



Course Outline

2026-2027 Catalog

CNST 5 - Plans, Specifications, & Surveying

Catalog Description

Transfer Status: CSU

Unit(s): 3.00

Lecture: 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: This course will introduce students to reading construction documents and specifications used in civil, residential, commercial, industrial, and specialty construction. The correlation of plans and specifications to the contract documents will be introduced, as well as the use of the plans for material takeoff. The introduction to surveying will cover fundamental surveying methods, field practices in measuring, note taking/mapping, and staking.

Objectives

Upon successful completion of this course, the student should be able to:

1. Interpret the organization, specific purposes, and information provided in standard plans and specifications.
2. Use an architectural and engineering scale.
3. Demonstrate proficiency in the use of Onscreen Takeoff (OST), PlanGrid, and Bluebeam Revu software [ACCE-SLO #10]
4. Employ business ethics and accepted codes of conduct to analyze ethical decision making best practices [ACCE-SLO #6].
5. Demonstrate the ability to determine dimensions from scale or call out.
6. Discuss the purpose of surveying in relation to property description, construction document preparation, and construction staking.
7. Demonstrate a proficiency in survey field book data entry, map drawing, and note taking.
8. Demonstrate the ability to complete a differential and profile level course.
9. Demonstrate the ability to perform a foundation layout.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Introduction to construction documents	4.00
Introduction to CSI format and plan/specifications format.	2.00
Introduction to scaling and dimensioning practices	2.00
Introduction to standard plan symbols and notations	2.00
Introduction to plan views, sections, and details	4.00
Introduction to electronic plans and software for construction	4.00
Introduction to construction plans for estimating	2.00
Introduction to surveying for construction	4.00
Introduction to surveying equipment and procedures	2.00
Introduction to differential leveling	4.00
Introduction to profile leveling	2.00
Introduction to building layout	2.00
Total Hours:	34.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Introduction to construction documents	6.00
Introduction to CSI format and plan/specifications format	3.00
Introduction to scaling and dimensioning practices	3.00
Introduction to standard plan symbols and notations	3.00
Introduction to plan views, sections, and details	6.00
Introduction to electronic plans and software for construction	6.00
Introduction to construction plans for estimating	3.00
Introduction to surveying for construction	3.00
Introduction to surveying equipment and procedures	6.00

<u>Topics</u>	<u>Lab Hrs</u>
Introduction to differential leveling	6.00
Introduction to profile leveling	3.00
Introduction to building layout	3.00
Total Hours:	51.00

Methods of Instruction

- A. Demonstrations
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Lecture
- D. Multimedia Presentations
- E. Laboratory projects

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Homework
- D. Lab Projects

Examples of Assignments

Reading Assignments

1. Read the specifications for rebar and explain why architect is calling out the grade of bar to be used
2. Read the provided property description and determine in which township the property is located.

Writing Assignments

1. Write an RFI (Request for Information) to the architect with a question that you have concerning the Construction Documents.
2. Write a detailed sequence for the proper way to set up a level instrument.

Out-of-Class Assignments

1. Read the Construction Contract and explain the difference between Force Majeure and T&M work.
2. Using your plans, find the total square footage of concrete sidewalk.

Recommended Materials of Instruction

Other Learning Materials

There is no textbook for the class. Reading material will be provided for the student, as required, and will be distributed in class or on Canvas.

All tools listed in the Core Program Guide.

Minimum Qualifications

Industrial Technology
 Manufacturing Technology
 Building Codes And Regs
 Construction Management
 Construction Technology
 Engineering (Masters Required)
 Engineering Technology (Masters Required)

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