



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Construction Engineering and Management: An Introduction

## CIVILEN 2810

**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Undergraduate (1000-5000 level)

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**Course Components:**

Recitation

Lecture

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**Course Description:**

Basic engineering and management concepts of construction operations of various foundations, concrete, and steel buildings and bridges.

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**Prerequisites and Co-requisites:**

Prereq: Enrollment in CivilEn major.

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**Course Goals / Objectives:**

- Have on-site engineering knowledge about the design of construction operations of various earthworks, foundations, buildings, and bridges
  - Understand the management of construction projects in planning, scheduling, and estimating construction activities
  - Be well informed about the importance of construction in future FE and PE exams
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**Course Topics:**

- **MANAGEMENT:** Characteristics of Construction Industry; Project Participants; Project Delivery; Project Organization; Construction Phases; Various types of project scheduling; Project estimates.
  - **FOUNDATIONS:** Site Preparation; Pile Driving; Pre-stressed Pre-fabricated Concrete; Bulkhead Construction: Timber lagging; Steel Sheet Piles, Bored Piles; Basement Walls, Diaphragm Walls, and Slurry Walls; Excavation Processes.
  - **BUILDINGS:** Falsework construction; Formwork construction; Waffle form construction; Double “T” floor construction; Shoring and reshoring; Tower cranes and concrete pumps; and Steel construction.
  - **BRIDGES:** Cofferdam construction; Pier construction; Pile cap installation; Match casting box segments; Balanced Cantilever method; Progressive Placing; Incremental launching; and Span-by-span erection; Construction of Steel Box Girder Bridges.
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**Designation:**

Elective