ELECTIVE V (EC): REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM (GIS)

UNIT 1

Remote sensing data acquisition - optical, mechanical scanning, charge - coupled device (CCD) digitization, video digitization, RS data already in a digital format: Landsat MSS and TM sensor systems, SPOT sensor systems. Aircraft multiple spectral scanners, Digital image data formats.

UNIT 2

Satellite image preprocessing and Enhancement; Statistical extraction and histogram computation RS data; Radio data, Image reduction and magnification - contrast enhancement, rationing, spatial filtering edge enhancement - PCA - vegetation indices texture transformation.

UNIT 3

Thematic Information extraction and change detection; supervised, unsupervised classification, combining ancillary and contextual data in the classification - land use classification, accuracy, site specific classification accuracy - Nature of change detection and change detection algorithms.

UNIT 4

Interface of remote sensing and geographical Information systems; Fundamentals of GIS concepts - data encoding, data management, data manipulation, data output.

UNIT 5

Remote sensing in floods and droughts, reservoir sedimentation, forest cover and mineral mapping, mangroves, wildlife habitat, biosphere and biomass estimation.

REFERENCES

- Chowengredt, R.A. 1983. Techniques for image processing and classification in Remote sensing. Academic press Inc. New York.
- Jenson, J.R. Introductory Digital Image processing: Remote sensing perspective. Prentice Hall, Engelwood cliffs. NJ.
- Swain P.H. and S.M.Davus .1978. Remote sensing: The Quantitative approach McGraw Hill book Company, New York.
- Townshand J.R.G. 1981 .Terrain Analysis and Remote Sensing .George Allen and Unwin Ltd., London.