

Fall 2023

CE 611-101, 851:Project Planning and Control

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Text: Hinze, Jimmie, Construction Planning & Scheduling, 4th Edition.
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Professor: Christopher M. Hanna, PE
Email: jerseyengineer@gmail.com
Live Lecture (online class only): <https://njit.webex.com/meet/cmh>

Prerequisite: CE 610.

Instructor's Office Hours: *I am available only by the email listed above; however, if there is an absolute need to meet in-person, I will be available Monday Evenings. Please feel free to email me any concerns or questions, and I will return a prompt reply.*

Week #	Weekly Lecture Topics	Chapter Readings
Week #1 9/5– 9/9	Class Introduction/ Student Survey Project Planning and Control Principles	- 1
Week #2 9/10 – 9/16	Basic Methods of Scheduling Arrow Diagrams Network Modeling and Analysis	- 16 2,3
Week #3 9/17 – 9/23	Duration and Time In Schedules Scheduling as it relates to Executed Contracts	4 5
Week #4 9/24 – 9/30	Quiz #1 Monitoring and Controlling a Project Computer Scheduling Basics	- 8 9
Week #5 10/1 – 10/7	CPM in Claims and Disputes <i>Term Project Disucssion</i>	12 -
Week #6 10/8 – 10/14	Allocating Limited Resources on a Project Leveling Scheduling Constraints	6
Week #7	MIDTERM EXAM WEEK	-
Week #8 10/22– 10/28	Project Accounting and Cash Flow Determining Project Status <i>Term Project Discussion</i>	7
Week #9 10/29 – 11/4	Earned Value Analysis	10

Week #10 11/5 – 11/11	Quiz #2 Cost-Time Integrations Productivity <i>Term Project Discussion</i>	- 11
Week #11 11/12 – 11/18	Advanced Scheduling Techniques – Short Interval Scheduling	13
Week #12 11/19 – 11/25	Advanced Scheduling Techniques – Linear Scheduling & PERT <i>Term Project Discussion</i>	14 15
Week #13 11/26 – 12/2	Alternate Project Delivery	-
Week #14 12/3 - 12/10	Final Term Projects Due	-
Week #15 12/10– 12/17	FINAL EXAMINATION WEEK	

IMPORTANT INFORMATION!

For Section 101 Students, Live Lectures will be held on Monday Evenings at 6pm in Tierney Hall Room 108.

For Section 851 Students, Prerecorded Video Lectures may be posted on Sunday of each week for you to view within that week. I alternatively may record and upload the Monday night lecture for online viewing.

For all Students, Homework is due the following week after it has been posted. Generally Homework assignments will be posted on the class's Canvas page by Sunday Evenings. For example, Homework for Week #4 will be due by 10/1 11:59 pm.

Each Class will have its own Canvas page. This is where all course materials will be available, where you will upload assignments, and where you will access the exams, whether you attend class in person or virtually.

COURSE DESCRIPTION:

Understanding and navigating the methods of construction project management as it is related to project planning, scheduling, monitoring and controlling the progress of the project to deliver positive results to the Owner-Client.

Emphasis is placed on network scheduling techniques, specifically the Critical Path Method, as well as developing schedules thorough the allocating and leveling of resources, and time-cost aspects. Projects constraints will be indentified and students will be taught methods of mitigating constraints to deliver profitable, on-time projects, as it relates to the Civil Construction Industry.

Students will be given tools to analyze time-cost impacts, develop workforce productivity calculations, understand the legal aspects of scheduling a project, and become familiar with project accounting topics and calculations.

LEARNING OBJECTIVES:

Using the cases and background materials, and methodologies covered, students at the end of the semester should be able to:

- Plan a construction project and develop a CPM computer-generated schedule with realistic timeframes and costs
- Allocate limited resources and adjust the usage of resources throughout a project timeline based on availability, scheduling, and cost constraints.
- Manage a projects cost and schedule and use Earned Value Analysis tools to determine the status of a project
- Understand project performance measurements and productivity utilization
- Learn operations and finance management techniques and apply them to construction project planning and scheduling to monitor and control a porjects time and cost factors

Basis of Grading:

Class Participation and Attendance: 10%

Homework/Quizzes = 20%;

Midterm = 20%

Final Exam = 20%

Term Project = 30%,

Homework/ Quizzes:

Please submit homework on Canvas under each assignment link and label the assignment as directed. You are required to submit all assignments on time, before 11:59 PM EST on the day the assignment is due. Failure to submit an assignment will result in a ZERO grade for that assignment. Any assignment submitted late past 2 weeks after its original due date will be considered not submitted and you will receive a zero grade. Do not submit anything past the due date without having communicated with the instructor. Points will be deducted for late assignments.

Report:

The Term Project is 30% of your grade. It is a realiaistic representation of insdutrstry standards. The project is split into multiple assignments and includes MS Project and technical report writing aspects. More details will be discussed during class lectures. Do not use a prject you previusly submitted for a different course. Do not submit anytjing that is not solely produced by

you. Do not use references. This is a self-driven, self-produced written and computer generated scheduling term project. This is not a group assignment.

Midterm and Final Exam:

Each are 20% of your grade. They will be administered either in person or virtually in the Canvas class page, All students must complete the exams on their own, which will be heavily monitored. They are open book exams, meaning the instructor can ask you anything in the book, whether it was directly discussed in class or not. Do not look up any answers on the internet. Those answers will not be correct. The Exams are designed similarly to a proficiency exam - multiple choice, True or False Statements, and Matching Terms. Each student will have 2.5 hours to complete each exam, consisting of 25 to 35 questions.

Honor Code:

Students are strongly advised that the NJIT Honor Code will be upheld in this course, and any violations, or suspected violations, will be brought to the immediate attention of the Dean of Students. This will result in failure of the course and possible expulsion from the University. Please hold your fellow students accountable and report any violations to the instructor, or the chair of the department. Violations include but are not limited to plagiarism, cheating, submitting work produced by someone else, submitting work from a previous class, or working on any assignments in a group effort.

OTHER REQUIREMENTS:

Students are required to have access to a computer to produce and submit assignments, take the exams, watch any uploaded lectures, and use MS Word, Excel, and MS Project, also known as Project Professional (Any Version after 2013 is suitable). These programs are free for download from ist.njit.edu

There are several PC Labs on the NJIT campus that are free to use for any NJIT Student who cannot access a computer of their own.

The course requires the use and submission of the following types of electronic files: .doc, .docx, .xls, and .mpp, which correlate to use of programs like Word, Excel, and MS Project on a PC type of computer. Please do not use a MAC or IOS operating system, unless you without a doubt can produce and submit a file as listed above that can be opened on a PC for review and grading. PDFs are never accepted file formats, unless otherwise directed, or in conditions beyond the control of the student, and in which case, the scanned document must have the student's signature and NJIT ID number.

Please Note: Syllabus is Subject to Change at any time. Just like a construction project, things arise and the Project Manager must be flexible enough to mitigate delays or constraints in order to keep the project nearly on-track.

Questions? Compliments? Suggestions? Please email me at JerseyEngineer@gmail.com