



South Central College

CTLS 2830 Construction Estimating and Inspection

Course Outcome Summary

Course Information

Description	This course covers the study and performance of procedures necessary in estimating quantities and costs and construction inspection of heavy construction. Emphasis is placed on construction inspection through measurement of quantities, documentation, record keeping, and contract document interpretation. The equipment and materials utilized are also presented. (Prerequisite: CTLS 1110)
Total Credits	4
Total Hours	80

Types of Instruction

Instruction Type	Credits/Hours
Lecture	3/48
Lab	1/32

Pre/Corequisites

CTLS 1110

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Describe the estimating process and procedures

Learning Objectives

- Describe the estimating process
- Summarize how bids are opened
- Evaluate scheduling
- Obtain and review bid documents

2. Explain the takeoff procedure

Learning Objectives

- Differentiate items to measure
- List takeoff rules

Organize the takeoff
Utilize the computer for takeoffs

3. Measure heavy construction quantities

Learning Objectives

Calculate sitework and excavation quantities
Calculate concrete and asphalt quantities
Calculate utility quantities
Calculate demolition

4. Price items in heavy construction

Learning Objectives

Price excavation and backfill
Price concrete and asphalt work
Price utility installation
Summarize the use of RSMeans for Heavy Construction

5. Describe the duties and responsibilities of an inspector

Learning Objectives

Identify construction records
Summarize the duties of an inspector
Evaluate the ethics requirements of inspectors
Examine the responsibilities of the representatives involved in construction

6. Utilize plan reading for inspection

Learning Objectives

Examine construction plans
Read contours
Describe plan and profile sheets
Examine highway plans and cross sections

7. Describe construction staking

Learning Objectives

Calculate stationing, curves, and super elevations for staking
Calculate cut, fill, and slope stakes
Perform staking

8. Describe construction equipment utilized during heavy construction

Learning Objectives

Describe the use of graders, dozers, excavators, compactors, and dirt pans
Summarize the operation of slip-form curb and paver machines
Summarize the operation of profilers and reclaiming machines

9. Describe rock excavation

Learning Objectives

Describe methods to cut slopes in rocky soil
Describe methods of ripping and excavating rock
Describe methods of compacting fill with rock
Summarize safety precautions used during rock excavation

10. Summarize compaction

Learning Objectives

Summarize compaction testing
Examine compaction equipment
Describe proof rolling
Describe methods of repairing unsuitable compaction

11. Describe asphalt paving

Learning Objectives

Describe asphalt pavement removal
Describe asphalt paving equipment
Calculate tonnage of asphalt required for paving
Calculate tack coat quantities

12. Describe pipe and manhole construction**Learning Objectives**

Summarize the construction requirements for pressure and gravity pipe construction
Determine pipe requirements from specifications
Summarize pressure and vacuum testing of pipes and manholes
Describe repairs of pipes and manholes
Examine trench safety requirements

13. Summarize erosion control requirements on construction sites**Learning Objectives**

Review construction plans BMP's
Describe erosion control practices
Summarize a construction plans SWPPP
Describe timing for erosion control

SCC Accessibility Statement

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