

SE 261: Business Side of Engineering

Fall 2026 | Course Syllabus

Instructor Roshanak Khaleghi khalegh2@illinois.edu Office Hours: Tue 3:30–4:30 PM Location: 210B Transportation Bldg.	TA Newsheen Sharmili ns38@illinois.edu Office Hours: Wed 3:00-4:00PM Location: Zoom	TA Daniel Siegal dsiegal2@illinois.edu Office Hours: TBD Location: TBD
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Course Description

This undergraduate-level course introduces concepts of engineering economic decision making. The course presents mathematical techniques and practical guidance for evaluating economic decisions in the design, operation, and management of engineering projects. These techniques support the selection and justification of design alternatives, operating policies, and capital expenditures. Topics covered include the time value of money, cash flow analysis methods, depreciation, inflation, and income taxes. Beyond its engineering applications, the material from this course will also help you make financially prudent decisions in your day-to-day life.

Prerequisites

- Algebra and basic calculus
- Notions of financial matters (e.g., banks, interest)

Course References and Software

- Park, Chan S., *Contemporary Engineering Economics*, 6th or 7th ed., Pearson (**Recommended**)
- Blank, L. & Tarquin, A., *Engineering Economy*, McGraw-Hill Education (2018)
- Sullivan, W. G., Wicks, E. M., & Koelling, C. P., *Engineering Economy*, Pearson (2019)
- Excel or other spreadsheet software

Course Web Page

Course materials, including lecture slides and assignment files, will be available on the course **Canvas** page.

Course Objectives

Upon successful completion of this course, students will be able to:

- Explain the fundamental principles of engineering economics and the role of engineers in business and investment decision making
- Apply the concept of time value of money and economic equivalence analysis

- Develop project cash flow diagrams, and evaluate and compare engineering project alternatives using present worth, annual worth, and rate-of-return analysis techniques
- Compute depreciation schedules and incorporate the effects of income taxes and inflation into economic decision analysis
- Apply engineering economic analysis, working in a team, to a real-life engineering decision problem and communicate recommendations to an audience
- Apply these same principles to make financially prudent decisions in everyday life (e.g., car/home loans, investments)

Selected Course Topics

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|---|---------------------------|
| • Interest Rate and Time Value of Money | • Rate of Return Analysis |
| • Economic Equivalence Analysis | • Depreciation |
| • Present Worth Analysis | • Income Taxes |
| • Annual Worth Analysis | • Inflation |

Required Work and Grading Policy

Component	Details	Weight
Homework	Homework assignments	20%
Exams	Two midterms (18% each), comprehensive final (24%)	60%
Project (Group of 6) *	Final report	20%
Total		100%

**Group study of a real-life engineering case is to be performed during the semester. A report will be due at the end of the semester defining the problem, establishing the data collected, and the engineering economic decisions made. Formal application of learned concepts must be demonstrated.*

Class Activities — Bonus (up to 3%)

Throughout the semester, students will complete short in-class problems and/or quizzes. These are graded for completion, not correctness. Credit is added to your final course percentage as a bonus, on top of the 100% possible from the required work above, up to a maximum of 3%.

Note: All assignments must be submitted electronically through Gradescope (available via the course Canvas page).

Late submissions policy: Homework submitted within 24 hours after the deadline receives a 50% penalty. Submissions more than 24 hours late will not be accepted unless prior approval is granted by the Emergency Dean or the absence is supported by appropriate medical documentation. Lowest homework grade for each student will be dropped at the end of the semester.

Computer/AI Usage and Academic Honesty

Students may use Excel or other spreadsheet software to complete homework. The submissions must show the work (e.g., formulas, calculation steps used to reach each answer) not just the final numeric result. Plagiarism will constitute grounds for University Sanctions, including immediate failure in the course, for reason of academic dishonesty ([Academic Integrity Infraction](#)).

Use of LLMs such as ChatGPT is permitted only if used for learning and properly attributed as a cited source. AI is a tool to help you learn and structure your thinking and reasoning; it is NOT a substitute for doing the work. Remember that AI can be wrong, especially on arithmetic; so, always verify your numbers!

Transparency and responsible use of AI: For any assignment where AI is used, add one line describing how. Any violation of AI-use rules is considered academically dishonest ([Generative AI Guidance for Students](#)).

AI Use Policy

May be used to: have concepts explained, practice by explaining a concept back to the AI, and get hints on setting up a problem.

May NOT be used to: produce final numeric answers submitted as your own without verifying them, complete or write assignments/exams/quizzes/project or replace your own reasoning.

Students with Disabilities

Students who require accommodation should contact [Disability Resources and Educational Services \(DRES\)](#) to initiate the accommodation process. To ensure sufficient time for planning and implementation, students are encouraged to share their approved accommodation documentation with the instructor as early as possible, and no later than two weeks prior to the first midterm exam.

If course exams are scheduled through the [Testing Accommodations Center \(TAC\)](#), please note that reservations must be made at least three business days prior to the exam date.