CE 611 – 850 – PROJECT PLANNING AND CONTROL (3 Credits)
Department of Civil and Environmental Engineering
New Jersey Institute of Technology
Summer 2025

Time & Location Online (Asynchronous)

Instructor Muhammad Elgammal, PE, PMP
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Office Hours Virtual, Monday 12pm & Thursday 9pm
Additionally, By Appointment

Prerequisites CE 610, Construction Management

Text Construction Planning and Scheduling, 4th Edition
Jimmie W. Hinze
Pearson, ISBN No. 978-0132473989

Course Description Management tools as related to construction projects are analyzed and applied to individual projects. Emphasis is on network scheduling techniques, time-cost analysis, resource allocation and leveling, cost estimating, bidding strategy, and risk analysis.

#	Wk	Topic	Reading
1	5/27	Introduction Terminology	Ch 1
2	5/27	Determining Activity Durations Productivity Analysis	Ch 4, 11
3	6/3	Modalities of Project Schedules Precedence & Activity Relationships	N/A
4	6/10	Scheduling Basics Precedence Diagrams Network Modeling	Ch 2, 3, 16
5	6/17	Critical Path Method Float Term Project Introduction	N/A
6	6/24	Project Control Crashing Resource Allocation/Leveling	Ch 6, 7
7	6/24	Contract Provisions Monitoring and Controlling	Ch 5, 8

#	Wk	Topic	Reading
7	7/1	Contract Provisions Monitoring and Controlling	Ch 5, 8
8	7/8	*Midterm Examination*	N/A
9	7/15	Computer Scheduling: Microsoft Project	Ch 9
10	7/15	Earned Value Management	Ch 10
11	7/22	Dispute Resolution and Litigation	Ch 12
12	7/22	Term Project Status	N/A
13	7/29	Advanced Scheduling Techniques – Short Interval Schedules	Ch 13
14	8/5	Advanced Scheduling Techniques – PERT	Ch 15
15	8/11	*Final Examination*	N/A

General Notes Lecture slides and associated assignments will be uploaded and due on a weekly basis.
No late assignments accepted.
The NJIT Honor Code will be upheld in this course. Students participating in this course agree to conform to, abide by, and agree to the sanctions of the University Code on Academic Integrity.*

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Grading	Assignments	30%	Midterm Examination	20%
	Term Project	30%	Final Examination	20%

Scale

Letter Grade	*Range*
A	90-100
B+	85-89
B	80-84
C+	75-79
C	70-74
D	65-69
F	<65

Course Delivery Mode Online Course[1], All exams will be administered and completed online.
[1]https://onlinelearningconsortium.org/updated-e-learning-definitions-2/

Withdrawals In order to ensure consistency and fairness in application of the NJIT policy on withdrawals, student requests for withdrawals after the deadline will not be permitted unless extenuating circumstances (e.g., major family emergency or substantial medical difficulty) are documented. The course Professors and the Dean of Students are the principal points of contact for students considering withdrawals.

*"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

https://www.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. **Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu"

Please note that Faculty and instructional staff should also refer to the "Best Practices" document developed and published on the Provost's website (on the policies page) or directly at:

https://www.njit.edu/provost/sites/provost/files/lcms/docs/Best_Practices_related_to_Academic_Integrity.pdf

Any actual or alleged violation of the University Code on Academic Integrity **must be formally processed through the Office of the Dean of Students & Campus Life**. Faculty and instructional staff should be proactive on upholding the academic integrity, but **should not** handle violations on their own.

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Instructor Commitment

You can expect the instructor to be courteous, punctual, organized, and prepared for lecture and other class activities; to answer questions clearly; to be available during office hours or to notify you beforehand if office hours are moved; to provide a suitable guest lecturer or pre-recorded lecture when they are traveling or unavailable; and to grade uniformly and consistently.

AI Statement

The use of artificial intelligence (AI) is permitted in this course only when explicitly stated in assignments. If students use AI for any course-related work, they must cite it according to the guidelines provided on the NJIT Library AI Citation page. If you have any questions about AI use in this course, please contact the course instructor before submitting any assignments. In cases where AI use is not allowed, students are expected to complete work without AI assistance to develop their skills in this subject area.

Students with Documented Disabilities

NJIT is committed to providing students with documented disabilities equal access to programs and activities. If you have, or believe that you may have, a physical, medical, psychological, or learning disability that may require accommodations, please contact the Coordinator of Student Disability Services located in the Center for Counseling and Psychological Services, in Campbell Hall, Room 205, (973) 596-3414. Further information on disability services related to the self-identification, documentation and accommodation processes can be found on the webpage at: (http://www.njit.edu/counseling/services/disabilities.php)

NJIT
CIVIL AND ENVIRONMENTAL ENGINEERING

CEE Mission, Program Educational Objectives and Student Outcomes

The mission of the Department of Civil and Environmental Engineering is:

- to educate a diverse student body to be employed in the engineering profession
- to encourage research and scholarship among our faculty and students
- to promote service to the engineering profession and society

Our program educational objectives are reflected in the achievements of our recent alumni:

1. Engineering Practice: Alumni will successfully engage in the practice of civil engineering within industry, government, and private practice, working toward sustainable solutions in a wide array of technical specialties including construction, environmental, geotechnical, structural, transportation, and water resources.
2. Professional Growth: Alumni will advance their skills through professional growth and development activities such as graduate study in engineering, research and development, professional registration and continuing education; some graduates will transition into other professional fields such as business and law through further education.
3. Service: Alumni will perform service to society and the engineering profession through membership and participation in professional societies, government, educational institutions, civic organizations, charitable giving and other humanitarian endeavors.

Our Student Outcomes are what students are expected to know and be able to do by the time of their graduation:

1. an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions
7. an abilityto acquire and apply new knowledge as needed, using appropriate learning strategies