



Course Outline

2026-2027 Catalog

CNST 40 - Construction Cost Estimating I

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 introduction to cost estimation in construction. The techniques, organization, and forms utilized in the various construction trades will be analyzed and practiced. The student will learn the procedures for quantity take-off, productivity calculation, bid tabulation, and the formulation of basic overhead and profit calculations through practical applications.

Objectives

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

1. Apply the legal and moral obligations of construction bids and proposals.
2. Interpret Bid Documents.
3. Identify and analyze the components of a construction estimate.
4. Identify and properly apply the different bid types.
5. Demonstrate quantity take-off.
6. Discuss production rates as they apply to construction disciplines.
7. Demonstrate the formulation of production rates.
8. Demonstrate proper bid tabulation.
9. Demonstrate basic overhead calculation.
10. Demonstrate basic profit calculations.

Course Content

Topic Titles / Suggested Time Topic	
	<u>Lecture</u>
<u>Topics</u>	<u>Lec Hrs</u>
Introduction to construction estimation	6.00
Introduction to contract and construction law	3.00
Introduction to estimation and bid documents	6.00
Introduction of the estimation procedure and its components	6.00
Introduction to bid types	3.00
Introduction to quantity take-off	6.00
Introduction to production calculation	6.00
Introduction to bid tabulation	6.00
Introduction to overhead relationship and calculation	3.00
Introduction to profit relationship and calculation	3.00
Introduction to job costing	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 selection on quantity take-off and be prepared to discuss in class.
2. Read assigned trade journal article and be prepared to discuss in class.

Writing Assignments

1. Write an outline of main estimate categories for the Butte College Field House Construction Project.
2. Write a one-page essay, explaining how unit price estimating differs from lump sum estimation and the advantages/disadvantages of each.

Out-of-Class Assignments

1. Utilizing the Butte College Field House Construction Plans and Specifications estimate the cost of installing the concrete handicap ramp on the east side of the building.
2. Go to a local construction site and from a safe distance, observe a construction activity for one hour and document all labor and materials used, use that information to create an estimate for that hour.

Recommended Materials of Instruction

Robert L. Peurifoy and Garold D. Oberlender. (2014). Estimating Construction Costs. *McGraw Hill Publishing, 6th.*

Other Learning Materials

All tools listed in the Core Program Guide.

Minimum Qualifications

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

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