

# Street Construction and Maintenance (12 week course)

Syllabus for

## STREET CONSTRUCTION & MAINTENANCE



**PREREQUISITE:** Introduction to Public Works

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

### COURSE DESCRIPTION

A course in street maintenance covering materials and methods, with emphasis on preventive maintenance of asphaltic and Portland Cement concrete pavements. Specifications, records and cost accounting systems, as well as revenue sources and budget preparation, will be reviewed. Other subjects include safety, drainage, equipment records and specifications, review of watershed management, and public relations. Codes which pertain to improvements and repair will be reviewed.

### COURSE CONTENT

#### I. Introduction and Review

- A. Review of terminology
- B. Review of subjects covered
- C. Outline subjects to be covered in this class

#### II. Portland Cement Concrete Maintenance

- A. Review maintenance practices
  - 1. Joint and crack sealing
  - 2. Spalling and scaling: repair methods and materials
  - 3. Mudjacking of settled slabs

#### III. Drainage

- A. Terminology
- B. Drainage law and liability
- C. Methods of calculating run-off

#### D. Drainage systems

#### IV. Equipment

- E. Record
- F. Specifications

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G. Specification improvement

## **V. Budget Preparation**

A. Records required

B. Methods of estimating

C. Review of presentation methods

## **VI. Revenue Sources**

A. Gas tax

1. methods of distribution

2. limitation on usage

B. Fines and forfeiture

C. Motor vehicle registration fee

D. Property taxes

## **VII. Safety Programs**

E. Elements of a successful program

F. Costs and savings

## **VIII. Laws, Ordinances, Codes**

A. Streets and highways code

1. Chapter 27 improvements

2. Chapter 22 repairs

B. Vehicle code

C. Permit ordinance

D. Subdivision ordinance

## **IX. Public Relations**

E. Telephone contacts

F. Complaints and your response

G. Public education? news releases, etc.

## **X. Traffic Signs**

H. Legal aspects

I. Types of signs

J. Equipment

K. Costs factors

## **XI. Management Principles**

## **XII. Inspection: Duties and Records**

## **XIII. Utilities: Telephone, Gas and Electric**

## **XIV. Survey Staking**

## **XV. Review and Examinations**

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## STUDENT LEARNING OUTCOMES

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

A. OUTCOME: Computation

B.OUTCOME: Demonstrate the appropriate level of knowledge and ability to list and properly maintain pavement surfaces through written assignments, oral presentations and examinations, as required by Public Works agencies

C. OUTCOME: Creative, Critical, and Analytical Thinking

D.OUTCOME: 1. compare and contrast the various elements that require consideration to establish an effective injury prevention program, according to industry standards, through written assignments and examinations

E.OUTCOME: 2. identify and describe the funding sources and the methods of estimating labor and material cost when developing a maintenance budget through written assignments, in order to perform these tasks at the job site

F. OUTCOME: Community/Global Consciousness and Responsibility

G. OUTCOME: 1. list and describe in written assignments the legal requirements and potential liability related to traffic signs, pavement markings and the Vehicle Code that are considered when creating a preventative maintenance strategy, as required in the Public Works industry

H.OUTCOME: 2. recall and explain in oral presentations and written assignments the proper techniques used to effectively respond to telephone contacts, written complaints and press releases, in order to perform these tasks in the Public Works arena

I. OUTCOME: Technology/Information Competency

J.OUTCOME: 1. demonstrate in writing the ability to identify key eliminates used to calculate run-off and design proper drainage systems, as would be necessary on the job site

K.OUTCOME: 2. compare and contrast data bases and collection methods to develop and measure effectiveness of a preventative maintenance program, according to industry standards, through written assignments and examinations

L.OUTCOME: 3. Describe, through oral presentation, the fundamentals of establishing specifications, inspection methods and proper record keeping to ensure quality work product in Public Works

## OBJECTIVES

- 1.list materials needed for the upkeep and maintenance of paved surfaces
- 2.describe the newest techniques used in street maintenance
- 3.calculate material quantities for street maintenance
- 4.define the legal obligations involved in upkeep of public property
- 5.list the necessary steps in budget preparation
- 6.Basic knowledge of how to operate equipment for

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street maintenance carefully, safely and with reliability

## **Method of Evaluation**

1. Written assignments submitted electronically
2. Written homework assignments