

SE 310 Engineering Surveying

Course Description

This course introduces the student to application of ground surveying in the field of civil engineering. The student will be trained to collect field data for topographic mapping using optical instruments: tacheometer and subtense bar as well as electronic total station. He will also be trained to use precise levels especially in construction surveying. He will also be able to compute cross-sectional areas and volumes and to plot mass haul diagram. He will also be introduced to tunnel surveying.

Prerequisite(s): SE 211 Plane Surveying 1.

Textbook(s) and Other Required Materials:

Engineering Surveying, by W. Schofield, Butterwrths, London, UK.

Course Objectives:

Students completing this course successfully will be able to use optical and electronic surveying instruments to collect field data for topographic mapping as well as in lay out in civil engineering projects, and will be able to carry out earthworks calculations required in construction of civil engineering projects.

Topics Covered:

- Tacheometric surveying and topographic mapping
- Precise leveling
- Construction surveying
- Introduction to transitional curves
- Earthworks Computations
- Tunnel Surveying
- Applications of Electronic Surveying Equipments

Class/laboratory Schedule: Two 50-minutes lectures and 2-hours field work each week.

Outcome Assessment: The assessment is done through grades on tutorial problems given as homework, field work and report, midterm exam and final exam.

Instructor: Prof. Ismat M. El Hassan.