KL University
Department of Electronics & Computer Engineering
M.Tech (wcsn) First Semester 2015-2017

Course Code : 15-EM51F2
Course Title : Remote Sensing
Course Structure : 3-0-0
Credits : 3

SYLLABUS:

Unit-1

EMR AND ITS INTERACTION WITH ATMOSPHERE & EARTH MATERIAL: Definition of remote sensing and its components – Electromagnetic spectrum – wavelength regions important to remote sensing – Wave theory, Particle theory, Stefan-Boltzman and Wein's Displacement Law – Atmospheric scattering, absorption – Atmospheric windows – spectral signature concepts – typical spectral reflective characteristics of water, vegetation and soil.

Unit-2 PLATFORMSANDSENSORS Types of platforms – orbit types, Sun-synchronous and Geosynchronous – Passive and Activesensors – resolution concept – Pay load description of important Earth Resources and Meteorological satellites – Airborne and spaceborne TIR and microwave sensors.

Unit-3 IMAGEINTERPRETATIONANDANALYSIS Types of Data Products – types of image interpretation – basic elements of image interpretation- visual interpretation keys – Digital Image Processing – Pre-processing – imageenhancement techniques – multispectral image classification – Supervised and unsupervised.

Unit-4 GEOGRAPHICINFORMATIONSYSTEM Introduction – Maps – Definitions – Map projections – types of map projections – map analysis –GIS definition – basic components of GIS – standard GIS softwares – Data type – Spatial andnon-spatial (attribute) data – measurement scales – Data Base Management Systems (DBMS).

Unit-5 DATAENTRY,STORAGEANDANALYSIS Data models – vector and raster data – data compression – data input by digitization andscanning – attribute data analysis – integrated data analysis – Modeling in GIS Highway alignment studies – Land Information System.

TEXTBOOKS

1. Lillesand, T.M., Kiefer, R.W. and J.W.Chipman. (2004). Remote Sensing and Image Interpretation. V Edn. John Willey and Sons (Asia) Pvt. Ltd., New Delhi. Pp:763. 2. Anji Reddy, M. (2001). Textbook of Remote Sensing and Geographical Information System. Second edn. BS Publications, Hyderabad.

REFERENCES

1. Lo. C.P.and A.K.W.Yeung (2002). Concepts and Techniques of Geographic Information Systems. Prentice-Hall of India Pvt. Ltd., New Delhi. Pp:492.

2. Peter A.Burrough, Rachael A.McDonnell (2000). Principles of GIS. Oxford University Press.
3. Ian Heywood (2000). An Introduction to GIS. Pearson Education Asia.