



**Course Name:**

Remote Sensing (RS) and Geographic Information System (GIS)  
Application in Civil Engineering and Laboratory

<b>Course Number:</b> 20-896	<b>Credit:</b> 3
<b>Program:</b> Graduate	<b>Course Type:</b> General Selective
<b>Prerequisite:</b> -	<b>Corequisite:</b> -

**Course Description (Objectives):**

The course aims to equip students with foundational knowledge and practical skills in Geographic Information Systems (GIS) and Remote Sensing (RS) for civil engineering applications. It focuses on data analysis, geospatial mapping, and the integration of advanced technologies for terrain and watershed analysis.

**Course Content (outline):**

- Chapter 1: Geographic Information System (GIS)
- Chapter 2: Remote Sensing (RS)

**References:**

- “GIS Fundamentals: A First Text on Geographic Information Systems,” P. Bolstad, 4th Ed., Eider Press, 2012.
- “Introduction to Remote Sensing,” J.B. Campbell, and R.H. Wynne, Guilford Press, 2011.
- “Principles of Geographic Information Systems,” A. Rolf, R.A. de By, ITC Educational Textbook Series, 2000.
- “Principles of Remote Sensing,” L.L.F. Janssen, 2000, ITC Educational Textbook Series.
- “GIS Implementation for Water and Waste Water Treatment,” WEF, Water Environmental Federation Manual of Practice No. 26, McGraw Hill, 2005.
- “Remote Sensing in Hydrology and Water Management,” G.A. Schultz, & E.T. Engman, Springer, 2000.