Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
EM 521	Engineering Economics	2	4	0	0	3	8

Prerequisites	
Admission Requirements	

Language of Instruction	Turkish
Course Type	Compulsory
Course Level	Masters Degree
Objective	Engineering economics involves formulating, estimating, and evaluating the economic outcomes when alternatives to accomplish a defined purpose are available. Another way to define engineering economy is as a collection of mathematical techniques that simplify economic comparison. Thus, the course will develop better understanding of the basic theoretical results in engineering economics and their practices. Balanced time to both theory and applications will be spent. There will be such applications on time value of money, present worth analysis and so on. The goals of the course to provide participants with a foundation to: • Develop familiarity with basic results in engineering economics; • Develop a familiarity with mathematical tools used in engineering economics; • Understand the assumptions and the limitations of results in engineering economy, and the questions that result from those; • Develop the ability to understand the technical practices of engineering economics.
Content	Introduction: Foundations of engineering economy Present worth analysis Annual worth analysis Rate of return analysis: single alternatives Rate of return analysis: multiple alternatives (Incremental analysis) Different tools for evaluating alternatives Replacement and retention decisions Selection from independent projects under budget limitation Effects of inflations Depreciation methods After-tax economic analysis
References	Tolga, Ethem ve Kahraman, Cengiz., Mühendislik Ekonomisi, İTÜ Yayınları, No: 1542, 1994 Leland T. Blank, Anthony Tarquin, Basics of Engineering Economy, McGraw Hill, 2007.

Theory Topics

Week	Weekly Contents
1	Introduction: Foundations of engineering economy
2	Present worth analysis
3	Annual worth analysis
4	Rate of return analysis: single alternatives
5	Rate of return analysis: multiple alternatives (Incremental analysis)
6	Different tools for evaluating alternatives
7	Replacement and retention decisions
8	Selection from independent projects under budget limitation
9	Effects of inflations
10	Depreciation methods
11	After-tax economic analysis