New York University Tandon School of Engineering
Department of Urban and Civil Engineering
Course Outline CE-UY3513 Construction Scheduling
Fall 2017
Aysun Sarikardasoglu
Monday, Wednesday 8:00 AM – 10:20 AM; Room RH418

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Office hours: By appointment

Course Pre-requisites
CE 1002 or 1502

Course Description
Students learn to apply the Critical Path Method (CPM) to construction projects, using precedence diagram networks. The course covers sequencing, cost allocation, updating, cash flow, resource constraints and scheduling, manpower leveling and distribution, time-scale networks, lead and lag-time constraints, time-cost tradeoffs, overlap and other specific leading edge scheduling techniques. Students will prepare construction schedules and perform scheduling exercises during lab sessions using Primavera Project Planner and Microsoft Project scheduling software.

Course Objectives
• Gain an understanding and working knowledge of Critical Path Method (CPM)scheduling and basic CPM concept
• Develop construction schedule logic for various types of construction projects
• Understand how to estimate project activity durations
• Develop work breakdown structures for different project types
• Become familiar with resource and cost loading of schedules
• Understand the schedule updating process
• Become familiar with computer software including Primavera Project Planner and Microsoft Project

Course Structure
Lecture and lab sessions using Primavera Project Planner and Microsoft Project.

Readings

Course requirements
Recommended reading should be done before class. Course grading is as follows:
• Attendance is 10% of final grade
• Midterm exam I is on October 16, 2017 and 30% of final grade
• Assignments are 25% of final grade
• Final exam is on December 18, 2017 and 35% of final grade
Tentative Schedule by Date:

Week 1
9/6/17  Introduction, Overview of Project Management Basics, Why Schedule, Schedule types
• Chapter 1
• Chapter 2
• Chapter 3
• Chapter 4

Week 2
9/11/17  Introduction to CPM Scheduling, determining durations
• Chapter 5
• Chapter 6
• Chapter 7

9/13/17  Lab 1 – Developing project networks and network calculations
• Chapter 8
• Lab 1 assignment out – Practice problems

Week 3
9/18/16  Calculating Total, Shared, Free, Independent Float
• Chapter 9

9/20/16  Lab 2 – Using Lags in Network Logic Diagrams
• Chapter 10
• Lab 2 Assignment out (AOD Logic Diagram Assignment)

Week 4
9/25/16  Reviewing and Analyzing the Schedule, creating bar charts and tabular reports from network logic diagrams
• Lab 1 Assignment Due
• Chapter 11
• Chapter 12

9/27/16  Lab 3 – Activities - Residential Home
• Assignment 3 - Residential Scheduling

Week 5
10/2/16  Work Breakdown Structures

10/4/16  Introduction to Primavera Project Planner, P6
• Chapter 23
• Lab Assignment 2 due

Week 6
10/9/16  No class

10/11/16  Midterm Exam Review Session
Week 7
10/16/16  Midterm Exam – Chapters (1-12)

10/18/16  Using Microsoft Project

Week 8
10/23/16  Using Schedule to Forecast and Balance Resources
   •  Chapter 15

10/25/16  Review and working session, Microsoft Project
   •  No reading assignment

Week 9
10/30/16  Introduction to Primavera Software
   •  Introduce Lab Assignment 4
   •  Chapter 15

11/1/16  Resource allocations using Primavera software
   •  No reading assignment

Week 10
11/6/16  Linear or Line of Balance Schedules, schedule updating, cost-time trade-offs
Schedule Updating
   •  Chapter 14
   •  Lab Assignment 4 due

11/8/16  Schedule updating using Microsoft Project
   •  Introduce Lab Assignment 5

Week 11
11/13/16  Schedule updating using Primavera Software
   •  Chapter 22

11/15/16  Continue on Microsoft Project
   •  Chapter 22
   •  Lab Assignment 5 due

Week 12
11/20/16  Procurement and Pre-construction
   •  No reading

11/22/16  No Class

Week 13
11/27/16  Construction Delays and claims
   •  No reading
11/29/16 Construction Contract types
- No reading

Week 14
12/4/16 Basic Concepts of Earned Value Management
- Chapter 16

12/6/16 Overview of 4D scheduling and risk analysis
- No reading

Week 15
12/11/16 Concepts of Project Controls
- No reading
12/13/16 Final Exam Review Session
- No reading

Moses Center Statement of Disability

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NYU School of Engineering Policies and Procedures on Academic Misconduct

A. Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School’s rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School’s Policy on Academic Misconduct.

B. Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

1. Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person’s work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
2. Fabrication: including but not limited to, falsifying experimental data and/or citations.

3. Plagiarism: intentionally or knowingly representing the words or ideas of another as one’s own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.

4. Unauthorized collaboration: working together on work that was meant to be done individually.

5. Duplicating work: presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.

6. Forgery: altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.