

4th Semester	RCI4D003	Remote Sensing and Geographic Information System	L-T-P 3-0-0	3 CREDITS
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Module - I (07 Hrs)

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

Module - II (10 Hrs)

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

Module - III (10 Hrs)

Digital Image Processing: Pixels and Digital Number; Digital Image Structure; Format of Remote Sensing Data; Image Processing functions: Image Restoration, Image Enhancement, Image Transformation, Image Classification and Analysis; Image interpretation strategies.

Module - IV (09 Hrs)

Geographic Information System: Introduction; Preparation of thematic map from remote sensing data; Co-ordinate systems; GIS components: Hardware, software and infrastructures; GIS data types: Data Input and Data Processing; DEM/ DTM generation.

Module - V (09 Hrs)

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:

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