

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	
Reference Book(s):	1. Construction Methods and Management, 8th Edition, Stephens W. Nunnally 2. Construction Equipment Management for Engineers, Estimators, and Owners, 1st Edition, Douglas D. Gransberg	

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:

Sr. No.	Grading	% of Total Marks
1.	Assignments	10 %
2.	Quizzes	10 %
3.	Laboratory	20 %
4.	Mid Term Exam	20 %
5.	Final Exam	40 %
	Total	100

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:

PLO's \ CLO's	CLO 1 Basic Concepts	CLO 2 Knowledge	CLO 3 Awareness	CLO 4 Skills
PLO 1 (Engineering Knowledge)				
PLO 2 (Problem Analysis)				
PLO 3 (Design/Development of Solutions)				
PLO 4 (Investigation)				
PLO 5 (Modern Tool Usage)	✓	✓	✓	
PLO 6 (The Engineer and Society)				
PLO 7 (Environment and Sustainability)				
PLO 8 (Ethics)				
PLO 9 (Individual and Team work)				✓
PLO 10 (Communication)				
PLO 11 (Project Management)				✓
PLO 12 (Lifelong Learning)				

Assessment Modules \ CLOs	CLO 1	CLO 2	CLO 3	CLO 4
Assignments		✓	✓	✓
Quizzes	✓	✓	✓	
Midterm Exam	✓	✓		
Final Exam	✓	✓	✓	✓