

University of Toledo

Construction Engineering Technology Master Syllabus

Course Title: Construction Management & Scheduling **Course Code & Number:** CET-4460

Credit Hour Total: 3 **Weekly Contact Hours Lecture:** 3 **Lab Hours:** 0*
(* Some instruction does occur in a computer lab)

Prerequisite(s): CET-2060

Text: Construction Planning & Scheduling (4th Ed.)
 Hinze ISBN: 978-0132473989

Software: Microsoft Project

Course Coordinator: Mata

A. **Course Description** (Approved catalog description.)

This course focuses on learning the basics of producing construction schedules based on cost estimates and work breakdown structures. Different scheduling methods will be investigated along with associated management techniques needed to plan, track, control and adjust schedules to project conditions. Project supervision, OSHA construction safety and engineering ethics pertaining to construction will be covered.

B. **Related Program Outcomes:**

Upon successful completion of the Construction Engineering Technology program, graduates will have:

ABET/Student Outcomes

- a. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- g. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;

Program Criteria Outcomes

1. Effective communication skills related to the construction environment through the proper usage of oral, written and graphic techniques.

11. A development and understanding of the proper management techniques of construction projects relative to budget, schedule, safety, organization and contractual obligations.

Evidence of the success of these outcomes is provided by the collection and analysis of:

- Final Scheduling Project
- Midterm and on Final Exam on CPM, Time Reduction and Resource management

C. Course Objectives:

At the completion of this course the student will:

1. Understand the types of contracts and contract terms.
2. Understand AIA documents and procedures for documentation.
3. The ability to formulate problems into decision making models.
4. The ability to cost load estimates into project schedules.
5. Utilize computer software for scheduling and project decision making.

D. Course Outline – Major Content Areas

1. Construction industry introduction (Ownership and Organization, Contracts and Specifications, Bidding Process, Front End Documents, Bonds and Insurance)
2. Project management (Planning, Organization and Controlling)
3. PERT & CPM
4. Schedule Development (Logic Duration and Calculations, Activity Codes, Time and Cost Management, Project Documentation)
5. Schedule Management (Schedule Impacts, Delays & Claims, Disputes, Communication & Reporting, Project Close Out)
6. Labor Law & Relations
7. Project Safety

E. Suggested Laboratory Tests

1. Project Scheduling Project
2. Construction Management Case Studies