

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	GIS and Remote Sensing
2.	Course Number	CE5026
3.	Status of the Course	Elective
4.	Structure of Credits	1-0-3-3
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Civil Engineering
8.	To take effect from	July 2019
9.	Prerequisite	CoT
10.	Whether approved by the Department	Yes
11.	Course Objective: The primary objective of the course is to introduce Geographic Information System (GIS) and analysis of remote sensing image data using example datasets from real-world problems. This course provides students hands-on experience in analyzing and processing remote sensing image data. The students will learn various geospatial analysis tools for natural resource management, water resources management, environmental engineering, transportation engineering and agriculture.	
12.	Course Content: Introduction to principles of Remote Sensing (RS) technology, the tool to obtain information on the earth from decimeter level to km level locally and globally, as well as basic remote sensing image processing techniques and skills; Introduction to principles, concepts and applications of Geographic Information Systems (GIS): a decision support tool for planners and managers of spatial information; Database development, manipulation and spatial analysis techniques for information generation; GIS applications such as natural resource management, environment, transportation engineering, agriculture, information system, etc will be discussed through mini project and laboratory exercises.	
13.	Text book(s): 1. Paul A L, Goodchild M F, Maguire D J and Rhind D W, <i>Geographic Information Systems and Science</i> , Wiley (2005). 2. Lillesand T, Kiefer R W and Chipman J, <i>Remote Sensing and Image Interpretation</i> , Wiley (2015).	
14.	Reference(s): 1. Campbell J B, Wynne R H, <i>Introduction to remote sensing</i> , Guilford Press (2011).	