



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Spatial Analysis Techniques for Civil Engineering

CIVILEN 5421

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Lab

Course Description:

Principles of spatial analysis techniques for application to civil engineering, particularly in the water resources and geotechnical areas.

Prerequisites and Co-requisites:

Prereq: 5001 (607), or permission of instruction.

Course Goals / Objectives:

- Develop an understanding of spatial analysis techniques for civil engineering applications
 - Develop an understanding of spatial analysis tools relevant for civil engineering
 - Develop a knowledge of the fundamental concepts of remote sensing for image data interpretation and analysis
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Course Topics:

- Introduction to course; spatial data acquisition methods for terrain modeling
 - Photogrammetric methods of data acquisition; orthophotography
 - Digital Elevation Models (DEMs); developing continuous surfaces from maps and point data
 - Watershed analysis; hydrologic modeling in GIS
 - Geostatistics; errors and quality control; spatial interpolation
 - GIS models and modeling
 - Bathymetric mapping; water resources applications
 - Network and dynamic segmentation; transportation applications
 - Future of spatial data analysis in civil engineering applications
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Designation:

Elective