New York University Tandon School of Engineering  
Department of Civil Engineering  
Course Outline CE-GY-8353 I Construction Scheduling  
Spring 2018  
Instructor - Robert V. Otruba, P.E.  
Friday 3:25pm to 5:55pm – Room RGSH 317

To contact instructor:  ro475@nyu.edu  
Phone: 862-596-1464 - Office hours: By appointment

Course Pre-requisites  
None

Course Description  
Students will be instructed in Critical Path Method (CPM) construction scheduling techniques including the use of Primavera scheduling software. The course will cover Arrow Diagramming Method (ADM), Precedence Diagramming Method (PDM), project resources, resource leveling, schedule updating, date constraints, activity duration estimating, work breakdown structures, differing scheduling requirements on different types of construction projects and an overview of construction scheduling specifications among other scheduling topics. 4D scheduling and the use of schedules related to requests for project time extensions and risk analysis will also be addressed.

Course Objectives  
• Become proficient in developing Critical Path Method (CPM) logic diagrams and performing CPM calculations manually.  
• Understand Work Breakdown Structures (WBS) and schedules at a high level for a variety of construction projects.  
• Understand the use of date constraints, activity coding, multiple calendars and other scheduling concepts.  
• Understand the schedule updating process including contemporaneous assessment of project impacts.  
• Understand schedule resource loading, project resource requirements and the cost loading of schedules.  
• Have a working knowledge of Primavera software for use in a construction environment.

Course Structure  
Lecture and lab sessions

Reading  
The required text for the course is:  
Construction Project Scheduling and Control – 3rd Edition  
Author:  Saleh Mubarak  
ISBN 978-1-118-84600-1

Course Requirements  
Recommended reading should be done before class. Class participation is expected. Students will have access to a student version of computer software for use in class. The use of a personal laptop computer is recommended; however, there will be access to a computer lab.

Course grading is as follows:  
• Exam on March 30, 2018 is 35% of final grade  
• Lab assignments are 35% of final grade (See below for Lab due dates)  
• Final project and presentation is 30% of final grade – Date to be determined
Course by Date

26-Jan-18  Introduction and overview of Arrow Diagramming Method (ADM) and Precedence Diagramming Method (PDM)
  ▪ Chapters 1 - 3

02-Feb-18  Precedence Diagramming Method (PDM) logic and calculations
  ▪ Chapters 4, 5

09-Feb-18  Lab 1 – Network drawing and calculation, additional PDM topics
  ▪ No reading assignment

16-Feb-18  Discuss Lab 1, introduce Lab 2 - Work Breakdown Structures (WBS)
  ▪ No reading assignment

23-Feb-18  Working session / Q&A – Labs 1 and 2
  ▪ No reading assignment

02-Mar-18  Schedule specifications and selected topics in CPM
  ▪ No reading assignment
  ▪ Lab 1 and 2 assignments due

09-Mar-18  Using Primavera software
  ▪ No reading assignment
  ▪ Return Lab 1

23-Mar-18  Lab 3 – Creating a schedule using primavera software
  ▪ No reading assignment
  ▪ Return Lab 2

30-Mar-18  Exam
  ▪ No reading assignment

06-Apr-18  Lab 4 - Schedule resources and costs
  ▪ Chapter 6
  ▪ Lab 3 assignment due

13-Apr-18  Working session / Q&A – Lab 4, Overview of 4D schedules and schedule risk
  ▪ No reading assignment
  ▪ Chapter 14, 15
  ▪ Return Lab 3

20-Apr-18  Distribute Final projects and Lab 5 – Schedule updating
  ▪ Chapters 7, 9 and 10
  ▪ Lab 4 assignment due

27-Apr-18  Schedules and delay, schedule compression, using Microsoft Project
  ▪ Chapters 8, 11 and 12

04-May-18  Discuss final projects and effective schedule presentations
  ▪ Chapter 13
  ▪ Return Lab 4
  ▪ Lab 5 assignment due – Return by final project presentations
Moses Center Statement of Disability

If you are a student with a disability who is requesting accommodations, please contact New York University’s Moses Center for Students with Disabilities (CSD) at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.

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.