustment of rivers

UNIT-III. Ground Fluvial Hydrology

- i) drainage network and drainage pattern
- ii) open channel hydraulics'
 - a) Types of flow
 - b) Regimes
 - c) Stream density
 - d) Gradient geological structure

UNIT-IV. Fluvial geomorphology with reference to Cauvery river basin
The applied geomorphology and ground water studies
Watershed Management in Cauvery basin.

Reference:

1. Fundamentals of Fluvial Geomorphology by Charlton Ro (Paperback - Dec 26, 2007)
2. Fluvial Processes in Geomorphology by Luna B. Leopold, M. Gordon Wolman, and John P. Miller (Paperback - Jun 28, 1995)
3. Tools in Fluvial Geomorphology by G. Mathias Kondolf and Hervé Piégay (Hardcover - April 11, 2002)
4. Fluvial Forms and Processes: A New Perspective by David Knighton (Paperback – April 1998)
5. Rivers and Floodplains: Forms, Processes, and Sedimentary Record by John S. Bridge (Paperback - April 25, 2003)

Paper- 7

Title of the Paper: GEOGRAPHICAL PERSPECTIVE OF GLOBALIZATION (Credits-3)

UNIT-I. Definition, Nature & Process of Globalization, Globalization in Developed & Under Developed Nations, Future trends of World Globalization.

UNIT-II. Geographical Processes and Consequences, Land Use Changes-Occupational Shifts & trends in Rural & Urban Scenario in Post 1990

UNIT-III. Socio-Cultural-Disintegration of traditional Cultural morel with special reference to India Of rural people to big Industrial cities in post 1990-Rising cost & Services the health and Insurance.

UNIT-IV. Globalization Agriculture, Impact of increased age inputs on size of holdings-trends in large scale corporate agriculture-Growth of SEZ on Indian Scenario.

Reference:

1. Gok-Ling ooi(2007): Geographies of a changing world-Global issues in the early 21st century' Pearson-printice-Hall , Singapore.
 2. BagachiA.K.(1999) : Globalisation, Liberalization and Vulnerability of India and Third world" Economic & Political weekly 34(45)6 november
 3. Ghosh S.N(2008) Facing the challenges of Globalisation Indian Academic of social sciences, Iswar saran Ashram campus Allahabad-211004.
 4. Hilary French(2000) 'Vanishing Borders-Protecting the planet in the Age of Globalization' A world watch Book, Earthworm Books pvt Ltd.Chennai-18
- This optional Papers promotes CBCS across disciplinies GIS based Projection.

Paper- 8

Title of the Paper: DISASTER MANAGEMENT (Credits-3)

UNIT-I. Environmental Hazards & Disasters: Concept of Environmental hazards, Environmental Disasters and Environmental Stress.

UNIT-II. Types of Environmental hazards & Disasters: Natural hazards and Disasters, Man induced hazards & Disaster-Earthquake, Volcanoes, Tsunami, Landslides, Cyclones, Floods, Drought, Soil Erosion & Sedimentation Processes.

UNIT-III. Emerging Approaches in Disaster Management-Three Stages-Pre-disaster Stage (Preparedness), Emergency Stage, Post Disaster stage-Rehabilitation.

UNIT-IV. Harnessing Information and Technology: Application of GIS.GPS, and Remote Sensing in Disaster Management.

References:

1. R.B. Singh(Ed) Environmental Geography, Heritage Publishers New Delhi,1990
2. Savinder Singh Environmental Geography, Prayag Pustak Bhawan,1997
3. Kates,B.I & White. G.F. The Environment as Hazards, Oxford, New York, 1978
4. R.B.Singh(Ed) Disaster Management, Rawat Publication, New Delhi, 2000.
5. H.K.Gupta(Ed) Disaster Management, University Press, India, 2003.
6. A.S.Arya Action Plan for Earthquake, Disaster, Mitigation in V.K.Sharma(Ed)
7. Disaster Management IIPA Publication New Delhi, 1994
8. R.K.Bhandani An overview on Natural & Man made Disaster & their Reduction, CSIR, New Delhi.
9. M.C.Gupta Manuals on Natural Disaster Management in India, National Centre for Disaster Management, IIPA, New Delhi,2001
10. Global Environment Outlook (2002) UNEP Earth Scan Publications Ltd, London.

Paper- 9

Title of the Paper: REGIONAL DEVELOPMENT PLANNING IN INDIA (Credits-3)

UNIT-I. Planning – types, need for regional approach in planning- regional planning – nature and principles Top-down and bottom up strategies in planning. Multi – level planning, Block and district level planning. Approaches to Regional Planning, Total regional approach, selective regional approach and target group approach. Social and environmental issues in planning.

UNIT-II. Regional development policies and programmes in Indian five year plans – Regionalization process in India, A review. Backward area development programmes. Tribal area development programmes, Drought prone area development programmes, Hilly area development programmes, Command area development programmes, Metropolitan area development programmes.

UNIT-III. Rural development in India process and objectives – major rural development programmes in India- pre-independence efforts. A brief study of various rural development programmes during different five year plans up to NAREGA. Urban development programmes in India – A review.

UNIT-IV. Case study of regional development programmes in India. NCR region, Tungabhadra command area, Terai region, Baster region, Dandakaranya Region, Damodar Valley region.

References:

1. Hemalata Rao (1984) – Regional Disparities and Development in India, Ashish Publishing House, New Delhi.
2. Mahesh Chan and Puri (1997) – Regional Planning in India, Allied Publishers limited, New Delhi.
3. Mahapatra and Routray (1998) Regional Development and Planning, Rawat Publications, Jaipur.
4. Sudhanshu Shekar (2004) – Regional Planning in India, Anmol Publication, New Delhi.
5. T.N.A. Rao (1993) – Regional Development – Levels of Development of Karnataka, Printed by Impressions, Belgaum.
- 6.

Paper- 10

Title of the Paper: PROJECT IN I SEMESTER (Credits-3)

Paper- 11

Title of the Paper: PROJECT IN II SEMESTER (Credits-3)

Paper- 12

Title of the Paper: BIO-GEOGRAPHY (Credits- 3)

UNIT-I. Scope and Development of Bio-Geography, Sub fields. Plant Geography and Zoo Geography. Eco-System-Structure, Functions and Development of Eco-System. Energy transfer, Energy loss food chain and food web.

UNIT-II. Geography of Plant Communities Evolution and Classification of Plants. Geography of animal Communities – Evolution of Animals, Characteristics of Animals, Environmental adaptations of animals and classifications.

UNIT-III. Effect of Physiographic, Climatic and edaphic forms on plants. Major Biomes of the world. Zoo geographical regions of the world.

UNIT-IV. Anthropogenic Effects on plants and animals. Impact of pre-agricultural. Man impact of domestication, Industrialization and Urbanization.

Reference:

1. Mathur, H.S. (1998): Essentials of Biogeography, Pointer Publishers, Jaipur.
2. Pears Nigel (1985): Basic Biogeography, Longman, London, New York.
3. Tivy Joy (1992): BioGeography, A study of plants in the ecosphere, Oliver and Boyd, Edinburgh
4. Simmons T.G (1974): Biogeography:Natural and Cultural, Arnold Heinmann, London.
5. Darlington P.J (1990). Zoogeography.The Geographic Distribution of animals, Wiley and Sons, New York.

6. Lies .J (1974): Introduction to Zoo Geography, Mcmilan, London.
7. Bhattacharya N.N (2005) Bio-Geography, Rajesh publication, New Delhi.