

Public Works Inspection I (12 Week Course)

PREREQUISITE: INTRODUCTION TO PUBLIC WORKS

MAXIMUM ENROLLMENT: 75

GRADING METHOD: Instructor's choice: Grade or Pass/No Pass.

COURSE DESCRIPTION

A comprehensive course in public works inspection, including Portland cement concrete, asphaltic concrete, soils, base and subgrade materials. Contracts and specifications and plans will be discussed. Utilities, including underground water, sewer and storm drains will be covered, with emphasis on the safety aspects of trenching, tunneling and jacking. Responsibilities of the contractor, the engineer, the inspector and the owner will be included. Surveying and staking will be reviewed. Prime consideration will be given to inspection records, duties and job diary techniques.

COURSE CONTENT

I. Introduction

- A. Course requirements
- B. Overview of course content

II. Portland Cement Concrete

- C. Mixtures
- D. Finishing and curing
- E. Calculations - costs

III. Asphaltic Concrete Paving

- A. Mixtures and temperatures
- B. Finishing and curing
- C. Calculations and costs

IV. Soils

- A. Dangers - slippage and cavitation
- B. Basic foundation
- C. Stabilization and erosion
- D. Compaction

V. Sewers and Storm Drains

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- A. Specifications and design
- B. Capacities and flow characteristics
- C. Locations and manholes
- D. Construction

VI. Safety

- E. Legal
- F. Practical
- G. Guarding
- H. Traffic control

VII. Contracts and Specifications

- A. Bonds
- B. Insurance
- C. Workman's compensation
- D. Permits and required plans

VIII. Water Systems

IX. Inspection - Duties - Records

X. Telephone, Gas, Electric, Utilities

- A. Underground utilities
- B. Above ground utilities
- C. Legal limitations

XI. Survey and Staking

- A. Type and locations of survey points
- B. Requests for survey
- C. Requirements

XII. Engineering and Construction Responsibility

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XIII. Grading and Sub-Grade Preparation

- A. Balance earthwork
- B. Existing structures
- C. Terrain
- D. Design
- E. Drainage
- F. Access to adjacent properties

XIV. Base and Sub-Base Materials

- G. Design criteria
- H. Stabilization
- I. Capacities
- J. Sand and aggregates

XV. Review

STUDENT LEARNING OUTCOMES

Upon completion of this course, students will be able to do the following:

1. Communication (personal expression and information acquisition)

Technology

Information competency

A. OUTCOME: Identify, illustrate, and document work activities performed by the contractor

RATIONALE: required by the current record keeping system utilized in public works construction

ASSESSMENT: through oral presentation, demonstration and examination

B. OUTCOME: Demonstrate the ability to reference resource materials for enforcement and specifications in materials and methods necessary in both asphalt and concrete roadways to establish a minimum level of performance

RATIONALE: necessary according to industry standards

ASSESSMENT: through classroom discussion and examinations

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C. OUTCOME: Accurately reference current contract documents applicable to public works contract code and describe the contractual obligations of the contractor and the owner

RATIONALE: as required in contract law

ASSESSMENT: through classroom demonstration and examinations

2. Creative, Critical, and Analytical Thinking

A. OUTCOME: Evaluate survey notes and staking requirements

RATIONALE: necessary for horizontal and vertical control for construction as required in the public works industry

ASSESSMENT: through class demonstration and examination

OBJECTIVES

1. Identify, illustrate, and document work activities performed by the contractor
2. Demonstrate the ability to reference resource materials for enforcement and specifications in materials and methods necessary in both asphalt and concrete roadways to establish a minimum level of performance
3. Accurately reference current contract documents applicable to public works contract code and describe the contractual obligations of the contractor and the owner
4. Evaluate survey notes and staking requirements

METHODS OF EVALUATION/ASSESSMENT

Typical classroom assessment techniques

Exams/Tests

Quizzes

Sample Assignments

Students may be required to research on-line and submit a written assignment based on that research.

Students may be asked to visit relevant websites and report back to the instructor on what they have found.

Students will be given written assignments. Students may be required to research current public works regulations, methods, products and materials. Other options may include site visits and professional interviews.