1.	Title of the course	GIS and Remote Sensing
2.	Course number	CE525M
3.	Structure of credits	1-0-3-3
4.	Offered to	PG
5.	New course/modification to	Modification To CE5026/8
6.	To be offered by	Department of Civil and Environmental Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** 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.	
10.	**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	
11.	**Textbook(s):** 1. Paul A L, Goodchild M F, Maguire D J and Rhind D W, Geographic Information Systems and Science, Wiley (2005). 2. Lillesand T, Kiefer R W and Chipman J, *Remote Sensing and Image Interpretation*, Wiley (2015).	
12.	**Reference(s):** 1. Campbell J B and Wynne R H, *Introduction to remote sensing*, Guilford Press (2011).	