PEN6J004 REMOTE SENSING AND GIS

Module I

Introduction , Types , Application and importance of Remote Sensing; Physics of Remote Sensing; TheElectromagnetic spectrum; Spectral Reflectance Curves; Spectral signatures; Resolution.

Module II

Remote Sensing Platforms: Ground, airborne and satellite based platforms; Some important RemoteSensing Satellites.Sensors: Passive and Active Sensors; Major Remote Sensing Sensors; Satellite band designations andprincipal applications; Colour / False Colour; Aerial Photography/ Aerial Photo Interpretation.

Module III

Digital Image Processing: Pixels and Digital Number; Digital Image Structure; Format of RemoteSensing Data; Image Processing functions: Image Restoration, Image Enhancement, ImageTransformation, Image Classification and Analysis; Image interpretation strategies. GeographicInformation System: Introduction; Preparation of thematic map from remote sensing data; Co-ordinatesystems; GIS components: Hardware, software and infrastructures; GIS data types: Data Input and DataProcessing; DEM/ DTM generation.

Module IV

Integration of GIS and Remote Sensing – Application of Remote Sensing and GIS – Water resources –Urban Analysis – Watershed Management – Resources Information Systems. Spatial planning approach.Global Positioning System – an introduction.

Books & References :

1. Remote Sensing and GIS - Anji Reddy M., The Book Syndicate, Hyderabad, 2000.
2. Principles of Geographical Information Systems - P A Burrough and R. A. McDonnell, OUP, Oxford, 1998.
3. Remote Sensing for Earth Resource- Rao, D.P., AEG Publication, Hyderabad, 1987.
4. Geographic Information System- Kang Tsung Chang, Tata Mc Graw Hill, Publication Edition, 2002.