

IM 462 ENGINEERING ECONOMICS		CIVIL ENGINEERING	
Semester	Credit Structure		
	Lecture	Recitation	Laboratory
7	3	0	0
Language	English		
Compulsory / Elective	Elective		
Prerequisites	---		
Catalog Description	Introduction to engineering economics. Time value of money. Discounted cash flow calculations. Present worth and equivalent worth comparisons. Analysis of investment alternatives. Equipment replacement analysis. Economic analysis of public investments. Sensitivity analysis. Risk analysis and decision making techniques.		
Course Objectives	Introduction of economic evaluation methods of engineering investments and relevant decision making techniques.		
Course Outcomes	Developing skills for economic assessment of engineering projects and decision making under uncertainty and risk.		
Textbook and /or References	Riggs, J.L. and West T.M., “Essentials of Engineering Economics, 2 nd Ed.”McGraw Hill, New-York NY, 1986. -Park, C.S., “Contemporary Engineering Economics, 2 nd Ed.”, Addison-Wesley, Menlo Park, CA,1997. -White, J.A., Case, K.E., Pratt, D.B., and Agee, “Priciples of Engineering Economics, 4 th Ed.”, John Wiley & Sons, New-York, NY,1998. -Okka, O.,”Mühendislik Ekonomisi 3. Baskı”, Nobel Yayın Dağıtım, Ankara, 2000.		
Assessment Criteria		Quantity	Percentage
	Midterm Exams	2	30
	Quizzes		
	Homework	5	20
	Projects		
	Term Paper		
	Laboratory Work		
	Other		
	Final Exam	1	50
Course Category by Content (%)	Mathematics and Basic Sciences		
	Engineering Science	80	
	Engineering Design		
	Social Sciences	20	
Instructors	Öğr. Gör. Dr. Bengi Aykaç		

COURSE PLAN	
Week	Topics
1	Introduction and Interest Rates
2	Discounted Cash Flow Calculations
3	Cases in Cash Flow Calculations
4	Methods of Comparison: Present worth, equivalent annual worth, internal rate of return
5	Methods of Comparison: Incremental rate of return, external rate of return, payback period and unequal service lives
6	Replacement Analysis
7	1. Midterm Exam
8	Effects of Inflation
9	Depreciation Methods
10	Economic Analysis of Public Investments: Benefit Cost Analysis and Incremental Benefit Cost Analysis
11	Sensitivity and Break-Even Analysis
12	2. Midterm Exam
13	Decision Making Under Uncertainty
14	Decision Making Under Risk

RELATIONSHIP BETWEEN THE COURSE AND DEPARTMENT CURRICULUM				
	Program Outcomes	1	2	3
1	An ability to apply knowledge of mathematics, science, and engineering			X
2	An ability to design and conduct experiments, as well as to analyze and interpret data		X	
3	An ability to design a system, component, or process to meet desired needs		X	
4	An ability to function on multi-disciplinary teams		X	
5	An ability to identify, formulate, and solve engineering problems			X
6	An understanding of professional and ethical responsibility		X	
7	An ability for effective written and oral communication in Turkish and English		X	
8	The broad education necessary to understand the impact of engineering solutions in a global and societal context		X	
9	A recognition of the need for, and ability to engage in life-long learning			X
10	A knowledge of contemporary issues		X	
11	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice			X
Contribution of the course : 1:None 2:Partially 3:Completely				