NorthWest Arkansas Community College
Workforce & Economic Development
Division Construction Technology Department Course Outline

Course Number and Title

CST 2513 Surveying (F, S)

Catalog Description

A study of the fundamentals of measuring techniques as they relate to leveling, construction layout, and mapping. Emphasis is given to the care and use of optical and electronic instruments. Two hours lecture-discussion and one two-hour laboratory period per week.

Prerequisite

MATH 1003 or higher with a "C" or better.

Credit Hours/Contact Hours/Load Hours

3/3/3

Target Audience / Transferability

This course is designed for students completing the requirements for the two-year NWACC Associate of Applied Science degree in Construction Technology. This course can also be useful for construction professionals needing current knowledge. This class will transfer to some universities.

Student Learning Outcomes

Upon completing this course, the student should be able to:

- Set up and operate an optical level and an electronic total station.
- Reduce Levelling, profile, and topographic field data.
- Use basic trig functions to calculate coordinates and layout dimensions.
- Calculate Closure error and adjustments for a basic closed traverse.
- Layout a simple structure using baseline offset or radial method.
- Calculate earthwork volumes.
- Calculate the basic elements of a horizontal and vertical curve.
- Interpret raw data file generated from a field data collector.
- Explain the basic components of a survey grade GPS system.
- Plan a control network for the layout of a large commercial construction site.
- Apply basic surveying techniques for construction layout and control.

Topics

- Construction drawings
- Surveying equipment
- Timed setup of surveying devices
- Topography
- Field book

Forms of Assessment

Written exams, timed instrument setup, lab exercises, and homework assignments.