



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Engineering Surveying

CIVILEN 5410

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Lab

Course Description:

Surveying applications for engineering, construction, mining and transportation work. Route surveying and geometric design; topographic site surveys and mapping; earthwork computations.

Prerequisites and Co-requisites:

Prereq: 2410, GeodSciE 410, or 450, and enrollment in CivilEn major, or permission of instructor.

Course Goals / Objectives:

- Be familiar with the basic requirements of mining surveying and working with 3-D data
 - Be familiar with working on a large engineering surveying project
 - Master being able to measure and set-out works for engineering construction
 - Master the use of local coordinate systems for engineering
 - Master working with curves, both horizontal and vertical
 - Be familiar with a wide range of engineering surveying techniques
-

Course Topics:

- Computational aspects of construction surveying
 - Resection: horizontal and vertical; intersection
 - Fundamentals of route location
 - Horizontal curves: circular curves; compound and reverse curves; spiral curves. Vertical curves. Highway design; sight distance and superelevation
 - Earthworks and computations
 - Reconnaissance for route location; mapping of routes
 - Introduction to digital elevation models (DEMs); mining surveying; borehole surveying; geological surveying; 3-D surveying; deformation surveying
 - Construction site surveying: methods and computations; site design and safety
-

Designation:

Required