

IE 345 Engineering Economy (3 0 3) (ECTS: 4)
2017-2018 Spring – Tentative Syllabus

Instructor:

Haluk Aygüneş
Office: Engineering Faculty, L-309
Phone: 1366
e-mail: aygunes@cankaya.edu.tr

Teaching Assistant:

Derya Akbulut
Office: Engineering Faculty, L-310
Phone: 1359
e-mail: akbulut@cankaya.edu.tr

Catalog Description:

This course highlights the importance of economic principles in engineering applications, especially in project evaluation procedures. Basics of economic evaluation of engineering decisions such as time value of money, inflation, depreciation and income taxes and related techniques are given.

Text Book:

Leland Blank and Anthony Tarquin, Engineering Economy, 8th Edition, McGraw-Hill, 2016.

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.
- William G. Sullivan, Elin M. Wicks, and C. Patrick Koelling, "Engineering Economy", 16th ed., Prentice Hall, 2014.
- Donald G. Newnan, Jerome P. Lavelle, and Ted G. Eschenbach, "Engineering Economic Analysis", 12th ed., Oxford University Press, 2013.

Course Outline:

1. Foundations of Engineering Economy, Time Value of Money and Economic Equivalence
2. Engineering Economy Factors: How Time and Interest Affect Money
3. Combining Engineering Economy Factors
4. Nominal and Effective Interest Rates
5. Methods for Project Evaluation and Selection: Present worth Analysis
6. Methods for Project Evaluation and Selection: Annual worth Analysis
7. Rate of Return Analysis: Single Project
8. Rate of Return Analysis: Multiple Alternatives
9. Rate of Return Analysis: Multiple Alternatives (continued)
10. Public Sector Projects and Benefit/Cost Analysis
11. Breakeven and Payback Analysis
12. Replacement and Retention Decisions
13. Cost Concepts and Basics of Cost Analysis, Depreciation Methods and After-Tax Economic Analysis
14. Effects of Inflation

Class meeting hours:

Section 1: Thu. (09:20-12:10) in L-A14

Section 2: Fri. (09:20-12:10) in H-A01

Tentative Grading:

% 30 Homework (3 assignments, each is 10%)

% 35 Midterm Exam

% 35 Final Exam

Letter grades will be mainly based on the catalogue grading system described in Çankaya University regulations. The instructor reserves the right to modify these percentages in case he finds it necessary.

Academic Integrity: All students admitted to Çankaya University are expected to act honestly and ethically. Therefore, any form of dishonesty will not be tolerated. Every student should declare his/her understanding and belief in the Honor Code stated by the department for the examinations and assignments.

Make-up Exams: If a student misses midterm exam or 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 will be taken every lecture hour. It is strongly recommended to attend all the lecture hours to understand the course material.

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.

Course website:

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

Exams and Homework:

- There will be one midterm exam, final exam, 3 homework assignments in this course.
- In exams the students may need a calculator, so they should bring their calculators to all exams. (Use of cellular phones instead of calculators will not be allowed)
- In *homework assignments*, students should work in teams of *maximum three students*.
 - It is the student’s responsibility to find his/her team members.
 - Each team should submit a single written document including their work for each homework assignment.

Office hour: To be announced later

Note that the instructor reserves the right to make changes in case he finds it necessary.