

**DEPARTMENT of INDUSTRIAL ENGINEERING
COURSE CATALOGUE FORM**



Course Code: INDE2442				Course Title: Engineering Economy			
Semester	L + R + L	Credits	AKTS	Language	Category	Instructional Methods	Prerequisites
4	3 + 0 + 0	3	6	English	Required	Lecture	-
Course Objectives			To learn the necessary calculations to compare the economic alternatives of engineering projects and the factors to be considered in these calculations.				
Course Content			Economic analysis for engineering decision making, the finance function in an industrial enterprise, time value of money, basic interest formulas, annual cost comparison, present value analysis, rate of return, depreciation and taxes, multiple alternatives. Mathematical models for equipment replacement. Introduction to decision analysis, concepts of cost engineering.				
Course Learning Outcomes			Upon successful completion of the course, the student is able to: <ol style="list-style-type: none"> 1. Describe the time value of money and its implications. [2] 2. Compare economic alternatives of engineering projects and reach a decision using economic analysis. [2] 3. Solve finance problems by using Ms Excel. [8] 4. Calculate manufacturing cost by using different costing approaches according to the production process. [8] [Note: Numbers in brackets are indicating the related program outcomes]				
ISCED Category of the course			52 Engineering				
Textbook			<i>Engineering Economy</i> . Sullivan, Wicks, ve Koelling.				
Supplementary Material			<i>Contemporary Engineering Economics</i> , Pearson, Chan S. Park and Khan Academy				

COURSE PLAN

Week	Topics	Laboratory / Tutorial Work
1	Understanding Financial Statements	-
2	Understanding Financial Statements	-
3	Introduction to Engineering Economy-Cost Concepts and Design Economics	-
4	Cost Estimation Techniques	-
5	The Time Value of Money	-
6	The Time Value of Money	-
7	Evaluating a Single Project	-
8	Evaluating a Single Project	-
9	Comparison and Selection among Alternatives	-
10	Depreciation and Income Taxes	-
11	Price Changes and Exchange Rates	-
12	Replacement Analysis	-
13	Replacement Analysis	-
14	Evaluating Public Projects	-

COURSE ASSESSMENT SYSTEM

	Activities	Contribution (%)
Semester Activities	Semester Written Exams	50
	Homework	10
	Reports	-
	Labs	-
	Seminars	-
	Presentations	-
	Term Project	-
	Other (attendance, field trip etc.)	5
FINAL EXAM		35
Total		100

CONTRIBUTION of the COURSE on INDUSTRIAL ENGINEERING PROGRAM OUTCOMES

	Program Outcomes	Low	High
1	Adequate knowledge in mathematics, science and subjects pertaining to Industrial Engineering; ability to use theoretical and applied knowledge in these areas in complex engineering problems.		
2	Ability to identify, formulate, and solve complex Industrial Engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.		X
3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.		
4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving problems encountered in engineering practice; ability to employ information technologies effectively.		
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.		
6	Ability to work efficiently individually and in intra-disciplinary / multi-disciplinary teams.		
7	Knowledge of Turkish and English languages; ability to communicate effectively orally, inscriptive and visually by using these languages (via business methods such as reports, presentations and instructions).		
8	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.		X
9	Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.		
10	Knowledge about business life practices (management activities such as project, risk, change and quality etc.); awareness in entrepreneurship, innovation; knowledge about sustainable development.		
11	Knowledge about the global and social effects of engineering practices on health, environment, economics and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.		

ECTS - WORK LOAD TABLE

COURSE ACTIVITIES	Quantity	Time (hr)	Work Load (hr)
Lectures	14	3	42
Final Exam (Preparation included)	1	12	12
Semester Written Exams (Preparation included)	2	18	36
Out of class study time			
Homework	4	12	48
Reports			
Labs			
Seminar			
Presentations			
Term Project			
Total Load (hr)			138
ECTS Credits of the course (Total Work Load / 25)			6

Revision / Date 5/02/2020	Coordinator / Prepared By Seda Baş Güre	Approved By Çağlar Aksezer
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