



## CE463 Construction Planning

**Code and Name:** CE 463 – Construction Planning

**Credit Hours:** 3 (Lecture: 3, Tutorial: 1)

**Textbook:**

-Construction Project Scheduling and Control, Saleh Mubarak, Third Edition, Wiley, 2015

**Other References:**

-Handbook for Construction Planning and Scheduling, Andrew Baldwin, David Bordoli, Wiley, 2014

-Construction Planning and Scheduling, Jimmie W Hinze, Pretence Hall, 2012

**Course Description:**

Introduction: Planning and Scheduling, Project Control, Why Schedule Projects, Scheduling and Project Management. Bar/Gantt Charts and Basic Networks: Introduction, Advantages and Disadvantages of Bar Charts, Arrow and Node Networks, Networks versus Bar Charts, Time-Scaled logic Diagrams Resource Allocation, Categories of Resources, Resource Levelling, Materials Management . Schedule Compression and Time Cost Trade-Off: Setting priorities, Accelerating a Project, Direct and Indirect Costs, Recovery Schedules, Potential Issues with uncoordinated acceleration, Optimum Project Scheduling.

**Pre-requisites:** CE461: Construction Engineering and Management

**Co-requisites:** None

**Course Learning Outcomes:**

With relation to ABET Student Outcomes (From Fall 2019-SOs: 1-7)

1. To identify, formulate, and solve complex engineering problems in construction planning related to construction scheduling, Resource allocation and leveling, time cost trade-off, and project control. (1)
2. To analyze construction-planning techniques, variation and change orders, and programing multi-projects (2)
3. Demonstrate communication skills in both oral and written during the semester project presentation and issues in the course (3)
4. To recognize ethical and professional responsibilities in construction planning situations related to engineering codes and standards, the semester project, and impact of engineering solution in the course. (4)
5. To acquire and apply new knowledge with emphasis on construction planning, claims and dispute resolutions methods and their application. (7)

**Topics to be covered:**

- Planning and Scheduling, Why Schedule Projects
- Project Control & Project Management
- Project Control & Project Management
- Techniques for Project Control
- Introduction to Gantt Charts, , Advantages and Disadvantages of Bar Charts
- Resources Allocation and Levelling, Logic and Constraints
- Material planning & Management
- Schedule Compression and Time Cost Trade-Off: Setting priorities, Accelerating a Project,.
- Direct and Indirect Costs, Recovery Schedules, Potential Issues with uncoordinated acceleration, Optimum.
- Introduction to Microsoft Project & Primavera Software
- Introduction to Multi-project Management

**Grading Policy:**

The grading for the course is: 60% coursework and 40% Final Exam. The course work consists of two Midterm Exams, where each midterm exam is worth 20%. It also includes quizzes, and projects for the remaining 20% that is modified by the course instructor.

