

M.A (GEOGRAPHY) – THIRD SEMESTER

Third Semester			
S. No.	Name of Subject	Credits	Total Marks
1	Advanced Remote Sensing and GIS	6	100
2	Systematic Agricultural Geography	6	100
3	Regional development (Interdisciplinary)	5	100
4	Rural Development (Interdisciplinary)	5	100
Total		22	

Subject Name: ADVANCED REMOTE SENSING AND GIS

Unit 1. Geographical Information System (GIS): Spatial Data; Attribute Data; GIS concepts; GIS Operations; Geographic grid; Coordinate systems in GIS; Map Projections: Properties of the spherical 13 earth (area, shape, distance, direction) and different types of map projections – Equivalent, Conformal, azimuthal, and equidistant.

Unit 2. Data Models: Vector data model; Raster data model; Vector data – Objects and topology, Vector data input, editing, attribute data input and management; Raster data – Types of raster data, Raster data structure, Data conversion; Integration of raster and vector data.

Unit 3. Spatial Data Analysis: Vector data analysis – Buffer ing, Map overlay, Distance measurement, Map manipulation; Raster data analysis – Analysis environment, Local operations, Neighborhood operations, Zonal operations, Distance measure operations, Spatial autocorrelation.

Unit 4. Terrain Mapping and Spatial Interpolation: Terrain mapping and analysis – DEM, TIN, Operations in terrain mapping; Spatial Interpolation – Control points, Global methods (Trend surface Analysis, Regression Models), Local Methods (Theissen polygons, Density estimation, Inverse distance weighted interpolation, Thin-plate splines, krigging).

Practical Component: The students will have to make a practical record book comprising exercises from the contents of the course. The record book will be evaluated by the external examiner and the paper teacher at the end of the semester.

Recommended Readings

1. Bishop, Michael P. and Shroder, John F. (Eds.) 2004. Geographic Information Science and Mountain Geomorphology. Chichester, U.K.: Praxis Publishing (Springer).
2. Burrough, Peter A. and McDonnell, Rachael A. 1998. Principles of Geographical Information Systems – Spatial Information Systems and Geostatistics. Oxford University Press
3. Chang, Kang-tsung. 2002. Introduction to Geographic Information Systems. New Delhi: Tata McGraw-Hill Publishing Company Limited.
4. Clarke, Keith C. 2001. Getting Started with Geographic Information Systems (3r d Ed.) (Prentice Hall Series in Geographic Information Science). Upper Saddle River, New Jersey: Prentice Hall.
5. *DeMers, Michael N. 2000. Fundamentals of Geographic Information Systems (2n d Ed.) (Wiley Student Edition). New York: John Wiley & Sons, Inc.

6. *Heywood, Ian; Cornelius, Sarah; and Carver, Steve. 2000. An Introduction to Geographical Information Systems (Pearson Education Asia Low Priced Edition). Longman
7. Kraak, Menno-Jan and Ormeling, Ferjan. 2004. Cartography – Visualization of Geospatial Data (2nd Ed.) (Pearson Education Low Price Edition). Pearson Education.
8. *Lo, C.P. and Yeung, Albert K.W. 2002. Concepts and Techniques of Geographic Information Systems (Eastern Economy Edition). New Delhi: Prentice-Hall of India, Private Limited.
9. Price, Martin F. and Heywood, D. Ian. (Eds.) 1994. Mountain Environments and Geographic Information Systems. Taylor & Francis.
10. *Schuurman, Nadine. 2004. GIS – A Short Introduction. Blackwell Publishing.

Subject Name: SYSTEMATIC AGRICULTURAL GEOGRAPHY

Unit 1: Agricultural Geography: Origin and dispersal of agriculture - major theories of origin of agriculture; genecentres of agriculture - New World and Old World.

Unit 2: Agricultural Regionalisation: Concept and criteria, Whittlesey's agricultural regions; agricultural typology-concept and criteria, hierarchy of world type of agriculture; agricultural regions of India.

Unit 3: Models in Agricultural Geography: Bases of classification; normative models - locational model, diffusion model, and decision making models; combinational models.

Unit 4: Agricultural Productivity: Concept, determinants and methods of its measurement; regional imbalances in agricultural productivity in India.

Unit 5: Agricultural problems and strategies for agricultural developments; agricultural planning regions.

Unit 6: New Perspectives in Agriculture: Urban agriculture; agri-business; food security, Sustainable Agricultural Development.

Recommended Readings:

1. Atkin's, P., and Bowler, L., 2001: Food in Society - Economy, Culture and Geography, Oxford University Press, Oxford.
2. Basu, D.N., and Guha, G.S., 1996: Agro-Climtic Regional Planning in India, Vol.I & II, Concept Publication, New Delhi.
3. Buller, N. and Hoggart, K., (eds.) 2001: Agricultural Transformation, Food and Environment, Vol. I, Ashgate Publishing Company, Burlington.
4. Burch, D., Gross, J. and Lawrence, G. (eds.), 1999: Restructuring Global and Regional Agriculture, Ashgate Publishing Company, Burlington.
5. Burger, A., 1994: Agriculture of the World, Aldershot, Avebury.
6. Bryant, C.R., Johnston, T.R, 1992: Agriculture in the City Countryside, Belhaven Press, London.
7. Grigg, D.B., 1984: Introduction to Agricultural Geography, Hutchinson, London.
8. Grossmn, D., VanDen Berg, L.M., and Ajaegbu, H., 1999: Urban and Peri-Urban Agriculture in Africa, Ashgate, Publishing Company, Brookfield.
9. Ilbery, B.W., (ed.) 1998: Geography of Rural Change, Addison Wesley Longman, London.
10. Mohammad, N., 1992: New Dimension in Agriculture Geography, Vol. I to VIII, Concept Pub., New Delhi.
11. Obosu-Mensah, K., 1999: Food Production in Urban Areas: A Study of Urban Agriculture in Accra, Ghana, Ashgate publishing Co., Brookfield.
12. Roling, N.G., and Wageruters, M.A.E.,(ed.) 1998:Facilitating Sustainable Agriculture, Cambridge University Press, Cambridge.
13. Singh, J., and Dhillon, S.S., 1994: Agricultural Geography, Tata McGraw Hill, New Delhi.

14. Srivastava, H.C.(ed.) 1993: *Biotechnological Applications for Food Security in Developing Countries*, Oxford & IBH Publishing Company, New Delhi.

Subject Name: REGIONAL DEVELOPMENT (INTERDISCIPLINARY)

1. Regional Imbalance as a Policy Problem – General Spatial Equilibrium by Ohlin and Losch; Cumulative Causation by Myrdal; Spatial Equilibrium and Spatial Integration by Friedmann (1966)
2. Growth, Income Distribution and Spatial Inequality – Aggregate Efficiency vs. Interregional Equity; Large City Problem and Urban Bias; Spatial Reorganization
3. Urban-Industrial Growth Pole Strategies and the Diffusion of Modernization - Original Growth Pole Concept by Perroux; Transformation into Regional Theory; Two False Starts by Boudeville and Hirschman; USA as an Ideal Case Type: Williamson, North, Perloff, Schultz, Friedmann, and Berry; Dualistic Perspective and Geography of Modernization
4. Polarization and the Development of Underdevelopment: An Anti-Thesis – Failure of Growth Pole Strategies; Polarized Development by Friedmann (1973), World Capitalist System by Frank, Colonialism and Spatial Structure of underdevelopment by Slater; Shared Space by Santos
5. Neo-Populist Regional Development Strategies – National Development Strategy; Urbanization Policies for Rural Development by Johnson, and Rondinelli & Ruddle; Selective Spatial Closure by Stohr & Todtling; Territorial Regional Planning and Development from Below by Friedmann (1979); Agropolitan Development by Friedmann (1978)
6. Space and Explanation in Regional Development Theory – Conceptions of Space by Perroux, and Friedmann & Alonso (1964); Spatial Analysis of Polarized Development: Spatial Centre-Periphery Model, Spatial Diffusion Analysis, Spatial Dependency Analysis; Functional Analysis by Hempel; Analysis of Locational Behaviour by Massey
7. Limits of Spatial Policy & Territorial Regional Planning and State, Development and Regional Planning Practice – Territorial Regional Planning as an Alternative; Territorial Interests; Organic Conception of Region; Development and Regional Planning; Policy Formation & Objectives and Planning Strategies & Practices in Developmentalist States

Recommended Readings:

1. Boudeville J. R. (1966): *Problems of Regional Economic Planning*, Edinburgh Univ. Press, Edinburgh.
2. Friedmann J. (1966): *Regional Development Policy: A Case Study of Venezuela*, MIT Press, Massachusetts.
3. Friedmann J. (1973): *Urbanization, Planning and National Development*, Sage Pub., London.
4. Friedmann J. and Alonso W. (1966): *Regional Development and Planning: A Reader*, MIT Press, Massachusetts.
5. Friedmann J. and Alonso W. (1975): *Regional Policy: Readings in Theory and Applications*, MIT Press, Massachusetts.
6. Friedmann J. and Weaver C. (1979): *Territory and Function: The Evolution of Regional Planning*, Edward Arnold, London.
7. Hirschman A. O. (1958): *The Strategy of Economic Development*, Yale Univ. Press, New Haven.
8. Johnson E. A. J. (1970): *The Organization of Space in Developing Countries*, MIT Press, Massachusetts.

Subject Name: RURAL DEVELOPMENT (INTERDISCIPLINARY)

1. Concept of Rural Development: Development theories and rural development in underdeveloped countries; Macro processes and micro-level development issues.

2. Rural Development Processes in India: Major features of pre-colonial, colonial, and post-independence periods.
3. Rural-Urban Relations: Rural Urban disparities, regional dimensions of migration, occupational patterns, levels of living and poverty.
4. Area Approach to Rural Development: Services provision, settlement systems, growth Centre approach, issues of spatial equity and efficiency in the provision of rural services.
5. Target-group Approach to Rural Development: Review of development programmes for rural development.
6. Technology and Rural Development: Economic and ecological impact of green revolution, technology of dry land farming, rural industrialisation, rural energy, technology and resource recycling.
7. Institutional Aspects of Rural Development: Review of role of Decentralization, District Planning and Panchayats, Co-operatives, Land Reforms, Non-governmental Organizations in Rural Development.

Recommended Readings:

1. Gilg, A.W.: An Introduction to Rural Geography Edward Arnold, London, 1985.
2. International Labour Organization: Poverty and Landlessness in Rural Asia, Geneva, 1977.
3. Lee, D.A. and Chaudhri, D.P. (eds.): Rural Development and State, Methuen, London, 1983.
4. Lipton, M.: Why Poor People Stay Poor: A Study of Urban Bias in World Development, Maurice Temple Smith, London.
5. Misra, R.P. (ed): Rural Development: Capitalist and Socialist Paths, Vol. 1 An Overview, M.Raza et.al. Vol. 4. India and Bangladesh, K.V. Sundaram et.al. New Delhi, Concept Pub.,1985.
6. Misra R.P. and Sundaram, K.V. (eds.): Rural Area Development: Perspectives and Approaches, Sterling Pub;I New Delhi, 1979.
7. Palione, M.: Rural Geography, Harper and Row, London, 1984.
8. Ramachandran, H.: Village Clusters and Rural Development, Concept, New Delhi, 1980.
9. Ramachandran, H and J.P.C. Guimaraes, Integrated Rural Development in Asia-Leaning from Recent Experience Concept, New Delhi, 1991.
10. Robb, Peter (ed.): Rural South Asia: Linkages, Change and Development, Curzon Press,1983.
11. Wanmali, S.: Service Provision and Rural Development in India: A Study of Miryalguda Taluka, Int. Food Policy Res. Inst.
12. Wanmali, S.: Rural Infrastructure Settlement Systems and Development of the Regional Economy in South India, International Food Policy Research Institute, Washington, D.C., 1992.