

Shri Vishwanath P. G. College Kalan, Sultanpur

(Affiliated)

DR. RAM MANOHAR LOHIA AVADH UNIVERSITY, AYODHYA

Structure of Syllabus for the Program: M.A.

Subject: MA Geography



Course Code : A110701T : Core

Year : Second

Course Title : HISTORY OF GEOGRAPHICAL THOUGHT

Semester : Third

Unit I.

Origin and development of philosophy of geography; Scientific Character of Geography in the Classical Greek Period. Contributions of Thales, Anaximander, Hecataeus, Herodotus, Eratosthenes, Strabo and Ptolemy.

Unit II.

Development of geographical thought during Dark Age; General characteristic of Contribution of Arabs in scientific geography; Al Khwarizmi, Al Masudi, Al Biruni and Ibn Khaldun.

Unit III.

Concepts in geography; Environmental Determinism, Possibilism and Neo-determinism and their present relevance in geography. Development of Dualism in geography: Physical verses Human Geography and Regional verses Systematic Geography.

Unit IV.

Development of Modern Geography: Contributions of German School Humboldt, Ritter, Ratzel, Contribution of French School-Vedal-De-La Balche. Contribution of British School-Meckinder the relevance of "Heartland theory in present day-Geo-political order.

Books Recommended:

1. Ali, S.M., Arab Geography, AMU., Press, Aligarh.
2. Anuchin, V., Directions in Geography.
3. Bunge, W., Theoretical Geography.
4. Claval, P., Epistemology and History of Geographical Thought, in progress in Human Geography, Vol.4.
5. Dickinson, R.E., The Makers of Modern Geog., London, 1969.
6. Dickinson, R.E., The Making of Modern Geography.
7. Davis, V.K., Conceptual Revolution in Geography.
8. Freeman. T.A., A Hundred Years of Geography: Introduction to Behavioral Geography.
9. Amedas, Douglas, An Introduction to Scientific Reasoning in Geog., John Wiley, 1971.
10. Hartshorne, R., Perspectives on Nature of Geography, Rand MacNally, 1959
11. Johnstone, R.J., The Future of Geography, Methuen, London, 1988.

Course Code : A110702T : Core

Year : Second

Course Title : REGIONAL DEVELOPMENT & PLANNING

Semester : Third

Unit I.

Concept and nature of Regional Planning, Types of Planning, Principles and Objectives of Regional Planning; Approaches of Regional Planning.

Unit II.

Concept of Regions, Attributes of Region, types of Regions, formal and functional regions, Methods and techniques used in the regionalization of formal and functional regions, Planning Regions in India.

Unit III.

Theories of Regional Development (Albert O. Hirschman, Gunnar Myrdal, John Friedman, W.W. Rostow, Dependency Theory of Environmental issues in Regional Planning.

Unit IV.

Global Economic Block, World Regional Disparities, Regional Imbalances/ Disparities in India- Causes and consequences; Regional Development and Social movement in India.

Books Recommended:

1. Bhat, L.S., 1973, Regional Planning in India, Statistical Publishing Society, Calcutta.
2. Chandana, .C., 2000, Regional Planning, Kalyani Publishers Ludhiana.
3. Chand, M., Puri, & V.K., 1983, Regional Planning in India, allied Publishers, New Delhi.
4. Friedman., J., & Alonso, W. 1967, Regional Development and Planning - A Reader, MIT Press, Cambridge Hars.
5. Glassom, 1980 Regional Planning, Hutchinson, London.
6. Glikson, A., 1955, Regional and Development, Netherlands, Foundation of International Corrop. London.
7. Mishra, R.P., 1969. Regional Planning Concepts, Techniques and Policies, University of Mysore, Mysore.
8. Mishra, R.P., et.al., 1974. Regional Development and Planning in India. Institute of Development Studies, Mysore.
9. Ra, V.L.B., 1960. Regional Planning, Asia Publishing House, New Delhi.
10. Kant Surya et. al (eds).: Reinventing Regional Development, Rawat Publication, Jaipur and New Delhi.

Course Code : A110703T : Core

Year : Second

Course Title : GEOGRAPHY OF RESOURCES

Semester : Third

Unit I.

Nature, Scope and significance of geography of resources. Definition and concept of natural resources, Classification of resources.

Unit II.

Characteristics of natural resources: Resources conservation and management with reference to land and forest resource.

Unit III.

Water resources-Hydrologic Cycle, Fresh water resources, surface and underground water supplies, problems of water supplies. Marine resources, major fishing grounds of the world, fish distribution and exploitation. India's natural resource: water resource, conservation and management and its utilization.

Unit IV.

Energy resources- Conventional energy resources-coal, petroleum, non-conventional- solar and geothermal energy.

Books Recommended:

1. Alexander, J.W., Economic Geography, New Jersey, 1965.
2. Ali, S.A., Resources for Future Economic Growth, New Delhi, 1979.
3. Dehends, William, W., The Dynamics of Natural Resource Utilization in D. Meadow (Ed.), Massachusetts, 1972.
4. Duncan, G., Resource Utilization and Conservation, New York, 1975.
5. Earl, D.K., Forest Energy and Economic Development, Oxford, 1975.
6. Ranner, G.T., Conservation of Natural Resources, New York, 1942.
7. Zimmerman, E.W., Introduction of World Resources (edited by H.L. Honker, The Ohio State University, New York, 1964.
8. Zimmermann, E.N., World Resources & Industries, New York.

Course Code : A110704T : Fifth Elective

Year : Second

Course Title : BIO GEOGRAPHY

Semester : Third

Unit I.

Meaning and scope of Biogeography, Biogeography and related sciences, Approaches to the study of Biogeography, relevance and significance of Biogeography, environmental factors affecting distribution of flora and faunas.

Unit II.

Soils as an ecological factor, Soil forming factors, Soil components, Soil properties, Soil profile and horizon, Soil erosion and conservation, concept and types of ecosystem.

Unit III.

Biomes with special reference to Tropical rain forests, Tropical Monsoon deciduous forest, Tropical and Temperate grass lands biomes, zoogeographical regions.

Unit IV.

Evolution, Dispersal and distribution of plants, forest consevation in India, wild life conservation in India, Biodiversity, concept types and importance.

Books Recommended:

1. Simmon, I.G., Biogeography: Natural and Cultural, Longman, London 1974.
2. Watts, David, Principles of Biogeography, London.
3. Odum, eugene P., Fundamentals of Ecology, Philadelphia.
4. Newbigin, M., Plant and Animal Geography, London.
5. Cloudsley- Thompson, J.L., Terrestrial Environment, London.
6. Allee, W.C., & Schmidt, K.P., Ecological Animal Geography, New York.
7. Jones, .L., Biogeography: Structure, Process Pattern and Change within a Biosphere.
8. Mathur, M.S., Essentials of Biogeography, New York.
9. Darlington, P., Zoogeography, New York.
10. Huggett, R.J., Fundamentals of Biogeography, Routledge, U.S.A, 1998.
11. Cox, C.. and More, P.D., Biogeography: An Ecological and Evolutionary Approach, London, 2000.

Course Code : A110705T : Fifth Elective
Year : Second
Course Title : POPULATION GEOGRAPHY
Semester : Third

Unit I.

Nature, Scope, significance, approaches to study Population Geography, recent trends, Sources of population data; The Census, Vital Registration and other Sources, Problems relating to compatibility of data, Population distribution and density in the world.

Unit II.

Population Dynamics: Growth, fertility and mortality measurement, Theories of Growth: Malthusian theory, Social Capillary and demographic transition theory. Migration: Types, determinant and consequences, pattern of international migration. Theories of Migration: Ravenstein and Lee's laws.

Unit III.

Population Composition/ Characteristics: Sex Composition - measures, determinants and distribution. Declining Sex Ratio, Age Composition: various systems of age groupings, determinants and distribution; Ageing of population, Occupational structure, determinants of work force, types of workers.

Unit IV.

Population and resources: Over population, Under population, Optimum population, Ackerman's scheme of Population-Resource Regions, population problems with special reference to India: food, housing, unemployment and poverty, population policies, National Population Policy (NPP), 2000.

Books Recommended:

1. Bhende, A.A., & Kanitkar, (2014), Principles of Population Studies, Himalayan Pub. H., Mumbai.
2. Bogue, D.J., Principles of Demography, New York, 1969.
3. Chanda, R.C., Geography of Population: Concepts Determinants and Pattern, Kalyan Pub. Ludhiana, 2014.
4. Clarke, J.. Population Geography, Oxford, 1981.
5. Coontz, S.H. Population Theories and the Economic Interpretation.
6. Garnier, B.J., Geography of Population, Longman Group Limited, London, 1966.
7. Jones, H.R., A Population Geography, London, 1981.
8. Siddiqui. F.A., Regional Analysis of Population Structure, New Delhi. 1984.
9. Smith, T., Fundamentals of Population Study, New York, 1960.
10. Trewartha, G.T., A Geography of Population: World pattern, New York, 1969.
11. Wood, R. Population Analysis in Geography, Longman, London, 1979.
12. Zelinsky, W.A., Prolong to Population Geography, Prentice Hall, New Jersey, 1966.

Course Code : A110706P : Fifth Elective

Year : Second

Course Title : FIELD TRAINING (TOUR REPORT)

Semester : Third

The student of MA./M. Sc. (Final) III Semester are required to study and submit their tour reports for evaluation and viva voce examination. The duration of the main fieldwork will be up to two weeks. The fieldwork will cover the following region/regions of India assigned by the department during the academic year. The class room teaching would include preliminaries of socio-economic and environmental surveys to equip the students for the field work and tour report.

1. The Deccan Region.
2. The Konkan/Malabar Coast
3. The Sunder Ban Delta
4. The Mahanadi Delta
5. The Krishna Delta
6. The Cauvery Delta
7. The North Eastern States
8. The North/North Western States
9. The Central India

The T.A, and D.A. of the staff accompanying with students will be paid by the institution.

Books Recommended:

1. Singh, R.L., (Ed.) India - A Regional Study.
2. Spate, O.H., India - A Regional Geography.
3. Wadia, D.N., Geology of India.
4. M.S. Krishna, Geology of India.
5. Ray and Chaudhary, Soils of India.
6. Ahmad, E., Coastal Geomorphology.
7. Ahmad, E., Some Aspects of Indian Geography.

Course Code : A110707P : Fifth Elective :Course Title : GEOGRAPHIC INFORMATION SYSTEM (GIS)

Semester : Third

Fundamentals of GIS

Introduction of GIS: Definition, Information technology in geography, history and development in GIS, components of GIS, advantages of GIS over traditional techniques. Application of GIS in geographical studies.

Geographic data - human cognition of the spatial world, maps and other representation of the world. Types of information in a digital map: scale projection and georeferencing
Spatial Data - Geographic data and information, spatial - non-spatial data. GIS data formats, raster and vector data, their merits and demerits.

Lab Work:

Lab I: Introduction to Arc View's Modular Structure Task

Set I : Basic software and operating system concept, Task Set 2: Introduction to Arc View

Lab II: Projection and Cartography

Task Set I: Basic concepts of projection, Task Set 2: Concept of the theme in Arc View, Task set 3: Cartographic design concepts

Lab III: Vectore Data Model:

Task Set I: The vector data model: points. Task Set 2: The Vector data model: Lines and Polygons. Task Set 3: Joining tabular data to spatial data. Task Set 4: Creating Visualization

Lab IV: Digitizing and Data Automation

Task Set 1: Digitizing in Arc View

Task Set 2: Creating a map.

Task Set 3: Creating a table and entering data

Lab V: Geo-coding: Matching addresses with locations

Task Set 1: Geo-coding

Lab VI: Spatial Analysis

Task Set 1: Classification

Task Set 2: Distance measure and Buffers

Books Recommended:

1. Cromley, R.G., Digital Cartography, Prentice Hall, N. Jersey, 1992
2. Fraser Taylor, D.R., "Geographical Information System", Pergmon Press, U.K., 1991
3. Maquire, D.J, Good Child, M.F., and Rhind, D.W., "Geographical Information Systems: Principles and Application", Taylor and Francis Publication Washington, 1991.
4. Monmnier, M.S., Computer Assisted Cartography: Principles and Prospects, P. Hall, New Jersey, 1982.
5. Peuquet, D.J., and Markle, D.F., "Introductory Reading in Geographical Information System", Taylor and Francis Publication, Washington, 1990.
6. System", Taylor and Francis Publication, Washington, 1990.
7. System", Taylor and Francis Publication, Washington, 1990.

Shahab Fazal, GIS Basics, New age International Publisher,

Course Code : A110801T : Core

Course Title : INDIA: PHYSICAL GEOGRAPHY

Unit I. Physiography: Stratigraphy of India- A Brief Review. Bases of Physiographic Divisions of India; Evolution of Extrapeninsula: Its Geological Structure, Relief and the Evidences Regarding its Present Day Evolution; Peninsula: Structure and Relief; Indo-Gangetic Plain: Evolution, Structure and Relief; Coasts: Western Coast and Eastern Coast.

Unit II. Drainage: Evolution of Extra-peninsular Drainage- A Critical study of Indo-Brahm Theory: The Ganga River System, System and Pattern of Peninsular Drainage. The Godavari River System; differences between the Himalayan and Peninsular Drainage.

Unit III. Climate: Origin and Mechanisms of Indian Monsoon- A Critical Review of Classical and Modern Views Regarding its Origin: Effects of El-Nino on Indian Monsoon. Koppen's and Thornthwaite classification of Climate.

Unit IV. Soils and Forests: Problems of Soil- Soil Erosion and Conservation; Saline and Alkaline Soils- their measures of reclamation; Problems of Indian Forestry; Forest Development Programs.

Books Recommended:

1. Spate, O.H.K., & Learmonth, A.T.A., India & Pakistan, London.
2. Puri, G. S., Indian forest Ecology, New Delhi.
3. Ray Chaudhary, S.P. Land and soil, New Delhi.
4. The Gazetteer of India Vol.1.
5. Krishnan, M.S., Geology of India and Burma
6. Das, P.K., The Monsoon, New Delhi
7. Wadia, D.N., Geology of India, London.

Course Code : A110802T : Core :Course Title : ECONOMIC GEOGRAPHY
Semester : Second

Unit I.

Meaning and scope of Economic Geography. Approach to the study of economic geography, recent trends, changing relationship between Economics and Economic Geography, Economic Development, Indicators of Socio-Economic Development, Rostow's Model of Stages of growth and development.

Unit II.

Economic Activities: Characteristics and importance of Primary, Secondary and Tertiary economic activities. Classification of Agricultural system- Whittlessey's classification and Von-Thunen model of Agricultural Location.

Unit III.

Manufacturing Activities: Significance and types, Factors of Industrial Location, Iron and Steel Industry, Cotton Textile Industry. Theories of Industrial Location; Weber's and Smith models.

Unit IV.

Energy, Resources: Conventional Energy resources-Coal, Petroleum, Non-conventional energy resources-Solar Energy, World Energy Crises, International Trade: Problems and Prospects, World Trade Organization (WTO), Central Place Theories of Christaller and Losch.

Books Recommended:

1. Alexander, J.W., Economic Geography.
2. Boesch, H., A Geography of World Economy.
3. Brian, J. L., Berry et al., The Geography of Economic Systems.
4. Barlow, M. H. & R. G. Newton., Patterns and Processes in Man's Economic Environment.
5. Chisholm, M., Geography and Economics.
6. Jones, C. F., Economic Geography.
7. Grigg, D. B., Agricultural Systems of the World: An Evolutionary.
8. Lloyd, P. & P. Dickens., Location in Space; A Theoretical Approach to Eco. Geo.
9. Strahler, A. N. & A. Strahler., Geography and Man's Environment.
10. Thoman, R. S. & E. C. Conking., The Geography of Economic Activity.
11. Thoman, R., "Econ. Geog." in International Encyclopedia of S. Science.
12. Miller, E. & E. Willard., A Geography of Manufacturing.
13. Mc. Carty, H. & J. B. Lindberg., A preface of Economic Geography.
14. Von Royan, W., Fundamentals of Economic Geography.
15. William Von Royen, et. al., Fundamentals of Economic Geography.
16. Zimmerman, E. W., World resources and Industries.
17. Hartshorn, T. A., Economic Geography.
18. Majid Hussian, Economic Geography.

Year : First

Semester : Second

Unit I.

Meaning and scope of Environmental Geography, Relations of environmental geography with other science, meaning, component and types of environment, approaches to the study of man-environment relationships.

Unit II.

Ecosystems, meaning, types and components of ecosystem, function of ecosystem, trophic levels, food chain and food webs. Ecological pyramid and flow of energy. Bio-Geo-Chemical Cycles-Nitrogen cycle, Carbon cycle and Hydrological cycle.

Unit III.

Environmental Degradation and Pollution: concept and types of Environmental Degradation, causes of Environmental Degradation, sources and types of pollution, Air Pollution, Adverse affect of air pollution on weather and climate, ozone depletion, green house effects, effects on human health, water pollution; surface and ground water, adverse effects on human health.

Unit IV.

Environmental Planning and Management: Environmental management-methods and approaches; Ecological basis of environmental management- Ecological principles; Survey, evaluation, preservation and conservation of resources. Environmental impact Assessment.

Books Recommended:

1. Chanda, R.C., 1998 Environmental Awareness, Kalyani Publishers, New Delhi.
2. Gaur, S., and Chandrashekhar, T., 2006, Global Environmental Crisis, Book Enclave, Jaipur.
3. Gupts, P.D., 2003, Environmental Issue for the 215 Century, Mittal Publication, New Delhi.
4. Morris, D., Freeland, J., Hinchliff, S., Smith, S. (ed.), 2003, Changing Environments, Pd. John Wiley and Sons Ltd., The Open University, U. K.
5. Park, C. C., 1980, Ecology and Environmental Management, Butterworths, London.
6. Md Noor., Perspectives in Agricultural Geography. New Delhi.
7. Ali Mohammad. Food Production and Food Problem in India, N. Delhi.
8. Krishna, D., The New Agricultural Strategy, Delhi, 1971.
9. Bansil, B. C., Agricultural Problems in India, Delhi, 1971.
10. India 2004, Ministry of Information and Broad Casting, Govt. of India, New Delhi.
11. Survey of Agriculture and Survey of Industry, 2003, Hindu Publication.
12. C. B. Memoria, Economic and Commercial Geography of India.
13. Mahesh Chand and V.V. Puri, Regional Planning in India.
14. Paul Claval, An Introductions to Regional Geography.
15. Johnstone, R. J., Geography and Geographers Since 1945.
16. Sinha, B. N., Industrial geography of India.
17. Sant, M., Industrial Movement and Regional Development.

Course Code : A110804T : Third Elective

Year : First

Course Title : GENERAL GEOGRAPHY

Semester : Second

Unit I.

Basic Concepts: Definition of Geography; General Geography, Regional Geography, Systematic Geography; Solar System; Motions of Earth-Rotation and Revolution; Concept of Latitude and Longitude; International Date Line; Calculation of Time.

UNIT II

Components of Earth System: Atmosphere, Lithosphere, Hydrosphere, Biosphere, Composition and Structure of Atmosphere; Interior of the Earth; Weather and Climate; Wind Circulation; Hydrological Cycle; Ecosystem, Food Chain and Food Web.

Unit III.

Regional Geography: Concept of Region; Components of Natural Regions; Natural Regions of the world; Man and Environment Relationship in Equatorial Region, Temperate Region and Polar Region.

Unit IV.

Environment: Concept of Environment- Physical and Cultural Environment; Hazards and Disasters, Social and Economic Disaster; Global Warming and Climate Change.

Books Recommended:

1. Hussian Majid, Fundamentals of Physical Geography, Rawat Pub, New Delhi.
2. Singh Savindra- Environmental Geography, Prayag Pustak Bhawan, Allahabad.
3. Blij H. E. Dc Geography, Regions and Concept, John Wiley and Sons.
4. Lal D. S. Climatology, Sharda Pustak Bhawan, Allahabad.
5. Gohchenglenong, Certificate Physical and Human Geography, latest addition.
6. Singh Savindra & Singh, J, Disaster Management- P. Pub., Allahabad.
7. Campbell J. B., Introduction to Remote Sensing, G., Ford press.

Course Code : A110805T : Third Elective:Course Title : DISASTER MANAGEMENT
Semester : Second

Unit I.

Disaster-meaning and concept; hazards, risk and vulnerability. Disaster: its management- plants, managing environment. Disaster its effect on different social groups; poverty and vulnerability. Disaster management: prevention, preparedness and mitigation.

Unit II.

Disaster- classification of disaster; Natural disaster - earthquake, floods, drought and global warming; causes, consequences and mitigation. Natural disaster - Examples from India.

Unit III.

Disaster- man made disaster, their types - technological and industrial disasters. Social disasters: causes, consequences and mitigation. Man made disasters - Examples from India.

Unit IV.

Disaster management - relief and response; reconstructin and rehabilitation. Disaster Strategies for survival, types of strategies. Importance of information in disaster management, significance of remote sensing and GIS. Planning in the context of disaster management.

Reading List:

1. Government of India. (1997) Vulnerability Atlas of India. New Delhi. Building Materials & Promotion Council, Ministry of Urban Development, Government of India.
2. Kapur, A. (2010) Vulnerable India: A Geographical Study of Disaster, Sage Pub. New Delhi.
3. Modh, S. (2010) Managing Natural Disaster: Hydrological, Marine and Geological Disaster. Delhi.
4. Singh, R. B. (2005) Risk Assessment and Vulnerability Analysis, IGNOU, New Delhi.
5. Singh, R. B (ed), (2006) Natural Hazards and Disaster Management: Vulnerability and Mitigation, Rawat Publication, New Delhi.
6. Sinha, A. (2001). Disaster Management: Lessons Drawn And Strategies for Future, New United Press, New Delhi.
7. 7 Stoltman, J. P. et al. (2004) International Perspectives on Natural Disasters, Kluwer Academic Publications.
8. Singh Jagbir (2007) "Disaster Management Future Challenges and Oppurtunities" 2007. Publisher- I. K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India.

Course Code : A110806P : Fourth Elective :Course Title : ADVANCE QUANTITATIVE TECHNIQUES

Semester : Second

Correlation analysis: Karl Parson's Product moment, Spearman's Rank Correlation, Coefficient and their limits; test of significance on correlation co-efficient, scatter diagram.

Simple linear regression and multiple regression analysis: regression lines and residuals; Methods of constructing regression lines, properties of least square estimates, co-efficient of determination.

Test of significance: Chi-square test, student 't' test, variance estimate test.

Test for Distributions in Space: nearest neighbour analysis; spacing of settlement.

Books Recommended:

1. Hammond/Mc Cullah., Quantitative Techniques in Geog, Oxford, 1974.
2. Gregory, S., Statistical Method for Geography, Longman, 1975.
3. Berry, B.J.L., & Marble, D.F., Spatial Analysis: A Reader in Statistical Geography, New Jersey, 1968.
4. Cole, J.P., & King, C.A.M., Quantitative Methods in Geography, New York, 1968.
5. King, L., Statistical Analysis in Geography, New Jersey.
6. Johnson, R.J., Multivariate Statistical Analysis in Geography, 1978.
7. Elhance, D.N., Elementary staistics.
8. Pal, S.K., Statistical Methods in Geography.
9. Alvi, Zamiruddin., Statistical Geography.

Course Code : A110807P : Fourth Elective Course Title : REMOTE SENSING
Year : First Semester : Second

- Stereoscopic Vision Test.
- Format and stereoscopic Orientation of Aerial Photographs.
- Determination of scale and Stereoscopic area.
- Determination of Principal Point and Conjugate Principal Points, Direction of Flight Line and Air Base.
- Calculation of Photographic coverage for a Planning Area.
- Mapping Land Use change Detection.
- Height Determination Methods
- Land use Measurement Methods
- Preparation of Landcover and Land use Map
- Interpretation of Aerial Photographs.
- Population Census with Aerial Photographs.

Books Recommended:

1. American society of Photogrammetry: Manual of Photographic Interpretation, Banta Pub. Co., Wisconsin, 1960.
2. Avery, T.E., Interpretation of Aerial Photographs, Minneapolis, 1962.
3. Barrett, E.C., & Curtis, L.F., Introduction of Environ. Remote Sensing, 1976.
4. Dury, G.M., Map Interpretation, Isaac Pitman, London, 1952.
5. Cunan, R.J., Principles of remote sensing, London, 1985.
6. Hord, R.M., Remote sensing: Methods and Applications, N.Y., 1986.
7. Lender, D.R., Aerial Photographic, McGraw Hill, N.Y., 1960.
8. Lunder, D., Aerial Photography Interpretation: Principles and applications, McGraw Hill, N.Y., 1959.
9. Lilles & Klefer, Remote sensing & Image interpretation.
10. Reeves, .G.(Ed.) Manual of Remote sensing (Vol.2) Virginia, 1975.
11. Sabins, F.F., Remote Sensing: Principles & Interpretation. 1982.
12. Smith, H.T.V., Aerial Photographs & their Application, N.Y., 1943.
13. Spurs, S.H., Photogrammetry & Photo Interpretation, N.D., 1960.
14. Stersheew, A., Aerial Photography.
15. Thomas, E.A., Interpretation of Aerial Photographs, Minnesota.
16. Tomar, M.A., & Maslakar, A.R., Aerial Photographs in Land use & Forest Survey, Dehradun, 1974.
17. Usill, G.W. (Revised by Hearn, G.S.G.) Pract. Surveying, London, 1960.
18. White, LP., Aerial Photography & Remote Sensing for soil survey.
19. James, B. Campbell, Introduction to Remote Sensing-2nd Ed. Taylor & Francis, London.

Year : First Semester : First

Course Code : A110901T : Core : Course Title : Advance Geomorphology

Unit I. Fundamental Concepts in Geomorphology:

Geological structures and landforms

Principles of uniformitarianism

Cycle of Erosion - concepts of Davis and Penck

Unit II. Earth Movements:

Isostasy-Decline of Isostasy; Views of Airy and Pratt

Continental Drift Theory-concept of Wegener

Plate Tectonics-concept and related views

Mountain Building Theories-concepts of Kober, Daly and Holmes.

Unit III. Exogenic Processes:

Weathering and soil formation

Dynamics of fluvial process and resulting landforms

Dynamics of glacial process and resulting landforms.

Dynamics of Aeolian process and resulting landforms.

Unit IV. Applied Geomorphology:

Terrain classification and its application* Oil exploitation

Engineering projects

Drainage network analysis-Stream order, Sinuosity index and Drainage density

Book Recommended

1. Alam Clowes & Comfort., Processes and Landforms.
2. Blooms, A.L., Geomorphology-A Systematic Analysis of late Cenozoic landforms.
3. Cotton, Geomorphology,
4. Dowie, Isostasy.
5. Jolly., Surface History of the Earth.
6. Ollier, C.D., Weathering.
7. Sparks, B.W., Geomorphology.
8. Steers, J.A., Unstable Earth.
9. Strahler, A.H. & Strahler, A. H., Elements of Physical Geography.
10. Thornbury, W.D., Principles of Geomorphology.
11. Von Engeln., Geomorphology.
12. Wooldridge, S.W., & Morgan, R.S., An Outline of Geomorphology.

Year : First: Semester : First

Course Code : A110902T : Core :Course Title : ADVANCE CLIMATOLOGY

Unit I. Nature and scope of climatology and its relationship with meteorology.

The atmosphere: Structure and composition, isolation, heat-balance of the earth.
Distribution of temperature: Temporal, vertical and horizontal, Green House effect.

Unit II. Atmospheric Equilibrium: Stability and instability, potential temperature and evapo-transpiration. Distribution of atmospheric pressure and winds: Jet streams - their origin, types and distribution, monsoon winds.

Unit III. Climatic Phenomena: Air masses and fronts, origin, growth, classification. Frontogenesis, types and weather associated with fronts. Cyclones, and anticyclones, Global warming.

Unit IV. Climatic Classification: Koppen's Thornthwaites- A critical appraisal of each classification, Climates of the World: Tropical, Temperate, Desert, Interpretation and generation of climatic information, soils, agricultural activities.

Book Recommended

1. Barry & Perry., Synoptic Climatology.
2. Blair, T.A., Climatology-General and Regional.
3. Chorley, R.J. & Barry, R.G., Atmospheric Weather and climate.
4. Donn, W.L., Meteorology.
5. Jackson, I.J., Climate, Water and Agriculture in the Tropics, 1977.
6. Kendrew, W.G., Climes of the Continents.
7. Lal, D.S., Climatology.
8. Mather, J., Climatology: Fundamental and Application, 1974.
9. Patterson., Introduction to Meteorology.
10. Rama Sastery, A.A., Weather & Weather fore casting.
11. Rummey, G., Climatology and the world's climate.
12. Stringer., Foundation of Climatology.
13. Stringer., Techniques in Climatology.
14. Trewartha. G.T., An Introduction to Climate.

Year : First: Semester : First

Course Code : A110903T : Core: Course Title : ADVANCE OCEANOGRAPHY

Unit I.

Oceanography-nature, scope and development, distribution of land and water, Ocean bottom topography, bottom relief of Pacific, Atlantic and Indian Ocean.

Unit II. Characteristics of Ocean water: temperature - distribution, salinity - composition, source and distribution, density of sea level.

Unit III. Movement of ocean water: currents - causes and character, currents of Atlantic, Indian and Pacific Ocean, Waves, tides and theories of origin.

Unit IV. Ocean deposits and coral reefs: sources, Types and distribution of ocean deposits, coral reefs-formation, condition of growth, type of theories of origin.

Book Recommended

1. Davis, R.J.A. 1986, Oceanography - An Introduction of the Marine Environment, Win C. Brown, Iowa.
2. King, C.A., Oceanography for Geographers, Edward Arnold Pub.
3. Murray, S.J., 1913, Ocean, A General account of the Science of the sea, Thorton Butter Worth, London.
4. Siddartha, K. 1999, Oceanography, A Brief Intoduction, Kisalaya Pub, Pvt. Ltd., New Delhi.
5. Singh, S. 2002, Physical Geography, Prayag Pub, Allahabad.
6. b. Stahler. A. N. Stahler A. M., 1997, Geography and Man's Environment, John Wiley and Sons, New York.
7. Thurman, H. V., 1978, Introduction to oceanography, Charles E. Merrill Pub Co., London.
8. Weyl, P. K. 1970, Oceanography an Introduction of the Marine Environment, John Wiley and Sons Ltd., London.

Unit I.

Concept and scope of rural geography: different approaches to study rural Geography, concept and significance of rural development: Indicators of rural development.

Unit II. Rural Settlement: Definition and characteristics; Types and patterns of rural settlements and their distribution with special reference to spacing, rural house type, based on building materials, size and shape.

Unit III. Rural infrastructure facilities and amenities: New Agricultural technology; Rural transportation, rural education, rural industries and rural marketing.

Unit IV. Critical review of rural development strategies in India: Integrated Rural Development Programme (I..D.P.), Community Development Programmes, Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), National Rural Health Mission (NRHM),

Books Recommended

1. Singh Kartar., Rural Development: Principal, Policies and Management.
2. Maheshwari, R.S, Rural Development in India.
3. Clout, S.D., Rural Geography.
4. Hussain, Majid., Agricultural Geography, New Delhi.
5. Bell, G.(Ed). Strategies for Human Settlements: Habitat and Environment.
6. Chisholm, M., Rural Settlement and Land Use.
7. Singh, R.L., et. al: Readings in Rural Settlement Geography.
8. Singh, K.N.(Ed.) Rural Development in India: Problems, Strategies and Approaches.
9. Wanmali, Sudhir., Service Centres in Rural India.
10. Mishra, H.N.(Ed.) Rural Geography.
11. Prasad, R. & Sarkar S., Rural India-Socio-Political development, Vol. I & II, Global Vision Pub. House, New Delhi.
12. Khullar D.R. India- A Comprehensive Geography, Kalyani Pub. New Delhi.

Unit I.

Internal Structure of Cities:- Meaning, scope and significance of Urban Geography; urban morphology and land use patterns, classical models of urban growth and evolution of functional zones - Burgess's Concentric Zone Theory ; Hoyt's Sectoral Model; Harris and Ullman's multiple Nuclei Model - formulation, salient features and critical evaluation of these models; CBD - meaning, internal structure, characteristic features and method of its delineation.

Unit II. Surrounding Relations:- The urban economic base- terminology, concepts, geographic qualities of the basic, non - basic concepts; the city's spheres of influence (Umland)-methods of its determination; rural-urban fringe. conceptual explanation, internal structure, characteristic features.

Unit III. Settlement Theories and Concepts:- The study of Walter Christaller's Central Place Theory and August's Losh settlement theory in the following heads-Initial formulation of the model and later developments; Salient features of the model and its applicability; Loch's Theory of settlement-Rank-size Rule and Law of Primate City.

Unit IV. Urbanization:- Urbanization as a process of transformation-demographic process, economic process and socio-cultural process. Spatial pattern and trends of urbanization in India, patterns of urban growth in India-decadal, regional, different size classes of towns (I-VI).

BOOKS RECOMMENDED:

1. Alam, S.M., Hyderabad-sendarabad Twin Cities, Asia Publishing House, Bombay,
2. Barry, B.J.L and Horton, F.F., Geographic perspectives on Urban Systems, Prentice Hall, Englewood Cliff, New Jersey, 1970.
3. Beaujeu Garnier, J., Chabot, G., Urban Geography, London, 1969.
4. Carter, Harold, The Study of Urban Geography, Edward Arnold Publishers, London.
5. Dickinson, R.E., 1964., City and Region, Routledge, London.
6. Gibbs, J.P., Urban Research Methods, New Jersey, 1961.
7. Hall, T., Urban Geography, London, 1988.

Course Code : A110906P : Second Elective: Course Title : CARTOGRAPHY

- History, Development and Significance of Cartography.
- Representation of Relief and Climatic Data:
- Depiction of Relief: Drawing of Profiles-Serial, superimposed, composite and projected; Profiles and their usefulness in studying landforms.
- Gradient and Slope: Significance, calculation of gradient, scale of slopes
- Methods of slope analysis: Wentworth, Smith, Henry Raisz and Robinson
- Hypsographic, Climographic and Altimetric Frequency curves
- Representation of Climatic Data: Climograph, Hythergraph and Rainfall Dispersion Diagram.
- Representation of Statistical Data:
- Thematic Mapping- Choropleth and Isopleth; Lorenz Curve.

BOOKS RECOMMENDED

1. Campbell, J., Introductory Cartography, Prentice Hall, Inc., Englewood Cliff, New Jersey, 1984.
2. Cuff, D.J., & Mattson, M.T., Thematic Maps, their Design and Production, Mathuen, New York., 1982.
3. Robinson, A.H., & others., Elements of Cartography, John Willey and sons, New York (New edition).
4. Archer, J.E., & Dalton, T.H., Fieldwork in Geography, London.
5. National Atlas and Thematic Maps Organization (NATMO): National Atlas of India, Calcutta.
6. Monkhouse, F.J., Maps and Diagrams, Methuen & Co., London, 1967.

Course Code : A110907P : Second Elective :Course Title : FIELD STUDY REPORT

Field study Report will be prepared by the students under guidance of the teachers. The teacher will guide proper procedure for the Field Study Report on the basis of the following points.

1. Selection of the problem.
2. Aims and objectives.
3. Hypotheses
4. Selection of the study area.
5. Methodology:
 1. Preparation of Questionnaire
 2. Personal Interviews
 3. Preparation of survey chart
 4. Tabulation and calculation.
6. Data interpretation and preparation of Field Study Report.

The students will select any village or a sector of urban centres such as slum, popular settlements etc. for Field Study Report. The Report should be prepared in about 50 pages.

Course Code : A111001T: Core

Year : Second

Course Title : AGRICULTURE GEOGRAPHY

Semester : Fourth

Unit I.

Aims, objectives and scope of Agricultural Geography, Basic concepts, Historical Perspective and recent trends. Approaches to the study of agricultural geography-regional and systematic approach, Ecological and Commodity approach. Spread of agriculture in the world. Various agricultural techniques-crop combination, crop diversification, agricultural efficiency etc.

Unit II.

Influence of major factors on the performance of agriculture. Whittlessey's classification of agricultural systems of the world-problems and prospects of agriculture and its economic impact on regions of the world.

Unit III.

Concepts of Land use, Agricultural land use-land capability classification and land use planning for agricultural development. Agricultural Regionalization. Land Use Location Theory-Von Thunen and its applicability; Modern Theories of Agricultural Location: Optimum Physical and Economic Conditions and Limits.

Unit IV.

Green Revolution in India, impact of green revolution in India, Green Revolution and regional imbalances. Problems of India Agriculture, Measures for Agricultural Development. Concept of second green revolution in India.

Books Recommended:

1. Duckhan, A.N. and Masfield, G.B., Farming Systems of the world, London, 1970.
2. Griggs, D.G., An Introduction to Agricultural Geography, 1964.
3. Husain, Majid., Agricultural Geography, New Delhi.
4. John, R, Tarrant, Agricultural Geography.
5. Mohammad, A., Food Production and Food Problem in India, New Delhi.
6. Mohammad, N., Perspectives in Agricultural Geography, New Delhi.
7. Morgan, W.B. and Munton, P.J.C. Agricultural Geography. London, 1971.
8. Shafi, M., Agricultural Geography of South Asia, Macmillon, New Delhi 2000
9. Shafi, M., Agricultural Geography, Dorling Kindersley, New Delhi, 2006
10. Singh, J. and Dillon, S.S., Agricultural Geography, 1970
11. Symons, L., Agricultural Geography, London, 1967
12. Wrigley, G., Tropical Agriculture, 1979.

Course Code : A111002T : Core Course Title : POLITICAL GEOGRAPHY

Year : Second Semester : Fourth

Unit I.

Introduction to Political Geography: Definition and Historical Development of Political Geography. Recent Development in Political Geography. Distinction between Geo-Politics and Political Geography. Approaches to the Study of Political Geography; Hortshorn's Functional, Whittesey's Landscape and Joni's Unified Field theory.

Unit II.

Concept and State, Nation and Boundary: Definition and Components of State. Definition of Nation and Nation State. Nationalism/Nation Building. Geographical factors of state: Physical, spatial and human & Economic. Definition of Boundary and Frontier and their Classification.

Unit III.

Global Strategies Models and Colonization: Meckinder's Geographical Pivot and Heartland Model, Spykman's Rim Land Model. Critical Assessment of Heartland and Rim Land Model and their Relevance to World" Geo politics. Concept of Colonization, Factors and Styles of Colonization. Neo Imperialism: Political, Economic and Cultural Mechanism

Unit IV.

Political Geography of India and Geography of Election: India Under Colonial Rules. India as a Federal country. India as a Unitary or Union of States. India's Relation with China and Pakistan. Concept and Definition of geography of Election or Electoral Geography. Approaches to Study of Election/ Electoral Geography.

Books Recommended:

1. Alexander, L.M. World Political Pattern, London, 1964.
2. De Blij, H.J. Systematic Political Geography, New York, 1967.
3. Dikshit, .D., Political Geography, New Delhi, 2004.
4. Dikshit, .D. Political Geography, A Century of Progress, New Delhi, 1999.
5. Dikshit, S.K. Electoral Geography of India, Varanasi, 1993.
6. Dwivedi, .L. Fundamentals of Political Geography, Allahabad, 2010.
7. Jackson, W.A.D. Politics & Geographic Relationship, Printice Hall '71
8. Kasperson/Minghi. Structure of Political Geography, London '70
9. Pounds, N. Political Geography, London 1963.
10. Taylor, P. Political Geography, London, 1985.

Course Code : A111003P : Seventh Elective Course Title : FIELD STUDY (SOCIO-ECONOMIC SURVEY)

A. Field Training Study Methods

1. Objectives and scope of the field enquiry.
2. Methods of field work in different areas.
3. Scale-macro, meso and micro.
4. Preparation of questionnaire.
5. Sampling techniques for the collection of data.
6. Collection, processing and presentation of data.

Fieldwork will be carried out on the basis of a interview schedule/questionnaire prepared. The data so collected with the analyzed by the candidate by preparing suitable tables, maps and diagrams. A report on the basis of survey conducted by the candidate shall be prepared.

The report duly certified by the teacher-in-charge shall be submitted.

Students are required to undertake a field study of a distant area or region to study certain aspects of social, cultural landscape and on-spot observations under the supervision of teacher who will accompany the students.

A comprehensive report on the area/region shall be submitted by the students within two weeks on their return from the visited place.

Books Recommended:

1. Archeer, J.E., & Dalton, T.H., Fieldwork in Geogaphy, London, 1968.
2. Elhance, D.N., Fundamental of Statistics, Allahabad, 1972.
3. Jones, P.A., Fieldwork in Geography, London, 1968.
4. Glodard, .H., Field Techniques and Research Methods in Geography, Dubuque 1982.
5. Wheelso, K.S., & Harding, M., Geographical Fieldwork, London, 1965.
6. Mahmood, A., Statistical Methods in Geographical Studied, Rejesh Publication, Delhi, 1977.
7. Geography, S., Statistical Methods and the Geographers, Longmans, London.
8. Monkhouse, F., Maps and Diagrams, Methuen & Co., 1952.
9. Berry, B.J.L., & Marble, F., Spatial Analysis: A Reader in Statistical Geography, New Jersey, 1968.

Course Code : A111004P : Seventh Elective Course Title : ADVANCE SURVEYING
Year : Second Semester : Fourth

- Plane Table Survey

- Radiation Method with Telescopic Alidade

- Prismatic Compass Survey

- Correction of bearing and plotting
- Calculation of included angles and plotting
- Elimination of Error-Bowdith Method

- Dumpy Level Survey

- Rise and Fall System
- Plotting of Longitudinal Sections.

- Theodolite

- Measurement of horizontal angles

Books Recommended:

1. Punmia, B.C., Surveying and Leveling, Vol I.
2. Alvi, Zamiruddin, A Text Book of Surveying

Course Code : A111004P : Research Project/ Dissertation Year : Second Semester : Fourth
Course Title : Major Research Project / Dissertation

Major Research Project/ Dissertation is a compulsory Part of practical in M.A. IV semester syllabus. The students will prepare a dissertation on a specific topic suggested by the allotted teacher for guidance. The Dissertation should not be less than hundred pages. The topic can be selected from various branches of geography such as Geomorphology, Climatology, Oceanography, Rural Geography, Urban Geography, Agricultural Geography, Political Geography, Electoral Geography, Regional Development & Planning, Geography of Tourism, Transport Geography, Remote Sensing and GIS, Industrial Geography, Geography of Health, Marketing and Commercial Geography and any other topic related to Geography. The dissertation should be if possible, on spatio-temporal basis. The Study should be based on Inductive or deductive approach. The dissertation will include the problem, aim and objectives, hypothesis research methodology and approaches and also the outcome of the Report or dissertation which will be valuable in Geographical Research in future.