

CM 130: SURVEYING METHODS AND APPLICATIONS

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	3
Total Contact Hours:	54
Lecture Hours :	54
Lab Hours:	0
Hours Arranged:	0
Outside of Class Hours:	108
Prerequisite:	CM 110.
Transferable to CSU:	Yes
Transferable to UC:	No
Grading Method:	Standard Letter

Catalog Course Description

This course covers the theory and practice of plane surveying use of tools, instruments and methods for measuring distances, angles, elevations, cuts, fills, topographic information, building layout. 54 lecture hours.

Course Objectives

- Given specific building survey data, demonstrate ability to identify building boundaries.
- Conduct survey measurements of angles and distances on actual construction project sites.
- Understand the layout of building footprints on sites.
- Apply Differential Leveling techniques.
- Understand layout of civil improvements on sites.
- Given actual field survey markers, demonstrate ability to identify and interpret basic field survey data and nomenclature.
- Analyze survey data, sheets and calculations for accuracy and completeness.
- Explain and demonstrate proper use of most commonly used surveying tools & materials.

Major Course Content

1. Use of Survey Tools and Materials
2. Differential Leveling
3. Traverse Calculations – Closure, Adjustments, Coordinates, Areas
4. Intersections - Bearing-Bearing, Bearing-Distance, Distance-Distance
5. Area Partitions
6. Horizontal Curves – Formulas, Calculations, Areas
7. Legal Descriptions And Rules Of Boundary Construction

8. State Plane Coordinates-Projections, Terminology, Surface To Grid Conversions, Traverse Calculations, Areas
9. State Plane Coordinates-Projections, Terminology, Surface To Grid Conversions, Traverse Calculations, Areas
10. Global Positioning Systems – System Components & Procedures, Error Sources, Applications
11. Global Positioning Systems – System Components & Procedures, Error Sources, Applications
12. Construction Field Survey Markers

Suggested Reading Other Than Required Textbook

Read instructor-assigned articles on the use of Satellites to support modern surveying techniques.

Examples of Required Writing Assignments

Write a report that addresses the challenges of laying-out the different types of construction projects.

Examples of Outside Assignments

Given basic survey data sheet handouts on a building and/or civil improvement, students will review and identify the basic layout and dimensions.

Instruction Type(s)

Lecture, Online Education Lecture