



## IE 341 Engineering Economic Analysis

University Credit: (3 0 3) ECTS: 5

2024-2025 Fall - Syllabus



**Instructor:** F. Figen EREN

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### Catalog Description:

Foundations of engineering economy; engineering economy factors; Combining Factors; Shifted cash flows and gradients; nominal and effective interest rates; present and future worth analysis; annual worth analysis; rate of return analysis; benefit/cost analysis and public sector economics; project financing; replacement and retention decisions; breakeven and payback analysis; effects of inflation.

### Course Outline:

Week	Title
1	Foundations of Engineering Economy
2	Factors: How Time and Interest Affect Money
3	Combining Factors
4	Shifted Cash Flows and Gradients
5	Nominal and Effective Interest Rates
6	Present worth Analysis
7	Annual worth Analysis
8	Rate of Return Analysis: Single Alternative
9	Rate of Return Analysis: Multiple Alternatives
10	Benefit/Cost Analysis and Public Sector Economics
11	Project Financing
12	Replacement and Retention Decisions
13	Breakeven and Payback Analysis
14	Effects of Inflation

### Text Book:

Leland Blank and Anthony Tarquin, Engineering Economy, 8<sup>th</sup> Edition, McGraw-Hill, 2017.

### Reference Books:

John A. White, Kenneth E. Case, David B. Pratt, Principles of Engineering Economic Analysis, Wiley, 2010.

Chan S. Park, Contemporary Engineering Economics, 5th Edition, Pearson, 2011.

### Class meeting hours:

**Section 1:** Monday (13:20-15:10) @ HA-01, Friday (09:20-10:10) @HA-01

**Section 2:** Monday (15:20-17:10) @ HA-01, Friday (10:20-11:10) @HA-01

### Tentative Grading:

% 25 Five Homework Assignments

% 30 Midterm Exam

% 45 Final Exam

### **Academic Integrity:**

All students enrolled to this course are expected to act honestly and ethically and should declare her/his understanding and belief in the Honor Code stated below. Therefore, any form of dishonesty will not be tolerated. If you conduct any dishonest act during any course activity (i.e., cheating on exam, using any extra material that you are not allowed to use during an exam, copying materials off of someone else's homework or assignment, knowingly assisting other students to cheat, using solution keys from previous years, copying materials from published and electronic sources without paraphrasing and/or citing appropriately), you will get a credit of zero on that particular exam or assignment. Necessary disciplinary action(s), as dictated by the rules of Çankaya University, will also be taken.

### **Honor Code:**

Every student enrolled to this course should declare her/his understanding and belief in the Honor Code stated below by writing the Honor Code with her/his hand writing and signing it.

*I hereby declare that in all the activities related to this course I'm enrolled: I will neither give nor receive any aid during the exam; I will not submit any assignment, project, report, or similar work which includes any part other than my or our group's work without citation and it will totally be my / our work.*

*[Burada kayıt olduğum bu ders ile ilgili tüm aktivitelerde: sınav sırasında hiç kimseden hiçbir şekilde yardım almayacağımı ve hiçbir kimseye hiçbir şekilde yardım etmeyeceğimi; sunacağım ödevlerin, projelerin, raporların, vb. işlerin, benim veya grubumun çalışması dışında referans vermeden hiçbir kısım içermeyeceğini ve tamamen kendi eserim / eserimiz olduğunu beyan ederim.]*

### **Make-up Exams:**

- If a student misses a midterm exam or a final exam and has a valid excuse for his/her absence, a make-up exam will be given. A make-up exam may have a different format and may contain different type of questions than the regular exam.

### **Attendance:**

- Attendance at lectures will be taken and it is of student's benefit to attend all of the lecture hours. It is best if you fully attend every hour. If you miss even a single hour, you will find it hard to understand the following course material since the topics are interrelated.

### **Conditions that may lead to the letter grade "NA":**

- Not attending the Midterm Exam (or its makeup) or the Final Exam (or its makeup);
  - If you fail to take the midterm exam (or its makeup), you will **NOT** be able to take the **final exam** and you will receive the letter grade **NA**.
  - If you are eligible to take the final exam but fail to take it (or its makeup) you will receive the letter grade NA.
- If you failed the class with attendance below 50% you will get the letter grade NA.

### **Course website:**

- Communication will be made through course page at <http://webonline.cankaya.edu.tr>
- Announcements, lecture notes, grades, attendance, and other information will be uploaded to the course page.
- Every student should check the course page regularly. They are also responsible for printing the course material (lecture notes, exercises, etc.) from the course web page when needed.

### **Exams, Homework Assignments and Class Participation:**

- There will be one midterm exam, one final exam, and five homework assignments
- During exams and **lectures**, the students will need a calculator.

**NOTE THAT EVERYTHING ON THIS SYLLABUS IS SUBJECT TO CHANGE. STUDENTS WILL BE NOTED ABOUT ANY CHANGE.**