

MM 314E Engineering Economics				DEPARTMENT of MECHANICAL ENGINEERING					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project/Field Study	Homework	Other	Total	Credit	ECTS Credit
6	42	0	-		28	30	100	3	4.0
Language	English								
Compulsory / Elective	Compulsory								
Prerequisites	None								
Course Contents	Basic Economical Issues, understanding cost, break-even analysis, cost per unit calculations, present economy analysis, interest and its formulations, money-time formulations, methods for comparison of projects, evaluation of a single project’s feasibility, comparison of different projects, cash flows of a project, depreciation, working capital, financing of a project, inflation, risk and evaluation of a project under risk.								
Course Objectives	Determination of cash flows of a project over years and determine the project’s feasibility. Comparison of various projects and making a selection among them.								
Learning Outcomes and Competences	Learning comparison methods and ability to apply them in determination of as single project’s feasibility and comparison of projects. Understanding critical issues that can be applied later in professional work life such as interest, cost per unit, profitability, inflation, depreciation, fixed and variable costs.								
Textbook and /or Reference	1. Engineering Economy, W. G. Sullivan, E. M. Wicks, J. T. Luxhoj, Prentice Hall, Thirteenth Edition, 2006. 2. Contemporary Engineering Economics, 5th Edition, Chan S. Park, Prentice Hall, 2010.								
Assessment Criteria						If any, mark as (x)		Percentage (%)	
	Midterm Exams					X		45	
	Quizzes								
	Homeworks					X		10	
	Projects								
	Term Paper								
	Laboratory Work								
	Other					X		5	
Final Exam					X		40		
Instructors	Assoc. Prof. Mustafa YURDAKUL								
Week	Subject								
1-2	INTRODUCTION: Origins and Importance of Engineering Economy, Definition of decision making and selection processes, Accounting Studies, Cost and revenue relationships in a manufacturing business, Understanding financial statements.								
3-4	COST CONCEPTS: Cost terminology, Cost-driven design optimization, Break-even chart applications, Present Economy Studies.								
5	MONEY-TIME RELATIONSHIPS AND EQUIVALENCE: Origins of Interest, Simple-Interest, Compound Interest, The Concept of Equivalence.								
6-7	APPLICATIONS OF MONEY-TIME RELATIONSHIPS: Determining minimum attractive rate of return, Present worth method, Future worth method, Annual worth method, Internal rate of return method, External rate of return method, Payback period method, investment balance diagram.								
8-9-10	COMPARING ALTERNATIVES: Basic Concepts for comparing alternatives, The study period, Case 1: Useful lives are equal to the study period, Case 2: Useful lives are different among the alternatives.								
11	COMBINATIONS OF PROJECTS: Categorization of investment projects, economic evaluation of groups of projects, goal programming applications for combination of projects.								
12-13	EVALUATION OF PROJECTS WITH ACTUAL VALUES OF CASH FLOWS: Depreciation analysis, Investment Financing, Working Capital, Determination of cash flows, Practical examples								
14	INFLATION AND UNCERTAINTIES IN PROJECT EVALUATION: Inflation and its formulation, Affect of inflation in project cash flows, description of uncertanities, formulation and evaluation of uncertainties and project risk.								