

PUB 157: ASPHALT AND PORTLAND CEMENT CONCRETE

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	3
Total Contact Hours:	54
Lecture Hours :	54
Lab Hours:	0
Hours Arranged:	0
Outside of Class Hours:	108
Strongly Recommended:	ENGL 101.
Transferable to CSU:	No
Transferable to UC:	No
Grading Method:	Standard Letter, Pass/No Pass

Catalog Course Description

A comprehensive course in Asphalt and Portland Cement concrete construction technology following the standards of the Asphalt Institute, standard specifications for public works construction, American Concrete Institute and the Portland Cement Association. Included will be design production, proportioning, batching, transportation, placement, consolidation, compaction and finishing of the material. Evaluation of surface defects, maintenance, inspection and safety will be covered. 54 lecture hours.

Course Objectives

- Demonstrate proper application of information contained in Asphalt and Portland Cement Concrete Mix Design sheets.
- Understand the scope of quality and ASTM testing of materials used in asphalt and concrete construction.
- Understand the Batching and Proportioning.
- Explain the uses and applications of Portland cement concrete in Public Works construction
- Describe the steps in surface preparation that meet the needs of code requirements
- Identify various surface treatments and seal costs in Asphalt Concrete.
- Compare and contrast the methods to produce Portland Cement concrete by both the American Concrete Institute method and the Portland Concrete Cement Association method.
- Identify various aggregate products, cements and admixtures
- Demonstrate knowledge of the various techniques used in concrete placements
- Demonstrate familiarity with the various Safety regulations applicable to concrete pavement operations.

Major Course Content

1. Introduction
2. Asphalt Concrete (AC)

3. Physical Properties of AC
4. Asphalt Concrete Mix Design
5. Types of AC
6. Testing Methods
7. AC Materials
8. Batching of AC
9. Transportation / Delivery
10. Placement Operations
11. Workmanship Standards
12. Hot-Mix Asphalt Paving
13. Cold-Laid Asphalt Pavements
14. Soil Treatments and Seal Coats
15. Structural Design of Asphalt Pavements
16. Miscellaneous Asphalt Construction
17. Portland Cement
18. Portland Cement Concrete (PCC)
19. Physical Properties of PCC
20. PCC Mix Designs
21. Types of PCC
22. PCC Materials and Admixtures
23. Batching
24. Transportation / Delivery
25. Placement Operations
26. Workmanship Standards
27. Test Methods for Concrete
28. Quality of Workmanship and Compliance
29. Safety

Suggested Reading Other Than Required Textbook

Instructor supplied industry trade articles, and relevant handouts

Examples of Required Writing Assignments

Students will write a two page review of a recent trade article, making specific note of compliance issues with students proposing recommendations.

Examples of Outside Assignments

Analysis of Case studies pertinent to pavement operations.

Instruction Type(s)

Lecture, Online Education Lecture