



Course Outline

2026-2027 Catalog

CNST 21 - Analysis of Construction Drawings and Specifications

Catalog Description

Transfer Status: CSU

Unit(s): 3.00

Lecture: 51.00 Contact hours/102.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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Course Description: This course is an advanced study of 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 reinforced, as well as the use of the plans for material takeoff. The student will be introduced to the use of plans and specifications for materials quantity takeoff and the correlation to the project estimate.

Objectives

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

1. Describe the organization, specific purposes, and information provided in standard plans and specifications.
2. Read and interpret 2D plans and specifications.
3. Be proficient in the use of an architectural and engineering scale.
4. Interpret construction documents such as Onscreen Takeoff (OST), PlanGrid, and Bluebeam Revu software [ACCE-SLO #10].
5. Demonstrate an understanding of business and management fundamentals as they relate to construction activities [ACCE-SLO #6].
6. Apply scheduling techniques to project planning activities [ACCE-SLO #12].
7. Describe the purpose of surveying in relation to property description, construction document preparation, and construction staking.
8. Perform economic project and life-cycle evaluations through the use of accounting data, cost analyses, and related investment parameters [ACCE-SLO #20].

Course Content

Topic Titles / Suggested Time Topic	
	<u>Lecture</u>
<u>Topics</u>	<u>Lec Hrs</u>
Construction documents	6.00
Project delivery methods	6.00
CSI format and plan/specifications format	3.00
Scaling and dimensioning practices, standard plan symbols and notations	3.00
Electronic plans and software for construction	6.00
Quantity takeoff to estimation and the ethics involved	3.00
Plan use for quantity takeoff	6.00
Introduction to estimates	6.00
OST for plan takeoff	6.00
Bluebeam Revu for document creation and communication	3.00
PlanGrid for construction productivity	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

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Homework

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 chapter on linear measurement in the online manual for OST and be prepared to discuss in class.

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 project in Sketchup.

Out-of-Class Assignments

1. Read a construction contract and explain the difference between force majeure and time and materials (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

Engineering (Masters Required)

Engineering Technology (Masters Required)

Industrial Technology

Manufacturing Technology

Building Codes And Regs

Construction Management

Construction Technology

Created/Revised by: Williams, Tom

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