

MASTER OF PHILOSOPHY-GEOGRAPHY

Mode	Open University System
Duration	1 Year
Pattern of Examination	Annual
Eligibility	Master Degree in Relevant with 55%

SCHEME OF EXAMINATION

Subject Code	Title
MPGEO-101	Research Methodology
MPGEO-102	GIS And Remote Sensing
MPGEO-103	Environment Geography
MPGEO-104	Dissertation

MPGEO-101 RESEARCH METHODOLOGY

UNIT - I

Research: Definition, Importance and Meaning of research, Characteristics of research, Types of Research, Steps in research, Identification, Selection and formulation of research problem, Research questions – Research design – Formulation of Hypothesis, Dissertation, Review of Literature.

UNIT – II

Sampling techniques: Sampling theory, types of sampling – Steps in sampling – Sampling and Non-sampling error – Sample size – Advantages and limitations of sampling. Collection of Data: Primary Data – Meaning – Data Collection methods – Secondary data – Meaning – Relevance's, limitations and cautions.

UNIT – III

Statistics in Research – Measure of Central tendency, Dispersion, Skewness and Kurtosis in research, Hypothesis testing, Fundamentals of Hypothesis testing, Standard Error, Point and Interval estimates, Important Non-Parametric tests: Sign, Run, Kruskal, Wallis tests and Mann, Whitney test.

UNIT – IV

Parametric tests: Testing of significance, mean, Proportion, Variance and Correlation, testing for Significance of difference between means, proportions, variances and correlation coefficient. Chi-square tests, ANOVA, One-way and Two-way.

UNIT– V

Research Report: Types of reports, contents, styles of reporting, Steps in drafting reports, editing the final draft, evaluating the final draft.

REFERENCE BOOKS:

1. Research Methodology Methods and Techniques - C.R. Kothari
2. Statistical Methods - S.P. Gupta
3. Statistics (Theory and Practice) - B.N. Gupta
4. Research Methodology Methods and Statistical Techniques - Santosh Gupta

MPGEO-102 GIS AND REMOTE SENSING

UNIT-I

Concepts and Definitions:

- Geographic Information Systems (GIS): Definition and developments
- Spatial data base: Points, Lines and Polygons
- Computer components: Hardware and software

Functional Elements:

- Data acquisition, input, editing, data manipulation and topology creation
- Data analysis and query
- Symbolisation and product generation

UNIT-II

Data Management and Structure:

- Data Base Management System (DBMS): Purpose and structure
- Classification: Raster, Vector, quad tree, hierarchical, network and relational

Artificial Intelligence and Neural Networks:

- Artificial intelligence: history, major issues, approaches and pattern recognition.
- Artificial neural network: Definition, taxonomy and multi-layer perceptions

Remote Sensing

UNIT-III

Introduction to remote sensing: Energy and radiation principles, energy-atmosphere interaction, energy-earth surface features interaction, spectral signatures. Resolution of Remote Sensing data: Spatial, spectral, radiometric and temporal.

UNIT-IV

Remote sensing types: Natural, technology assisted, active, passive, photographic, non-photographic, etc.

Type of aerial photographs and satellite imageries: Classification, characteristics and applications.

Sensor Platforms: Ground based, air borne and space borne, earth resources satellite systems: LANDSAT, SPOT, IRS, ERS, IKONOS, etc.

UNIT-V

Image errors due to tilt, relief, optical distortions, image restoration and rectification, Photogrammetry: Simple geometry of vertical photograph measurement of scale, height, and slope from the vertical photographs.

UNIT-VI

Digital image processing: Introduction to image processing system: hardware and software, GPS and its use in the selection of training sets and field verification of interpreted data.

REFERENCES BOOKS:

1. American Society: Manual of Remote Sensing, Vol. 1 and II, Falls Church, of Photogrammetry Virginia, 1975.
2. Aronoff, S.: Geographic Information Systems: A Management Perspective, WDL Publications Ottawa, Canada, 1992.
3. Barret, E.C. & Curtis, E.F.: Remote Sensing of Environment, Second Edition, 1982.
4. Curran, Paul J.: Principles of Remote Sensing, Longman, Hong Kong, 1988.
5. ESRI: Understanding GIS, Environmental Systems Research Institute, U.S.A., 1993.
6. Jeffrey S. & John, E. : Geographic Information Systems - An Introduction, Prentice Hall, New Jersey, USA, 1990.
7. Jensen, J.R.: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall, New Jersey, 1986.
8. Michael F. Good child: Introduction to GIS, Santa Barbara, California, & Karan K. Kemp (eds.) NGGIA, 1990.

MPGEO-103 ENVIRONMENT GEOGRAPHY

UNIT-I

Climatic and Biotic Hazards:

1. Biotic hazards: Deforestation and loss of bio-diversity-impact and conservation of biotic resources
2. Concept of hazards and disaster. Natural gas- natural and man-made hazards
3. Occasional climatic hazards: Hailstones and tornadoes- mechanism, environmental impact and management
4. Seasonal Climatic hazards: Flood, and drought- mechanism, environmental impact and management

UNIT- II

Other Terrestrial Hazards in the Indian Sub-continent:

1. Edaphic hazards: Salinization and Desertification- Mechanism, impact and management
2. Geomorphic hazards: Landslide, River bank erosion and Coastal erosion—mechanism, impact and management
3. Tectonic hazards: Earthquake—impact and precautionary measures
4. Water related hazards: Contamination of ground water and fall of pie zometric level

UNIT- III

Human Development in the Third World:

1. Concept of development and under development: Basic indicators of economic development
2. Economic disparity as constraint of development: per capita income, purchasing power and standard of living
3. Poverty: Poverty line, Unemployment, Dependency ratio, Work participation and Poverty alleviation
4. Economic impact of globalization

UNIT- IV

Human Development in the Third World:

1. Basic indicators of human and gender development
2. Social inequality as constraint of development: caste and religious fundamentalism; gender bias
3. Demographic constraint; Population growth. Malnutrition. Food security and Hunger. Morbidity and Mortality
4. Sustainable development
5. Figures in the parentheses indicate number classes required

UNIT- V

1. Environment-development debate: Environmental movements: Chipko, Silent valley & Narmada Bachao Andolan.
2. Environmental ethics; Concept of Sustainable Development.