

Unit - I

Geographical Information Systems - definition, development, data sources, data structures, raster and vector, data capturing, pre-processing, Introduction to Geomorphology and Geology, Study the topography of India, Morphometric analysis with the help of remote sensing & GIS techniques.

Unit - II

Concept and scope, data manipulations and product generation- Environmental GIS, Data acquisition system using GPS On line GIS applications.

Unit - III

Spatial data; sources of error and data quality; database design, convention, mapping concepts and Coordinate systems.

Methods of spatial interpolations in Geographical Information Systems; visualizations in Geographical Information socio-economical terrain, climate and socio economical parameters to target the vulnerability due to natural disasters using GIS and Remote Sensing.

Unit - IV

Over view of GIS software - Arc Info; Arc View Principles, operation protocols and hands on training query based information retrieval Web GIS Online GIS and its data applications. Development of GIS based decision support for disaster risk reduction.

Unit - V

Mainstreaming "Risk", Role of science and technology in Disaster Risk Reduction, Strategies of Risk reduction, International Mobilization of Risk reduction; Process of Risk assessment, Analytical systems for risk assessment, Campus Shooting, Financial Emergency, Natural hazard/ risk assessment, Understanding climate risk, Mapping of risk assessment, Decision making for risk reduction, Problems in risk assessment; Rationale for people's participation, Role of civil society organizations, Impact of Globalization, Activities and roles for the community action Risk reduction, Participatory risk assessment methods;

Suggested readings

- Remote Sensing Principles & Applications - B.C. Panda - Viva Book Pvt. Ltd.
- Remote Sensing and Geographical Information systems - M. Anji Reddy JNTU Hyderabad 2001, B.S. Publications.
- Remote Sensing and its applications - LRA Narayana - University Press 1999.
- Principles of Geo physical Information Systems - Peter A Burchard and Rachael, A. Mc Donnell- Oxford Publishers 2004.
- Concepts & Techniques of GIS - C.P.Lo Albert, K.W. Yongg - Prentice Hall (India) Publications.
- GIS - Kang tsung chang, TMH Publications & Co.,
- Basics of Remote sensing & GIS - S.Kumar- Laxmi Publications.
- Fundamental of GIS by Mechanical designs John Wiley & Sons