Course Type	Course Code	Name of the Course	L	T	P	Credits
DP	NGPC517	Remote Sensing Principles Practical	0	0	2	1

Course Objective
Practical understanding on fundamental of Remote Sensing Principles
Learning Outcomes
Upon successful completion of this course, students will be able to • Basic understanding of Electromagnetic Radiation laws • Fundamentals of different types targets characterization using spectral reflectance curve. • Basic understanding of different satellite images

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1.	Comparative studies of energy distribution of in different ranges of EMR using Matlab	4	Practical understanding Electromagnetic Radiation laws
	Comparative studies of existence for different kinetic temperature using Matlab	2	
	Understanding the relationship Wien's displacement law and Stefan Boltzmann law Plank's law of radiation	2	
	Numerical problem related with kinetic-radiant temperature, radiometric quantities, Plank's law, Wien's displacement law and Stefan Boltzmann law for calculating various radiation parameters	2	
2.	Calculation of reflectance, absorptance, emissivity and thermal Inertia of rocks.	2	Practical understanding of target characterization in RS Lab
3.	Lab measurement of spectral reflectance curve over various land features in field within visible and near infrared region using spectro- radiometer and their significance in remote sensing	2	Practical understanding of target characterization using spectral reflectance curve
	Collection and interpretation of field spectral reflectance curves taken within visible and near infrared region for vegetation, water, rock and soil and their importance in remote sensing.	4	
	Study of given black-white satellite imagery and noting down of various image details as given there in. Study of various imagery acquired IRS, IKONOS, SPOT, Landsat, etc.	2	Practical understanding of different satellite images
4.	Study of standard False Colour composite (FCC) image.	2	
	Estimation of scale, drawing latitude, longitude and north direction, identification of geological, morphological, manmade features.	2	
	Calculation of histogram and different statistics of given digital remote sensing data	2	

	Basic understanding of satellite digital data, raster and vector data handling	2	
	Total	**28**	

Text Books

1. B. Bhatta., Remote Sensing and GIS. Oxford University press, pp.984.
2. Lillesand TM and Kiefer R W, Remote Sensing and Image Interpretation, John Wiley Publication.

Reference Books

1. Seigel, B S and Gillespie, Alan, Remote Sensing in Geology, John Wiley Publication
2. George Joseph, Fundamentals of Remote Sensing, Universities Press, pp.472,
3. M. Anji Reddy, Remote Sensing and Geographical Information systems
4. Thomas M. Lillesand, Ralph W. Kiefer and Jonathan W. Chipman, Remote Sensing and Image Interpretation
5. Rafael C. Gonzalez, Richard E. Woods and Steven L. Eddins, Digital Image Processing Using Matlab
6. Floyd F. Sabins, Remote sensing: principles and interpretation
7. Jensen, J.R. 2007. *Remote Sensing of the Environment - an Earth Resource Perspective.*

Rao, D.P. Remote Sensing for