

**DEPARTMENT OF GEOGRAPHY
GUJARAT UNIVERSITY**

SYLLABUS FOR M.A./M.Sc., GEOGRAPHY

SEMESTER-I

Code No. GEO401 Title: Advanced & Applied Geomorphology No.of Periods: 45

No.of Credits: 4

Sr.No.	Topics
1.	Introduction to Geomorphology as a science and its brief history; Fundamental concepts in geomorphology, main branches of geomorphology.
2.	Distribution of Oceans and continents – palacomagnetism, sea-floor spreading, plate tectonics.
3.	Geomorphic processes – weathering, mass movement, erosion and transportation, slope morphology, models of slope development. Dynamics of landforms – fluvial, coastal and karst landforms, Glacial processes and landforms, ice ages, Aeolian processes and landforms.
4.	Applied Geomorphology – Nature and Objectives, Applied Fluvial geomorphology, Applied geomorphology in coastal management.
5.	Terrain classification – Principles, methods and applications, Geomorphic hazards – fluvial, coastal and slope – management.

References:

1. Chorley, R.J., et.al. (1984): Geomorphology, John Wiley and Sons, New York.
2. Gondie, S.A. (2004) (Eds): Encyclopedia of Geomorphology, Routledge, London.
3. Savindra Singh (2002): Geomorphology, Prayag Pustak Bhavan, Allahabad
4. Steers, J.A. (1937) The Unstable Earth, Methuen and Co., Ltd, London.
5. Strahler, A.H. and Strahler (1992): Modern Physical Geography, John Wiley and Sons (Asia) Pvt. Ltd.
6. Thornbury, W.D. (1960): Principles of Geomorphology, Mathuen, London
7. Sparks, B.W. (1972): Geomorphology, Longman Group Ltd.
8. Hart, M.G. (1986): Geomorphology, Pure and Applied, George Allen and Unwin, London.
9. Hails, J.R. (1977): Applied Geomorphology, Elsevier, Amsterdam.
10. Cooke, R.V. and Doornkomp, J.C. (1974): Geomorphology in Environment Management – An Introduction, Clarendon Press, Oxford.
11. Mitchel, C.W (1973): Terrain Evaluation, Longman, London.

Code No. GEO402 Title: Principles and Applied Climatology No.of Periods: 45

No.of Credits: 4

Sr.No.	Topics
1.	Nature and Scope of Climatology, development of modern climatology and the development of applied climatology, climate impact, Earth's Atmosphere: Evolution, Structure and Composition.
2.	Solar radiation and Terrestrial radiation, Latitudinal and seasonal variation, effect of atmosphere, green house effect and heat budget, hydrological cycle.
3.	Models of general circulation of the atmosphere, Jet stream, Air masses and fronts, characteristics, movements, frontogenesis – extra tropical cyclones, tropical cyclones, Classification of climates: Empirical and generic, climate change: data sources, methods and theories.
4.	Climate and the physical environment – soil, and water resources, flora and fauna, Urban climate – industrial transport and commercial activities, environmental change, air pollution problems.
5.	Climate and Human comfort: clothing, health, human energy balance, impacts on performance and behaviour, morbidity and mortality. Climate change: Data sources, methods and theories.

References:

1. Lutgens, Federic K. & Tarbuck Edward J (1995): 'The Atmosphere: An Introduction to Meteorology', Prentice Hall, New Jersey.
2. Lal, D.S. (1998): 'Climatology', Chaitanya Publishing House, Allahabad.
3. Sarindra Singh (2005): 'Climatology', Prayag Pustak Bhavan, Allahabad.
4. Chritchfield (): General Climatology.
5. Thompson, R.D. and Allen, P. (1997): 'Applied Climatology: Principles and Practice', Routledge, London and New York.
6. Oliver, John E. (1973): 'Climate and Mans Environment: An Introduction to Applied Climatology', John Wiley & Sons, New York, London.
7. Mather, J.R. (1974): 'Climatology: Fundamentals and Applications', McGraw-Hill, New York.

Code No. GEO403 Title: Human Ecology (Environment and Biogeography) No.of Periods: 45

No. Credits: 4

Topics

1. Environmental Science: Introduction, scope, approaches to study of environment, biogeography: scope, development, Biosphere, physiography, interdisciplinary sub-fields.
2. Ecology and Ecosystem: Ecological hierarchy, structure and developmental energy and nutritional flux, food chain and food web, bio-chemical cycles, nitrogen, carbon-dioxide, oxygen, phosphorus, biotic and abiotic, functioning and development of eco system, energy transfer, energy loss.
3. Major terrestrial ecosystems of the world: agriculture, forests, grasslands and deserts. Population growth and environment, carrying capacity of the earth, land resources and world food security.
4. Man-environment relationship: Resource use and ecological imbalance with reference to soils, factors and energy resources, bio-diversity and its conservation. Preservation and conservation of the ecosystem through resource management. Anthrogeogenic effects on plants – Impact of pre-agricultural man, impact of domestication, impact of industrialization and urbanization.
5. Environmental legislation – the Stockholm Conference, the Earth Summit, environmental laws in India – The Wild Life Act, Forest Act, Environment Protection Act and National Environment Tribunal Act.

References:

1. Savindra Singh (2000): 'Environmental Geography', Prayag Pustak Bhavan, Allahabad.
2. Wright, R.T. and Nebel, B.J. (2004): 'Environmental Science: Toward a sustainable future, Prentice Hall of India, New Delhi.
3. Tusk, Jonathan (1985): Introduction to Environmental Studies, Sanders, College Publishing, Tokyo.
4. Mathur, H.S.: Essentials of Biogeography, Pointer Publishers, Jaipur.
5. Robinson, H.: Biogeography, MacDonald and Evans, London.
6. Chandra, R.C. (1998): Environmental Awareness, Kalyani Publishers, New Delhi.
7. Eyre S.R. and Jones G.R.J. (1966) (Eds.): Geography as Human Ecology, Edward Arnold, London. Smith, R.L. (1992): Man and his environment: An Ecosystem Approach, Harper & Row, London.
8. Russworm, L.H. and Sommerville, E. (Eds.)(1985): Man's Natural Environment – A Systems approach, Duxbury, Massachussetts.
9. Nobel and Wright (1996): Environmental Science, Prentice Hall, New York.
10. Odum, E.P. (1971): Fundamentals of Ecology, W.B. Saunders, Philadelphia.

Code No. GEO404 Title: Principles of Economic Geography No.of Periods: 45

No. Credits: 4

Topics

Nature of economic geography, Approaches to the study of economic geography.

Economic concepts and principles, Hypotheses in economic geography, Economic Landscape, Evolution of World Economy.

Factors of production, Rostow's model of economic development, Economic growth and development.

Modes of transport; Cost of transport.

Characteristics of international trade, Comparative cost trade theory, Globalization.

References:

Hartshorne, T.A. and Alexander, J.W. (1988): Economic Geography, Prentice Hall.

Lloyd, P. and B. Dicken (1972): Location in Space – A theoretical approach to economic geography, Harper & Row, New York.

Estall R.C. and Buchanan, R.O. (1970): Industrial Activity and Economic Geography, Hutchinson & Co., Ltd, London.

Code No. GEO405PR

Title: Cartographic Methods

No.of Practicals:

Course Credits: 4

Topics

Relief and climatic diagrams: Cross profiles – superimposed projected and composite profile, Long profile; Altimeric curve, 3-D models, Toposheet interpretation.

Hythergraph, climograph, polargraph, composite wind rose, Isohyet and Isotherm maps, cyclone track and interpretation of weather charts.

Cartograms: Use of socio-economic data, circle and sphere methods, square and block methods, choropleth maps, flow diagrams, triangular graph, Lorenz curve and Gini's concentration Index.

Indices of transport network analysis – Detour Index and shape index.

References:

Monkhouse, F.J. (1967): Maps and Diagrams, Mathuen and company, London.

Raisz Erwin (1962): Principles of Cartography, McGraw Hill, New York.

Robinson, A.H. et.al(2002): Elements of Cartography, 6th ed., John Wiley and Sons, New York.

Ramesh, A. and Misra R.P. (1999): Fundamentals of Cartography Concept publishing co. New Delhi.

Singh, R.L. and Singh Rana (1993): Elements of Practical Geography, Kalyani Publishers, Ludhiana, New Delhi.

Code No. GEO406PR

Title: Quantitative Methods

No.of Practicals:

No. Credits: 4

Practicals

Topics

Geographical data: Discrete and continuous series, scales of measurements, frequency distribution, histogram, Frequency curve and ogive curves.

Measures of Central tendency – Mean, Median, Mode, skewness, measures of dispersion – Mean deviation, standard deviation, quartile deviation, measures of relative variability, coefficient of variation.

Theory of probability and sampling, theoretical probability, distributions. Binomial, poisson and normal, introduction to sampling theory, sampling distributions and standard error.

Correlation co-efficient, rank correlation, simple regression and trend line analysis, time series analysis.

Formulation of Hypothesis, 't' test, f-test, chi-square test and 2-test.

References:

Gregory S. (1978): Statistical Methods for the Geographer, Longman, London.

Hammond, R.and McCullagh P. (1991): Quantitative Techniques in Geography, Clarendon Press, Oxford.

Ebdon, D (1977): Statistics in Geography, Basil Blackwell.

Frank, H. and Althoen, S.C. (1994): Statistics: Concepts and Applications, Cambridge University Press.

Code No. GEO407 Title: Philosophy of Geographical Thought No.of Periods: 45

No. Credits: 4

Topics

1. Basic Frame and concepts – Man-Environment interaction: New Environmentalism; Concepts: Space, Place, environment, time and spatial organization; Region, and regional typology; culture and cultural landscape.
2. Modern Approaches. Dualism in Geography, Quantitative revolution and challenges, philosophy and Geography: Contributions of – Vidal de la Blache and care saver, Humanistic and phenomenological Geography – contributions of Yi-Fu Tuan, Literary Geography: landscape as text.
3. Contemporary Trends. Qualitative paradigm, Behavioural revolution – Perception and Cognition mental maps; Marxism/Radicalism and welfare approach, modernism vs post-modernism; post-structuralism and post-colonialism.
4. Indian Geography: Base and Trends. Impact of post-colonialism and Gandhism on Indian geography.
5. Ancient – Indian geography and scientific outlook; Future of Indian geography: problems perspective and prospects.

References:

1. Adams, Paul, Steven Holescher and Karel Till (eds.) (2001): Texture of Place. Exploring Humanistic Geographies. University of Minnesota Press, Minneapolis.
2. Arild Holf-Hensen (1999): Geography History and Concepts, Sage Publications, London.
3. Barnes, Trevor and Gregory, Derek (eds.)(1997): Reading Human Geography Poetics and Politics of Human Geography, Arnold, London.
4. Dear Michael J. and Flusty, S. (2002): The Spaces of post-modernity: Readings in Human Geography, Blackwell Publication, Oxford.
5. Dikshit, R.D. (2001): Geographical Thought – A Contextual History of Ideas, Prentice Hall of India, New Delhi.
6. Harvey, David (1969): Explanations in Geography, Arnold, London.
7. Johnston R.J. (2000): Geography and Geographers 4th ed. Edward Arnold, London.
8. Kapur Anu (ed.)(2001): Indian Geography – Voice of Concern Concept Publishing Company, New Delhi.
9. Peet, Richard (1998): Modern Geographical Thought, Blackwell, Oxford.
10. Suja Edward (1989): Post-modern Geographies verso, London Reprinted 1997: Rawat Publication, Jaipur and New Delhi.

Code No. GEO408 Title: Principles and Applied Oceanography No.of Periods: 45

No. Credits: 4

Topics

Nature and Scope of Oceanography – Major features of Ocean basins, continental margin and deep ocean basins – Bottom relief of Indian, Atlantic and Pacific Oceans.

Physical and chemical properties of sea water, sources and factors affecting the distribution of temperature and salinity.

Circulation patterns in the ocean – ocean currents, watermasses, waves, tides and tsunamis, their types and theories of origin.

Marine biological environment, biozones – Plankton, Nekton and Benthos, ocean deposits, coral reef, theories of their origin.

Impacts of Humans on the Marine Environment – Laws of the sea, marine resources, development and pollution, EEZ and resource utilization.

References:

Davis Richard, J.A. (1986): Oceanography – An Introduction to Marine Environment, Wm. C.Brown, Iowa.

David Ross (1973): Introduction to Oceanography.

Duxbury, C.A. and Duxbury, B. (1996): An Introduction to World's Oceans, C.Brown Iowa (2nd Ed.).

Garrison, T. (2001): Oceanography – An Introduction to Marine Science, Books/Cole, Pacific Grove, USA.

Gross M.Grant (1987): Oceanography – A view of the Earth, Prentice Hall Inc. New Jersey.

Singh Savindra (20): Oceanography, Allahabad.

Ummerkutty, A.N.P. (1985): Science of the Oceans and Human Life, National Book Trust, New Delhi.

Code No. GEO409 Title: Population and Settlement Geography No.of Periods: 45

No. Credits: 4

Topics

1. Nature, Scope, approaches and subject matter of population and settlement geography, Nature and sources of data and maps for studies in population and human settlements, units of settlements, definition of rural and urban.
2. Population distribution density and growth, population composition – Biological – Race age-sex; Economic – Occupation, industrial classification; socio-cultural – marital status, family, household, literacy, education, language, religion, caste and tribe; rural-urban composition and gender issues.
3. Population Dynamics – Fertility, Mortality, Morbidity and Migration processes and patterns of urbanization – rural-urban continuum.
4. Theories of evolution of settlements, settlement structure – physical – characteristics of internal structure and external form theories of urban morphology; functional – classification of cities, functional typology of villages; landuse – principles and theories of landuse in urban and rural setting; house types and building materials.
5. Settlement Hierarchy: Concept of Hierarchy, central place theory, hierarchical structure of settlements in India. Issues and Policies on population and Human Settlements.

References:

1. Beaujeu Garnier J. (1966): Geography of population, Longman Group Ltd., London.
2. Ambrose, Peter (1970): Concepts in Geography Vol.I: Settlement Pattern, Longman.
3. Chandna R.C. (1986): Geography of Population – Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
4. Clarke J.J. (1984): Geography and Population – Approaches and Applications, Progress Press, Oxford.
5. Hudson, R.S. (1970): A Geography of settlements, McDonald and Sons, London.
6. Chisholm, M. (1962): Rural Settlements and Landuse, Hutchinson, London.
7. Short, John. R. (1984): An Introduction to Urban Geography, Routledge and Regan Paul, London.
8. Herbert David & C.J. Thomas (1982): Urban Geography – A First Approach, John Wiley & Sons, Binghamton, N.Y.

Code No. GEO410 Title: Regional Geography of India No.of Periods: 45

No. Credits: 4

Topics

1. Physical aspects and Resources: Making of India through geological times, structure and relief, physiographic divisions, drainage systems and watersheds, climate characteristics, mechanism of the Indian monsoon, soil-water resources, forest types, distribution and utilization.
2. Agriculture: Salient features of agriculture, agricultural regions, major crops, problems and prospects, green revolution and its impact, white, blue and yellow revolutions.
3. Industries: Salient features of Indian industry, industrial complexes and regions, major industries, industrial policies, globalization and liberalization, problems and prospects, transport development: Rail, Road, and Ports, Tourism in India.
4. Population structure and composition – size, distribution and density; biological, economic and socio-cultural characteristics, dynamics of population – Migration and urbanization, population policy.
5. Dynamic, prospective and problem regions of India, Regional disparities in the levels of economic development, Globalisation and its impact on Indian economy and society.

References:

1. Deshpande, C.D. (1992): India: A Regional Interpretation, ICSSR & Northern Book Centre, New Delhi.
2. Dutt, Ashok K. (Ed.)(1972): Indian – Resources, Potentialities and Planning, Kendall/Hunt Publishing Company, Dubuque.
3. Government of India (2007): National School Atlas, NATMO, Kolkatta.
4. Gautam, A. (2006): Advance Geography of India, Sharda Pustak Bhawan, Allahabad.
5. Khullar D.R. (2005): India-A comprehensive geography, Kalyani Publishers, Ludhiana.
6. Nagi P. and Smita Sen Gupta (1993): Geography of India, Concept Publishing Company, New Delhi.
7. Ramesh A. (Ed.) (1981): Resource Geography, Heritage Publishers, New Delhi.
8. Tiwari, R.C. (2006): Geography of India, Prayag Pustak Bhavan, Allahabad.
9. Wadia, D.N. (): Minerals of India, National Book Trust, New Delhi.

Code No. GEO411PR

**Title: Computer Base & Data Base
Management**

No.of Practicals:

No. Credits: 4

Topics

1. Use of computers: Introduction of computers, physical components, software tools, creation of folders, saving files.
2. Spreadsheets / Database Maintenance through Microsoft Excel, Data input, use of formulae, calculation of sum, mean, median and mode, percentages, Growth rates, Generating Bar Diagram, Pie-charts, Line graphs, etc.
3. Application of statistical software SPSS: Data Input, Recoding Data calculation of minimum, maximum, range, mean standard deviation.
4. Frequency Tables, Cross Tabulations, Correlation, etc.

References:

1. Chien Chad C. (1991): Introduction to the Micro computer and its applications, Galgotia Publications Pvt Ltd., New Delhi.
2. Heywood Ian, et.al. (2003): An Introduction to Geographical Information Systems, Pearson Education (Singapore) Pvt.Ltd. Delhi.
3. Lo C-P., Albert K.W. Yeung (2004): Concepts and Techniques of Geographic Information Systems, Prentice Hall of India Pvt. Ltd, New Delhi.
4. Burrough, P.A. (1986): Principles of Geographical Information Systems for Land Resources Assessment, Clarendon Press, Oxford.

Code No. GEO412PR
No. Credits: 4

Title: Research Methods & Field Survey No.of Practicals:

Topics

1. Framework of Research: Concept and significance of research in geography, research approaches and choices: Empiricism, Positivism, Behaviourism, Inductive and Deductive approaches.
2. Planning the research and Data generation: Primary data and secondary data, Data collection and classification, Research design, participatory research planning and framing pilot/research project, survey-questionnaire making of form and design, village and household survey and reporting.
3. Theories and Techniques: Model making; Application of system theory; Use of GPs; Application and relevance of statistical and cartographic techniques, Application of computer and GIS.
4. Analysis, writing and Dissemination, Production and arrangement of data and maps; Quantitative and Qualitative interpretations; Use of writing Manuals (arranging themes, maintaining coherence, cross-comparison, concluding, referencing noting); proof marks and marked proof, report writing: a case study of heritage planning of Ahmedabad.

References:

1. Blackburn, J. and Holland, J. (eds) (1998): Who changes? Institutionalising Participation in Development, IT Publications, London.
2. Blaxter, L. Hughes, C. and Tight, M. (1966): How to Research, Open University Press, Buckingham.
3. Denzin, N.K. and Lincoln, Y.S. (eds.) (2000): Handbook of Qualitative Research, Sage Publications, Thousand Oaks, CA.
4. Fisher, Peter & Unwin David (eds.)(2002): Virtual Reality in Geography, Taylor & Francis, London.
5. Flowerdew, R. and Martin, D. (eds) (1997): Methods in Human Geography – A Guide for students doing a Research Project, Longman, Harlow.
6. Hay, I. (ed.)(2000): Qualitative Research Methods in Human Geography, Oxford University Press, New York.
7. Kitchin, Rob and Tate Nicholas (2001): Conducting Research into Human Geography. Theory, Methodology and Practice, Prentice Hall, London.
8. Limb, Mclanie (2001): Qualitative Methodologies for Geographers, Issue and Debates, Arnold, London.
9. Peet, Richard (ed.)(2002): New Models in Geography (2 Vols.) Rawat Publications, Jaipur.
10. Robson, C. (1993): Real World Research. A Resource for social scientists and Practitioners – Researchers, Blackwell, Oxford.
11. Wright, D.B. (1997): Understanding Statistics A Introduction for the social sciences, Sage, London.

Code No. GEO501EA
No. Credits: 4

Title: Geography of Tourism

No.of Lectures: 45

Topics

1. Nature and scope of Tourism, history of tourism, factors affecting tourism, types of tourism.
2. Infrastructure and support system for tourism, evaluation of tourism potential, development and planning for tourism.
3. Economic, social physical and cultural impact of tourism.
4. Environmental laws and tourism, globalization and tourism.
5. Case studies of tourist centres
 - 1) Religious centres, 2) Historical centres, 3) Resort, 4) Dams, 5) Sanctuaries and National Parks.

References:

1. Bhatia, A.K. (1996): Tourism Development: Principles and Practices, Sterling Publisher Ltd., New Delhi.
2. Bhatia, A.K. (1991): International Tourism – Fundamentals and Practices, Sterling, New Delhi.
3. Manert Kumar: Tourism Today: An Indian Perspective.
4. Manoj Das (1999): India: A Tourist Paradise.
5. Mathieson A and Wall: Tourism: Economic, Physical and Social Impact.
6. Inskip E. (1991): Tourism Planning: An Integrated and sustainable Development Approach, Van Nostrand and Reinhold, New York.
7. Pearce D.G. (1987): Tourism Today: A Geographical Analysis, Harlow, Longman.
8. Robinson, H. (1996): A Geography of Tourism, Macdonald and Evans, London.
9. Sharma J.K. (Ed.) (2000): Tourism Planning and Development – A new perspective, Kanishka Publishers, New Delhi.

Code No. GEO501EB
No. Credits: 4

Title: Hydrology & Water Resources

No.of Lectures: 45

Topics

1. Significance of water to human society – Hydrological cycle – water as a resource: historic perspective, traditional wisdom of water conservation and harvesting – contemporary relevance.
2. Water in modern society – changing profiles of demand mobilization of water resources – sectoral and spatial links role of technology and capital – optimal use of water and related policies.
3. Water uses in agriculture – climate, soil, crop relationships and related water requirements – Modern irrigation practices, relevance of water harvesting for agriculture.
4. Industrial use of water and systems of supply – industrial activities and estimates of demand – use and misuse of water bodies – associated environmental issues.
5. Contemporary issues of water management – urban and rural areas – large dams, multipurpose projects, check dams, linking of rivers – Environmental, economic and social dimension; issues of water governance.

References:

1. Kates, R.W. and Burton, I. (eds.) (1980): Geography, Resource and Environment, Ottawa.
2. Mather, I.R. (1984): Water Resources Distribution, Use and Management, John Willey, Maryland.
3. Iyer, R.R. (2003): Water, Perspectives, Issues and Concerns, Sage, New Delhi.
4. Perverira, H.C. (1973): Land Use and Water Resources, Cambridge University Press, Cambridge.
5. Jones, J.A. (1997): Global Hydrology: Processes, Resources and Environmental Management, Longman, London.
6. Newson, M. (1992): Land water and Development – River Basin systems and their sustainable management, Routledge, London.

Code No. GEO502EA
No. Credits: 4

Title: Geography of Urban Systems

No.of Lectures: 45

Topics

1. Urbanisation and Development, Demographic, economic and social aspects of urbanization – capitalism, industrialization, urbanization and urban development.
2. Urban system – Evolution, growth and organization, primacy, hierarchy and balance – Globalisation and world city system – urban systems in the periphery – Global and local.
3. Urban economic base – concept of dualism – colonial and post-colonial structure – intersection of global processes and flexibilised urban economy – Global city and changing urban functions.
4. Organisation of urban space – urban morphology and land use – contemporary urban frontiers – urban renewal, transformation of urban space, spatial order, crisis in urban space, emerging issues.
5. Urban expansion and the periphery – suburbanization and urban sprawl – urban development in the fringe contemporary issues in urban planning.

References:

1. Carter, H. (1972): The study of urban Geography, Edward Arnold.
2. Knox, P.L. and Taylor (P.J. (1995): World cities in world system, Cambridge University Press, U.K.
3. Sassen, S. (1991): The Global City, Princeton University Press.
4. Marcuse, P. and Kempner, R.V. (eds.) (2000): Globalizing Cities: A New Spatial Order, Blackwell.
5. Markusen, A.R. et.al. (1990): Second Tier Cities: Rapid Growth Beyond the Metropolis, University of Minnesota Press.
6. Hall, P. (1996): Cities of Tomorrow, Basil Blackwell.
7. Watson, S. & Gibson, K. (1995): Post Modern Cities and Spaces, Basil & Blackwell.

Code No. GEO502EB
No. Credits: 4

Title: Geography of Agriculture No.of Lectures: 45

Topics

1. Nature, scope and significance of agricultural geography various approaches to the study of agricultural geography.
2. Origin and dispersal of agriculture, place of agriculture in the world and regional economies.
3. Factors influencing agriculture: Physical, Economic, Technological.
4. Agricultural types: Shifting cultivation, Intensive subsistence agriculture. Mixed farming, commercial grain farming plantation agriculture.
5. Land Use: Surveys and Land classification, agricultural regionalization measures of agricultural productivity, policies, reforms and core-strategies of agricultural development.

References:

1. Grigg, David (1995): An introduction to agricultural geography (second edition), Routledge, London and New York.
2. Singh Jasbir and Dhillon, S.S. (1994): Agricultural Geography, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
3. Symons, Leslie (1970): Agricultural Geography, G.Bell and Sons Ltd., London.

Code No. GEO503EA
No. Credits: 4

Title: Social Geography

No.of Lectures: 45

Topics

1. Social Geography: Nature, scope and development – Relationship with social sciences, Nature and problem of data.
2. Geographic basis of social interaction and relations, formations of social groups, community and society, concept of social space, socio-cultural region.
3. The role of race, ethnicity, religion, caste and language in the evolution of social regions. Aspects of unity in diversity in Indian society, social transformation, sanskritisation, role of rural-urban interaction.
4. Space and society – contribution of social geography to social theory, power relations and space, gender disparities and their spatial expressions.
5. Processes of industrialization, urbanization, modernization and globalization and their impact on Indian society – family structure, disparity level of living and values.

References:

1. Aijazuddin Ahmeda (1999): Social Geography, Rawat Publications, New Delhi.
2. Jones Emrys and Eyles John (1977): An Introduction to social geography, Oxford University Press.
3. Knowles R., Wareling J. (1998): Economic and social geography, Rupa and Co., New Delhi.
4. Smith David (1977): Geography – A Welfare Approach, Edward Arnolds.
5. Hammett, Chris (eds.)(1996): Social Geography: A Reader, Arnold, London.
6. Rachel, Pain. Et.al. (2001): Introducing social geographies, Arnold hodder group, London & Oxford University Press, Oxford.

**Code No. GEO503EB Title:Geography of Rural Market Centres No.of Lectures: 45
No. Credits: 4**

Topics

1. Marketing Geography – Meaning, scope and subject matter, system of production, distribution and exchange and development of market centres, system of central places in complex economies, systematic variations of the hierarchy.
2. Approaches to a theory – classical central place, modern theoretical departures –periodic markets in peasant societies.
3. Reciprocal and redistributive exchange in the simplest societies, emergence of local and long distance trade, change in peasant marketing.
4. Modern urban hierarchies – change within metropolitan regions, emergence of new metropolitan form.
5. Theories of marketing – presenting market and marketing data, evaluating markets, delineating trading and selling areas and selecting channels of distribution and locations for wholesale, retail or service establishment, role of market centres in regional and national development.

References:

1. Baskin, C. (1966): Central Places of Southern Germany, Englewood Cliffs, Prentice Hall Inc.N.J.
2. Belshaw, Cyril S. (1965): Traditional Exchange and Modern Markets Englewood Cliffs, Prentice Hall, N.J.
3. Berry, B.J.L. (1967): Geography of Market Centres and Retail distribution, Prentice Hall Inc. Englewood Cliffs, N.J.
4. Johnson, E.A.J. (1965): Market Towns and Spatial Development in India, National Council of Applied Economic Research, New Delhi.

Code No.504EA
No. of Credits: 4

Title: Regional Planning and Development

No. of Lectures: 45

Topic

1. Fundamentals: Concept, nature and scope of regional planning, methods of regional planning, different approaches to regional planning, planning regions, concept and types; methods of delimitation, planning regions of India, regional policies in India.
2. Conceptual Outlook: Regional planning and national development; economic development and regional development, regional disparity and regional diversity; production processes and cycles; regional economic complexes, inter-regional and intra-regional functional interactions; regional disparities in India.
3. Approaches: Approaches to integrated regional planning at different levels; local regional and national; multi-level planning in India: State, District, Block level planning; planning for tribal, agricultural, industrial and urban (metropolitan) regions.
4. Development perspective: Service and market centres planning; growth centre and regional development – with reference to India and France.
5. Regional Development and Planning Strategies – Concentration versus dispersal – case studies from developed and developing countries.

References:

1. Chandra, R.C. (2000): Regional Planning – A comprehensive text, Kalyani Publishers, Ludhiana.
2. Friedman, J., Alanso. W. (1967): Regional Development and Planning – A Reader, MIT Press, Mass.
3. Misra, R.P. (ed.) (1992): Regional Planning, Concepts, Techniques, Policies and Case Studies, Concept Pub. New Delhi.
4. Misra, R.P. et.al. (1976): Regional Development Planning in India, Vikas, New Delhi.
5. Sundaram, K.V. (1997): Decentralised Multi-level Planning: Principles and Practices (Asian and African Experiences) Concept Publishing Co., New Delhi.

Code No.504EB
No. of Credits: 4

Title: Regional Development and SAARC
Countries

No. of Lectures: 45

Topic

1. South Asia as a territorial entity – Geo-Political evolution of SAARC countries; Salient Features of natural features and resources – Major issues in resource mobilization and infrastructure development.
2. Agricultural Systems in SAARC countries and issues of development, colonial and, post-colonial trends, aspects of commercialization, modernization and globalization and its impact – contemporary crisis in agriculture.
3. Genesis and trends of industrial and urban growth – Perspective of industrialization – structural linkages and regional patterns – problems of industrial development and urbanization – contemporary patterns.
4. Trade and trade relations – Nature and Patterns of intra-regional and international trade globalization – Dynamics of world affairs – contemporary trade policies and issues of development.
5. People and cultural mosaic – spatial pattern and density – Regional Socio-cultural formations, ethnicity, language and religion, politics of culture and resultant pattern – Differential roles of centres of political and economic activities – Civil society, and governance – quality of life and index of social economic well being, regional variations.

References:

1. Gonslaves, F. and Jetty, N. (1999): The Dynamics of South Asia: Regional Co-operation and SAARC, Sage, New Delhi.
2. Bjorkman (1987): The Changing Division of Labour in South Asia: Manohar, New Delhi.
3. Schwarzberg, J.F. (Ed.) (1978): A Historical Atlas of South Asia, University of Chicago Press, Chicago.
4. Mollinga, P.A. (2000): Water for Food and Rural Development: Approaches and Initiatives in South Asia, Sage, New Delhi.
5. Johnson, B.L.C. (1981): South Asia (2nd Edition), Heinemann Educational Books Ltd. Exeter.
6. Wickramasing, V. (2001): Energy for Economic Development in South Asia: Present Status, Future Requirements and Potential for Regional Co-operation in South Asia, Economic Journal, Vol.2, No.2, July-Dec. 2001.
7. Farmer, B.H. (1993): An Introduction to South Asia (2nd Edition), Routledge Publications, London.

Code No.505PRA
No.of Credits: 4

Title: Geographical Information Systems

No.of Practicals:

Topic

1. Fundamentals of GIS: Concepts and definitions, component elements of GIS, Tasks of GIS, Functional and Logical relationships among geographic features and their attributes, types of attributes, data quality and sources of errors – Hardware and software requirements of GIS.
2. Map projection, spherical coordinate system, Datum Plane – Information on various scales, need of projection, properties of map projections.
3. Conceptual models of spatial information – Raster Data model, vector data model comparative overview; Preparation of vector and raster data base and maps, manual method for point, line and area entities.
4. Conceptual models of non-spatial information – Hierarchical data base structure, network structure, relational model.
5. Structuring of spatial data – scanning, digitizing, error detection and correction, topology, encoding raster data: full grid, chain code, run length, block code.

References:

1. Burroughs, P.A. (1986): Principles of Geographical Information Systems for land resources assessment, Oxford University Press, London.
2. Environmental Systems Research Institute (1993): Understanding GIS: The Arc Info Method.
3. Training course for GIS for resource management and development planning: Lecture notes, VI: GIS Fundamentals and Techniques, Government of India.
4. Bernhardsen, Tor (1999): Geographic Information Systems: An Introduction, John Wiley and Sons.
5. Clarke, Keith C. (1999): Getting started with Geographic Information Systems, Prentice Hall.
6. Demers, Michael, N. (2000): Fundamentals of Geographic Information Systems, John Wiley.
7. Haywood, Ian (2000): Geographical Information Systems, Longman.
8. Chang, Kang-taung (2002): Introduction to Geographic Systems, Tata McGraw Hill.

Code No.505PRB **Title: Computer Cartography – Digital Image** **No. of Practicals:**
No. of Credits: 4 **Processing**

Topic

1. Principles of mapping: Fundamentals of maps – elements of design and layout – scale – content relationship – techniques of representation and symbolization of geographic features – Map projections: Properties and choice.
2. Sources of data for mapping: Traditional and modern sources – data acquired by remote sensing and GPS technologies – GIS database – web based resources – Integration of data from different sources – some basic statistical techniques for processing and organization of data – conversion into mappable form.
3. Characteristics of geographic data: Spatial data structures – conversion of spatial data into digital form – characteristics of digital data – vector and raster formats – their implications for input, processing and storage, manual, semi-automated and automated procedures for input of spatial data.
4. Processing and output of spatial data – computer assisted procedures for representation of point line and area data – linking of attribute data with corresponding objects – addition of text – Plotting and printing: devices and methods.

References:

1. Clarke, K.C. (1998): Analytical and computer cartography, Pearson Educational Company, New Jersey.
2. Jones, C.B. (1997): Geographical Information Systems and Computer Cartography, Addison Wesley Longman Ltd. England.
3. Monmonier, M.S. (1982): Computer Assisted Cartography: Principles and Prospects, Prentice Hall, Inc. London.
4. Mather, P.M. (1976): Computers in Geography: A Practical Approach, Basil Blackwell, Hampshire.
5. Kraak, M.J. and A. Brown (1996): Web Cartography: Developments and Prospects, Addison Wesley Longman Ltd, England.

**Code No.506PRA Title: Remote Sensing and Image Interpretation No. of Practicals:
No. of Credits: 4**

Topic

1. Spectral Characteristics of common natural objects, Atmospheric effects on remote sensing data; spectral signatures and special response patterns, resolutions of remote sensing data.
2. Characteristics of Remote Sensing platforms and sensors; Indian Remote sensing satellites and sensors; Micro-wave remote sensing data: characteristics, interpretation and application.
3. Preparation of keys from satellite imageries, thematic mapping through satellite imageries for geomorphology, land-use/land cover, ground water potential zones, lithology and structure, soil and forest types.
4. Digital image processing (DIP) techniques: Image enhancement, Image classification: Supervised and unsupervised.
5. Satellite image interpretation in terrain and resource evaluation, environmental monitoring; Land use/land cover mapping; water and forest; Lithology and structure; Remote Sensing and GIS.

References:

1. Agarwal, C.S. and Garg, P.K. (2000): Remote Sensing, A.H. Wheeler and Co. Ltd. New Delhi.
2. Campbell, James, B. (2003): Introduction to Remote Sensing 4th Ed. Taylor & Francis, London.
3. Cracknell, A. et.al.(1990): Remote Sensing Year Book, Taylor and Francis, London.
4. Curron, P.J. (1985): Principles of Remote Sensing, Longman, London.
5. Floyd, F. Sabins, Jr. (1986): Remote Sensing: Principles and Interpretation, W.H. Freeman, N.Y.
6. Hord, R.M. (1982): Digital Image processing of remotely sensed data, Academic Press, New York.
7. Jensen, J.R. (2004): Remote sensing of the environment: An Earth Resource Perspective, Prentice Hall, Englewood Cliffs, N.J.
8. Lillesand, T.M. and Kiefer, R.W. (2000): Remote sensing and Image Interpretation, John Wiley and Sons, N.Y.

**Code No.506PRB Title: Global Positioning System and Surveying No. of Practicals:
No. of Credits: 4**

Topic

1. Global Positioning System, Concept, meaning and applications.
2. GPS Measurements as data inputs for GIS
3. Acquisition of Digital data by GPS – Satellite based surveying system – A kinematic GPS Surveying, Stop-and-go GPS surveying, A real time GPS surveying.

References:

1. Haywood Ian, Sarah Cornelins and Steve Carrer (2002): An Introduction to Geographical Information Systems, Second edition (LPE), Pearson Education (Singapore) Pvt Ltd, Delhi.
2. Lo, C.P.; Albert K.W. Yeung (2002): Concepts and Techniques of Geographic Information Systems, Prentice Hall of India Pvt. Ltd. New Delhi.

Code No.507EA
No. of Credits: 4

Title: Geography of Natural Resources and Management

No. of Lectures: 45

Topic

1. Resources: Concept, functional operational theory, process, need for study, principals of resource adequacy and resource scarcity, classification of resources and resource appraisal.
2. Distribution of resources – water, soil, forest, mineral and energy in India and world.
3. Utilization and conservation of natural resources in the context of environment, population and development.
4. Degradation of resources – land, water, air and forests, causes and consequences.
5. Resource development and management, National policies, plans, programmes, processes and patterns of resource development, eco-friendly technology, and sustainable development.

References:

1. Mitchell, B. (1989): Geography and resource analysis (2nd Edition), Longman Scientific and Technical, U.K.
2. Negi, B.S. (1997): Geography of Resources.
3. Ramesh, A. (Ed.): Contribution to Indian Geography – Resource Geography, Heritage Publishing, New Delhi.
4. Roy, P. (2000): Resource Studies, Central Educational Enterprises, Kolkata.

Code No.507EB
No. of Credits: 4

Title: Geography of Human Resources and Management

No. of Lectures: 45

Topic

1. Conceptual frame: Population as resource, population and development: a debate, population and eco-system, demographic transition, quantity and quality of human resource.
2. Distribution of Human resource – size, density and growth, race, age-sex composition, Literacy and level of education, workers by occupation, birth and death rates and morbidity, geographical impact of an spatial variation in human resource in India.
3. Demand and Supply of Human resource in different activities; labour scarcity and unemployment and dichotomy.
4. Management of labour force to achieve optimum utilization of human resource; human resource and development planning, interrelationship.
5. Human resource development: Gender, children, aged, religion, caste, tribe; policies and programmes, measurement of human development index.

References:

1. Ehlich, P.R. and Ehlich, A.H. (1977): Eco-Science, population, Resources, Environment, W.H. Freeman and Co., San Francisco.
2. David, Y. (1985): Demography – The study of Human population, St.Martin's Press, Inc. New York.
3. Middleton, Neil and O'Keefe, Phil (2001): Redefining sustainable development, Pluto Press, London.
4. Thakur, B. (ed.)(2004): Population, Resources and Development, Vol.II, Gender, Environment and Development, Concept Publishing Co., New Delhi.
5. UNDP (2002): Human Development Report, Oxford University Press, Oxford.
6. Burton, I. and Rates, R.W. (1978): Reading in Resource Management and Conservation, McGraw Hill, New York.

Code No.508EA
No. of Credits: 4

Title: Geography of Natural Hazards and Management

No. of Lectures: 45

Topic

1. Natural hazards and disasters – definition and areas, natural hazards, meteorological – cyclones, typhoons, hurricanes and droughts, forest fires, causes, assessment, effects and control measures.
2. Natural hazards – Geological – earthquakes, volcanoes, causes, effects and control measures.
3. Natural hazards – Geomorphic – landslides, soil erosion and gullying, coastal erosion causes, assessment, effects and control measures.
4. Natural hazards – hydrological – floods (river and seawater), failure of natural dams, Tsunamis, Salinisation, causes, assessment, effects and control measures.
5. Concept of vulnerability, mitigation, prevention, preparedness, response and recovery. Risk and vulnerability assessment hazard zonation, Use of remote sensing and GIS in hazard studies.

References:

1. Goudie, A. (1990): Geomorphological Techniques, Unwin Hyman, London.
2. Hart, M.g. (1986): Geomorphology, Pure and applied. George Allen and Unwin, London.
3. Morisawa, M. (Ed.) (1994): Geomorphology and Natural Hazards, Elsevier, Amsterdam.
4. Valdiya, K.S. (1987): Environmental Geology, Tata McGraw Hill, New Delhi.

Code No.508EB
No. of Credits: 4

Title: Geography of Human Hazards and Management

No. of Lectures: 45

Topic

1. Man induced physical hazards – landslides, soil erosion, earthquakes, forest fires, desertification, etc.
2. Biological hazards induced by man: Population explosion, entrophication, adverse impact on biodiversity.
3. Chemical and nuclear hazards, release of toxic elements in air through human activity nuclear explosion, leakage of crude oil from tankers in oceanic waters.
4. Pollution – Air pollution: Sources and types of pollutants, effects on nature and society, water pollution: sources, types and effects and controls, soil, solid waste, noise and cultural pollution – causes, consequences and measures.
5. Global issues – Global warming, ozone depletion, arid rain, carbon budgeting; Global terrorism.

References:

1. Morisawa, M. (Ed.) (1994): Geomorphology and Natural Hazards, Elsevier, Amsterdam.
2. Singh Savindra (2000): Environmental Geography, Prayag Pustak Bhavan, Allahabad.
3. Turk, J. (1985): Introduction to Environmental Studies, Saunders College Publication, Japan.

Code No.509EA
No. of Credits: 4

Title: Geography of Social Well-being

No. of Lectures: 45

Topic

1. Geography and Human welfare and well being – definition, concept, environment, space and ecology, concept of space – patterns, and processes; scope of spatial welfare analysis well-being as the disciplinary focus.
2. Theoretical perspectives: Human being: needs and wants, ‘quality of life’ criteria – level of well-being and state of well-being, consumption approach – utility and welfare, distribution consumption and welfare in geographical space, utility of welfare theory.
3. Fair Society – Concepts and measurement – social justice and a fair society, integrated approaches to social well being, choice of components and indicators, methods of measurement, patterns and levels of well being, social monitoring.
4. Geography and inequality, injustice and deprivation – patterns of inequality – income, health and housing, social contracts and distributive justice, equity in distribution growth, development and welfare.
5. Location and allocation problems – distribution in space: Theories, class and power, public policy and social planning.

References:

1. Coates, B.E., Johnson, R.J. and Knox, P.C. (1977): Geography and Inequality, Oxford University Press, Oxford.
2. Jones, Emrys and John Eyles (1977): An Introduction to social geography, Oxford University Press, Oxford.
3. Herbert David T. and Smith David M. (1983): Social Problems, and the city – Geographical perspective, Oxford University Press, Oxford.
4. Kulkarni, K.M. (1990): Geographical Patterns of Social well-being (with special reference to Gujarat), Concept Publishing Company, New Delhi.
5. Knox, P.L. (1975): Social well-being: A spatial perspective, Oxford University Press, London.
6. Smith, David M. (1973): The Geography of Social Well-being in the USA, McGraw Hill, New York.
7. Smith, David M. (1977): Human Geography: A Welfare Approach, Edward Arnold, London.
8. Smith, David M. (1979): Where the Grass is Greener, Geographical Perspectives on Inequality, Croom Helm, London.

Code No.509EB
No. of Credits: 4

Title: Geography of Health

No. of Lectures: 45

Topic

1. Geography of Health: Definitio, development, achievement and challenges, approaches to geography of health care.
2. Geographical factors affecting human health and diseases arising from them.
3. Classification of diseases – genetic communicable, non-communicable, occupational, deficiency diseases, WHO classification of diseases.
4. Ecology, Etiology, transmission of major diseases, diffusion of diseases and causes of the same, deficiency disorders and problems of malnutrition.
5. Health care systems in India, Health care policies and rehabilitation programmes.

References:

1. Hazra, J. (Ed.)(1997): Health care planning in developing countries, University of Calcutta, Calcutta.
2. May, J.M. (1959): Ecology of Human diseases, M.D. Publications, New York.
3. Philips, D.R. (1990): Health and Health care in Third World, Longman, London.
4. Rais, A. and Learmonth, A.T.A.: Geographical aspects of Health and diseases in India.
5. Stamp, L.D. (1984): Geography of Life and Death, Cornell University, Ithaca.

Code No.510EA
No. of Credits: 4

**Title: Geography of Urban Issues, Planning
and Development**

No. of Lectures: 45

Topic

1. Meaning, concept and scope of urban planning; urban planning: methods and techniques, urban issues: Land-use, physical and infrastructure, Housing transport, social security, natural and man-made hazards and urban environment and quality of living.
2. Urban built environment: Land-use, models and planning, concept of neighbourhood, community living, concept of green belt, structure, design density, quality and cost of housing – their ecological economic and cultural suitability, urban land-use and housing plans.
3. Transport as physical infrastructure: Selection of appropriate means of mass transport, Tram service, Rapid bus transport, suburban railway, metro rail, tube rail; mode of transport – Expressways, Highways, Rapid ways, subways, flyovers, ferryways – associated problems – air pollution, noise pollution and health hazards, urban transportation planning.
4. Urban renewal and redevelopment of towns, archaeological and heritage sites, monuments and protection. Development and use of modern technology in housing, transport, communication, trade and services in urban development and their socio-cultural implications.
5. Optimum city size, new and satellite towns – Concept of Growth Focs, Growth centre and planned township; city planning and development in India: principles and approaches – Indian case studies.

References:

1. Hall, Peter (1992): Urban and Regional Planning, Routledge, London.
2. Misra, R.P. & Misra, K. (eds.)(1998): Million Cities of India, Sustainable development, Fd. New Delhi.
3. Racine, Jean (ed.) (1990): Calcutta 1981: The City, its crisis, and the debate on urban planning and development, Concept Publishing Co., New Delhi.
4. Sundaram, K.V. (1977): Urban and Regional Planning in India, Vikas, New Delhi.
5. Marcuse, P. and Kempen, R.V. (eds.) (2000): Globalising cities: A New Spatial order, Blackwell.
6. Watson, S. & Gibson, K. (1995): Post-modern Cities and Spaces, Basil and Blackwell.

Code No.510EB
No. of Credits: 4

Title: Geography of Development

No. of Lectures: 45

Topic

1. Geography and development – Formal or natural regions – Resource – Functional and developmental regions.
2. Resources, economic systems in developed and developing countries.
3. Culture and development – Rural agricultural development urban industrial development.
4. Processes and patterns in the levels of development, deprivation and disparities; policies of development – nationalization, privatization, liberalization and globalization.
5. Theories, strategies and practices of development.

References:

1. Dutta R. and Sundaram, K.P. (2002): Indian Economy.
2. Fryer, D.W.: World Economic Development, McGraw Bark Hill.
3. Hodder, R. (2000): Development Geography, Routledge, Contemporary human geography series, London.
4. Potter, R.B. Binns Tonny, Elliot, J.A. and Smith Davis (1999): Geographies of Development, Longman, England.
5. UNDP (2002): Human Development Report, Oxford University Press, Oxford.

Code No.511PRA
No. of Credits: 4

Title: Literature Survey and Book Review

Topic

Individual students are assigned the topic for carrying out the survey of literature on the concerned topic or given a particular book for review purpose.

Code No.511PRB
No. of Credits: 4

Title: Formulation of Research Design

Topic

1. Selection of research theme / problem / topic, to present precise, clear, inclusive terms the statement of research theme related to the branches of physical geography or human geography; survey of literature.
2. Formulation of hypothesis, research objectives, nature of data, sources of data, conceptual and methodological framework, questionnaire and sampling design.
3. Classification of data, statistical and cartographic representation and analysis.
4. Use of writing manuals, reports, thesis – organizing themes, cross comparisons, conclusions, findings, referencing, notings, appendices.

References:

1. Anderson, J. Berry H. Durston and Millicent – Poole (1970): Thesis and Assignment Writing, Wiley Eastern Limited, New Delhi.
2. Misra, R.P. (1989): Research Methodology – A Hand Book, Concept Publishing Company, New Delhi.
3. Shah, Urimal, P. (1977): Reporting Research – Papers on Research Methodology, Rachana Prakashan, Ahmedabad.

Code No.512PRA
No. of Credits: 4

Title: Mini Research Project

Topic

Students are encouraged to choose the topic and formulate a small research project, execute the work and submit a project report for evaluation.

Code No.512PRB
No. of Credits: 4

Title: Village or Urban Field Survey

Topic

1. Selection of relevant theme
2. Objectives, data base and methodology
3. Questionnaire and sample design
4. Village or urban land-use survey or household survey
5. Tabulation, mapping, analysis and report writing.