

Syllabus - IDE 399

Engineering Economics & Project Management



Course Instructors

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Course Overview

Many engineers are directly involved in the creation of new technologies and products. Often, they are responsible for the execution of projects that are undertaken within complex stakeholder environments in which technical execution is not sufficient to assure project success. Beyond technical skills, achievement of project performance often requires the successful implementation of sound economic reasoning, cost analysis, negotiation and communication, risk and critical thinking skills to successfully overcome complex project implementation challenges.

Catalog Description

This course instructs engineering students in the major concepts and techniques of engineering economic analysis and project management to excel in project execution within multi-stakeholder environments. This course is problem-based and will integrate mathematical economic analysis with choosing the most advantageous project path while balancing competing constraints. Engineering economics topics include time value of money, internal rate of return, cost/benefit analysis, among other topics on the Fundamentals of Engineering (FE) Exam. Engineering project management topics include methods for planning, evaluating, monitoring, and implementing for effective project execution. Topics will also address communicating, motivating, leading and managing conflict among team members.

Recommended Text

Engineering Economic Analysis, 14th Edition, *Eschenbach, Ted G., Lavelle, Jerome, P., Newnan, Donald G., Oxford University Press, ISBN: 978-0-19-093191-9*

Additional Recommended Materials

Project Management for Dummies, Portney Stanley

Honor Policy

The Honor System at Stevens was founded on the principals of “academic honesty and fair play in all undergraduate courses.” The stated purpose of the Honor Board is “to promote honor and integrity at Stevens both academically and socially, and to ensure that all submitted work is completed in such a way that all students can be confident in the integrity of the submitted work of their peers.” Therefore, serious action will be taken if a student (or a group of students) is found to have used unfair means to complete a given assignment. Punitive actions for all assignments under 10% of your final grade will result in a zero on the respective assignments. Further academic impropriety is handled by the Student Honor Board.

Consistent with the above statements, all submitted assignments in IDE 399 must have the pledge written on the top of the assignment. This pledge signifies that the work submitted by the student is indeed his/her own.

“I pledge my honor that I have abided by the Stevens Honor System”

Signature _____ Date: _____

Grades

Unless otherwise stated, grades will be assigned as detailed below. The course schedule provides the dates for all lesson topics, assignments, and quizzes.

- **Classwork and Homework:** There are team-based classwork and homework assignments and should be pledged. Students should submit their classwork and homework assignments as **ONE PDF file** each on **Canvas only**. Students can use the CL and HW templates, but it is not required. Submitted documents must be clear and in good quality in order to be graded. It is the student's responsibility to submit the proper assignment in proper condition. Students are advised to get in touch with the TA with any doubts / clarifications regarding any assignment well before the submission deadline.

- **Quizzes:** Quizzes will be administered during the course of the semester as stated on the Schedule. Students will have access to a formula sheet(s) and interest tables. Students will be allowed to use a calculator. No use of any other electronics will be permitted during exams. Students must take their exam in their enrolled section or risk the loss of points.

Submission Policy and Make-up Exams:

Class exercises are due by 10pm on the day on which it occurs. Homework assignments are due by 1 pm on Sunday or as indicated in the schedule. All students can see if their team assignments have been submitted, and what has been submitted. All members are equally responsible for submissions and submission deadlines. Late assignments lose 50% after due date/time and receive a zero 24 hours after that. Make-up exams and any late assignment submittal will be provided to the student only if there is a situation of unavoidable emergency. Documentation of the hardship is required, and the award of points back is based on the discretion of the instructor. If a student is granted an exception for a due date, the assignment must still be submitted to receive any credit for the submittal.

Grading Policy

Grades become final two weeks from the date graded material is returned. *No grade changes will be made after two weeks from when an assignment is handed back.* An answer will be marked "correct" if it's 100% correct. If an answer has arithmetic errors, but is conceptually correct, a portion of the total points will be deducted. If an answer is conceptually and mathematically wrong it will be marked "wrong", and the student will receive zero credit. If students do not show your work, but have a correct final answer, it may be marked "wrong" and only partial credit given. Note also, partial credit may be awarded if the answer is wrong but the correct steps of calculations are shown.

Lecture Topics

Lec. #	Textbook Chapter	Topics
1	Intro, Course Syllabus	Introduction to Project Management and the course
2	Project Initiation	Project Initiation and Fundamental Steps
3	Managing IT Projects	Managing Systems and IT Projects
4	Project Selection	Strategic Planning, Project Selection and Project Integration Planning
5	Introduction Eng Econ	Introduction to Engineering Economics
6	Chapter 2,3,4	Cash Flow Diagrams, Interest Rates and Time Value of Money
7	Chapter 5, 6, 9	3 Worths and Capitalized Cost
8	Chapter 7	Internal Rate of Return
9	Chapter 9	Benefit Cost Analysis and Break-Even Analysis
10	Chapter 11	Depreciation
11	Chapter 14	Inflation
12	Chapter 10	Project Risk Analysis
13	Real World Applications	What engineers should know for FE, Senior Design and Life