

## AEC 226 Construction Scheduling

**REQUIRED TEXTBOOK/MATERIALS:** Construction Scheduling: Principles and Practices, Jay S. Newitt Prentice Hall, 2<sup>nd</sup> ed. Pearson/Prentice Hall

**COURSE DESCRIPTION/PREREQUISITES/CREDITS:**

Discusses various methods of project scheduling. Emphasis will be placed on critical path method techniques and strategies.

**COURSE OBJECTIVES:** Upon completion of this course:

**Competencies View:**

- I. Define project activities.
- II. Create a network and bar chart schedule manually.
- III. Analyze a network schedule manually using the critical path method.
- IV. Interpret a network schedule, including early and late completion dates and floats.
- V. Utilize schedule software to create and analyze a critical path schedule.
- VI. Assign resources to a schedule and develop cash flow forecasts.

**Topical Outline**

- I. Estimating activity durations
- II. Work flow analysis
- III. Bar chart scheduling
- IV. Network and arrow diagram development
- V. Precedence diagramming
- VI. Network calculations and critical path analysis
- VII. Resource loading and leveling
- VIII. Short interval scheduling
- IX. Schedule compression and linear scheduling
- X. Supervision, management, and motivation
- XI. Managing hazards and risks in the field

<b>Assignments and Exams</b>	<b>Points</b>
Bar chart of a residential project	50
Activity on Node Network Logic Diagram	20
Residential Schedule Set	50
Manpower load of practice problem #3	10
Cash level of practice problem #3	10
Progress S Curve of practice problem #3	10
MS Project Computer assignment	75
Highway Overpass	75
Project	100
Exam I	100
Exam II	100
<b>Total</b>	<b>600</b>

**GRADING SCALE:**

100% to 90% = A

89% to 80% = B

79% to 70% = C

69% to 60% = D

59% to 0% = F

**TESTS/EXAMINATIONS:**

If a student misses an examination, he/she will receive a zero for that exam if the instructor is not informed. The instructor allows exceptions for emergencies if the instructor is notified as soon as possible after the missed exam. A make-up exam will be given. In cases where the student knows they will be absent and informs the instructor prior to the absence, a make-up exam will be allowed. The student and instructor will agree upon the time and place of the make-up exam. A phone call notifying the instructor of any absence is required. No phone call will be treated as an unexcused absence. Three unexcused absences will result in at least one letter grade reduction.

**HOMEWORK:**

Completion of all homework assignments is required. Homework shall be NEAT, clear, and show all primary work. Homework will be due at the beginning of the week following the assigned work. Sloppy work will be returned without grading or review. Homework will be due one week after it is assigned

**Course Schedule**

Module	Reading	Assignments / Activities / Exams
1. Project Management Basics	1 Overview of Project Management Basics	
2. Planning	2-3 Why Schedule, Checklists, To-Do Lists, Magnetic Scheduling Boards	Bar Chart Assignment Application question 1
3. Scheduling	4-5-6 Bar Charts, CPM Scheduling, Network Logic Diagram	
4. Durations, Start and Finish Dates	7-8 Durations, Start and Finish Dates	Activity on Node Network Logic Diagram Assignment
5. Float and Lags	9-10. Float and Lags	
6. Analyzing and Reporting	11-12 Analyzing and Reporting	Residential CPM Scheduling Assignment
7. Linear Schedules	13-14. Linear Schedules and Updating	
8. Forecasting and Balancing Resources	15 Forecasting and Balancing Resources	Resource Loading Assignment
9. Cost Schedule Control System Criteria	16 Cost Schedule Control System Criteria	
10. Teamwork	17 Teamwork	MS Project Assignment

11. Other Scheduling Techniques	18 Other Scheduling Techniques	
12 CPM Scheduling and Managing Projects using MS Project	19, 22 CPM Scheduling and Managing Projects	
13	Project	Introduction of Final Project
14		List of Project Activities
15		Review / Final Exam