NEW JERSEY INSTITUTE OF TECHNOLOGY

Department of Mechanical and Industrial Engineering

COURSE: **IE**-492 ENGINEERING MANAGEMENT -- Sections 102 (Face-to-Face Course)

SEMESTER: Spring 2024 (Friday Evenings)

INSTRUCTOR: Amit Desai, Senior Associate MEP Engineer @ Marx|Okubo Associates, Inc.
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LOCATION: Meets every week on Friday, 6:00 pm to 8:50 pm @ CKB 124

OFFICE HOURS: **Available** remotely by appointment only.

TEXTBOOKS: **Sepulveda**, J., Souder, W. and Gottgfried, B., ***Schaum's Outline of Theory and Problems of Engineering Economics,*** McGraw-Hill, Inc., ISBN-13# 978-0070238343

Project Management Institute (PMI), ***A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Seventh Edition and The Standard for Project Management****, 7th Edition, Project Management Institute*, 2021.
ISBN-101628256648# ; ISBN-13# 978-1628256642

COURSE DESCRIPTION:

This course covers the fundamental concepts of Engineering Economics and Project Management. It is designed to introduce engineering majors to the application of basic finance, time value or money, and project management principles to general engineering problems. Application of these principles helps facilitate decision-making in practice and provides a foundation for engineers to work with senior management and eventually transition into management roles.

There are two parts to this course:

1. The Engineering Economics section of the course will encompass the following topics: Interest Rates, Time Value of Money, Financial Statements with a focus on Cash Flows, Estimating Capital Projects, Economic Feasibility Analysis, and Engineering Ethics.

2. The Project Management section of the course will cover all phases of the project life cycle, starting from Project Initiation through Project Closeout. We will review various tools and methodologies that have effectively managed various aspects of the project.

Restriction: Junior or Senior standing.

There will be assignments, exams, term projects, and presentations to assess and reinforce concepts learned in this class. This course offers a mixture of individual assignments and group term projects/presentations.

INSTRUCTIONAL METHODS:

Face-to-Face: Delivery of instruction is structured around in-person classroom meeting times. Instruction is delivered in person, and students are expected to attend class. (Sometimes referred to as traditional classroom courses). This course will require weekly engagement via Canvas and face-to-face lectures, which we will meet weekly, except when noted on a detailed schedule. Refer to the detailed schedule for the course meeting days.

Canvas:

- Canvas is an online platform used by NJIT to facilitate the delivery of online lectures and materials.
- Accessed via canvas.njit.edu
- PowerPoint slides, homework problems, video links,, and other supporting materials will be uploaded for students to review and download.
- Online Exams and Assignments will be posted on Canvas.
- Submissions will be via Canvas as well.
- Canvas will also serve as a tool for group collaborations and discussions related to all class assignments and projects.

Textbooks/Assigned Literature:

- There are two textbooks for this course. Both are required as one of the textbooks covers Engineering Economics and the other covers the Project Management section of the course.
- It is expected that the students will read and refer to assigned textbooks as we will be covering materials from the same. Homework assignments will also be mostly from textbooks. Lecture materials make the best effort to explain the material, but students must read/refer to the assigned literature for a detailed explanation and understanding of the topic.

Web Resources:

- Links to articles, videos, and other materials will be posted in Canvas in respective weeks. These links will help reinforce concepts learned in this course.
- It is also expected that students review online resources and current news to reinforce concepts learned in class. It is all about connecting theory to real-life situations!

NJIT HONOR CODE:

Please read and follow the NJIT University Code for Academic Integrity. It will be enforced in this course. Any violation of the code will null and void all assignments and other grading factors. The alleged action will be reported to the Dean of Students office for further action. The NJIT Integrity and Honor Code site is provided below.

Academic Integrity:

"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: http://www5.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."

Generative AI:

"Student use of artificial intelligence (AI) is permitted in this course for assignments and activities. Additionally, if and when students use AI in this course, the AI must be cited as is shown within the NJIT Library AI citation page for AI. If you have any questions or concerns about AI technology use in this class, please reach out to your instructor prior to submitting any assignments."

GRADING:

Attendance	10%
Assignments	20%
Exam 1 (Engineering Economics)	10%
Exam 2 (Engineering Economics)	10%
Exam 3 (Project Management)	20%
Term Project and Presentations (Group Project)	30%
Total	100%

Letter Grade	Percentage	Description
A	+90	Superior
B+	+85	Excellent
B	+80	Very Good
C+	+75	Good
C	+70	Acceptable
D	+60	Minimum
F	Less the 60	Inadequate
AUD	NA	Audit
I	NA	Incomplete--given in rare instances to students who would normally have completed the course work but who could not do so because of special circumstances. It is expected that coursework will be completed during the next regular semester. If this grade is not removed before final grades are due at the end of the next regular semester, a grade of F will be issued.
W	NA	Withdrawal (Refer to academic calendar for last day for withdrawal)

EXAMS:

Each exam will be timed (90 minutes) and conducted online through Canvas (un-proctored). Exams will be available on the same day as the lecture scheduled and remain accessible throughout the week until the start of the next class. Each exam will consist of multiple-choice questions, each with four answer choices. Carefully read each question and select the ONE best answer. It is advisable to attempt all questions; even if you're unsure, it's better to make an educated guess.

Note: You will only have one attempt for each exam during the week it is assigned. Ensure you are well-prepared, in a quiet environment, and have a secure connection to a reliable internet (Wi-Fi) and power source. Any accidental interruption will be considered a submission, and no additional attempts will be granted.

ASSIGNMENTS:

To maximize your learning experience, individual assignments must be completed weekly throughout the semester. These assignments are typically due before the start of the next class. Please ensure assignments are submitted via Canvas in the designated area on time each week. Submissions will NOT be accepted via email or any other medium—NO EXCEPTIONS! Be sure to review the syllabus carefully and familiarize yourself with the assignment deadlines.

Engineering Economics Assignments: Weekly uploads of solved problems from Schaum's Outline of Theory and Problems of Engineering Economics are required. Solutions must be provided in a step-by-step manner, including all work, formulas, and illustrations used. Your comments should reflect whether the solution is correct if you solve the problem differently, and, if incorrect, what the correct solution should be.

Project Management Assignments: Weekly reading of textbook chapters is required, along with responding to open-ended questions from the assigned podcast in a textbox on Canvas (minimum 150 words each). Responses should be detailed, demonstrating a thorough understanding of the course content, and should be grounded in analytical or evaluative thinking.

Note: Late submissions for Assignments or Exams will not be accepted, and you will automatically receive no credit. Please adhere to the deadlines to ensure you earn the best possible grades.

TERM PROJECT:

The term project requires you and your group to develop a detailed plan, budget, and schedule for a realistic project. While you are not required to execute the project, your task is to produce a comprehensive plan. You may select a project from your current work, a recently completed one, or a project you will undertake soon. Projects can relate to your academic program, work experience, or personal interests. Your proposed project will include an economic feasibility study which shall be framed to pitch to any investor such as a private equity group or venture capital institution (similar to "Shark Tank). The size of the overall project must exceed an investment request of USD 100 million. Details and requirements for the term project will be discussed in class. Please refer to the Term Project Requirements document on Canvas for more information.

Note: The term project will have a shared group grade—each group submits one final product, and all group members will receive the same grade, regardless of individual contribution.