University of Engineering and Technology, Taxila

Department of Civil Engineering

Course Title: CE-203 Civil Engineering Practice

Pre-requisite(s): None

Credit Hours: 2

Contact Hours: 2

Text Book(s): Construction Planning, Equipment, and Methods, 8th Edition, Robert Peurifoy


Catalog Data:

Introduction to Construction Aspects of Engineering Projects; Earth Moving; Construction Equipment; Tunneling; Piles; Cofferdams; Formwork and Shuttering; Construction Defects; Grouting and Shotcreting; Work and Tendering.

Course Objectives:

- To familiarize about different construction aspects of engineering projects and equipments to be used in carrying out a construction project.
- To develop ability of students to carry out the quality construction projects according to drawings and specifications.

Course Learning Outcomes:

At the end of this course, the student will:

CLO 1: Understand the basic concept of construction phases.

CLO 2: Have knowledge about construction equipment and related processes.

CLO 3: Have awareness about construction projects and methodologies.

CLO 4: Have skills to apply gained knowledge to carry out quality construction projects.
Course Contents:

1. Earth Moving:
   - Earth moving
   - Labor versus machinery
   - Factors affecting selection of construction equipment
   - Principle and use of common earth moving machinery required for different purposes (Digging, hauling and compaction etc.)

2. Construction Equipment:
   - Stone crushers
   - Machines for cleaning and grading of aggregates
   - Concrete mixers
   - Vibrators
   - Pneumatic tools

3. Introduction to:
   - Tunneling
   - Piles
   - Cofferdams

4. Form work and shuttering:
   - Forms of concrete structures
   - Form requirements
   - Cost of forms
   - Designing a project for form economy
   - Materials for forms
   - Size of form section
   - Properties of lumber for forms
   - Fundamental form design

5. Construction Defects:
   - Defects and remedial measures in construction
   - Principal defects and diagnosis of causes

6. Grouting and Shotcreting:
   - Need for Grouting, Exploring to determine the need for grouting
   - Preparations for grouting, Materials used for grout
   - Foundation Grouting
   - Drilling patterns, Drilling injection holes
   - Washing the seams, Grouting pressures
   - Equipment for cement grouting
   - Injecting cement grout
   - Pressure grouting with asphalt
   - Clay grouting, Chemical grouting
   - Determine the effectiveness of grouting

7. Introduction to work and tendering
Grading Policy:

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<th>Sr. No.</th>
<th>Grading</th>
<th>% of Total Marks</th>
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<tr>
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<td>Assignments</td>
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Student Learning Outcomes:

Students who pass the course will gain the knowledge about different construction methodologies and equipments to be used in carrying out a construction project. They will be able to carry out the construction projects according to drawings and specifications.

Course Professional Outcome/Industrial Usage:

Students learn basic ideas and concept of construction methodologies and equipments. They will also be able to carry out the construction projects according to drawings and specifications.
### Mapping:

<table>
<thead>
<tr>
<th>PLO’s</th>
<th>CLO’s</th>
<th>CLO 1 Basic Concepts</th>
<th>CLO 2 Knowledge</th>
<th>CLO 3 Awareness</th>
<th>CLO 4 Skills</th>
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<tbody>
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### Assessment Modules

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