



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Managerial Economics							
Course Code		MCE571		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	195 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		<p>This course is designed to enhance the student's knowledge of and ability to apply:</p> <p>1. Identification, formulating and solving engineering problems.</p> <p>2. Time-money relationships, cash flow, and effects of inflation.</p> <p>3. Present worth (PW) method, annual worth (AW) method, rate of return (ROR) method, benefit/cost ratio (B/C) method, and incremental rate of return analysis.</p> <p>4. Depreciation schedules, replacement analysis, and after-tax analysis.</p> <p>5. Engineering economy principles in conjunction with the Fundamentals of Professional Engineering Examination and Registration Process.</p>							
Course Content		<p>The systematic evaluation of the economic benefits and costs of projects involving engineering design and analysis. Economic decision-making in an environment of limited resources and uncertainty. Present economy, the economy of multi-year projects, selection among competing alternatives, sensitivity of outcomes to input parameters, before- and after-tax analysis, replacement economy, inflation, and estimation of future events.</p>							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	2	30
Final Examination	1	40
Quiz	1	10
Assignment	5	20

Recommended or Required Reading

1	W.G. Sullivan, E.M Wicks, C.P. Koelling, Engineering Economy, Global Edition, 16/E, ISBN-13: 9781292019499
2	Engineering Economy' – 7th Edition Authors: Leland T. Blank & Anthony J. Tarquin. McGraw-Hill - ISBN 0073376301
3	'Basics of Engineering Economy', Anthony J. Tarquin. McGraw-Hill – ISBN 978-0-07-340129-4 ISBN 0-07-340129-3
4	'Engineering Economy Analysis', Newman, Lavelle And Eschenbach, Engineering Press (8th edition).
5	'Fundamentals of Engineering Economics', Park, Pearson Prentice Hall, (2nd edition)

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to course syllabus
2	Theoretical	Foundations of Engineering Economy, Factors: Effect of Time and Interest on Money
3	Theoretical	Combining Factors, Nominal and Effective Interest Rates
4	Theoretical	Present Worth Analysis, Annual Worth Analysis
5	Intermediate Exam	1st MIDTERM EXAMINATION /Project
6	Theoretical	Rate of Return – Single Alternative, Rate of Return – Multiple Alternative
7	Theoretical	Benefit/Cost Analysis
8	Theoretical	Making Choices: The Method MARR, Making Choices: Multiple Attributes
9	Intermediate Exam	2nd MIDTERM EXAM. / PROJECT
10	Theoretical	Replacement and Retention Decisions
11	Theoretical	Effects of Inflation
12	Theoretical	Depreciation Methods
13	Theoretical	Tax Considerations
14	Theoretical	Sensitivity Analysis
15	Theoretical	Breakeven Analysis
16	Final Exam	FINAL EXAM. / PROJECT



Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	5	3	112
Assignment	5	2	0	10
Quiz	1	15	1	16
Midterm Examination	2	16	2	36
Final Examination	1	18	3	21
Total Workload (Hours)				195
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Apply the basic concepts of engineering economy as part of a decision making process
2	Derive and use the different engineering economy factors
3	Evaluate investment opportunities and compare between alternatives using single and combined engineering economy factors
4	Perform a replacement study considering inflation and indirect cost allocation
5	Use depreciation and depletion models
6	Perform breakeven analysis and sensitivity analysis under uncertainty conditions

Programme Outcomes (Civil Engineering Master)

1	To be able to develop expertise knowledge in a Civil engineering area founded on their graduate competence.
2	To be able to use the theoretical and practical expertise knowledge gained in their specialty area.
3	To be able to use the information, problem solving and / or practical skills from the field, in interdisciplinary studies.
4	To be able to create new knowledge by integrating their knowledge area with the knowledge coming from different disciplines; and solve problems that need expertise by using scientific research methods
5	To be able to solve the problems related to his/her area by using appropriate research methods
6	To be able to devise a problem in their specialty area, develop a solution methodology, solve the problem, and interpret the results and take action if necessary
7	To be able to criticize the knowledge in their specialty area, guide the learning process, and independently direct high level studies
8	To be able to systematically communicate the recent developments in their specialty area and their own studies to groups both inside and outside their specialty area, orally, in writing and visually
9	To be able to use computer software at a level required by their specialty area with drawing upon information and communication technology at a high level
10	To be able to introduce scientific, technological, social and cultural advancements in the field of civil engineering and to contribute to the process of being an information of the society and to sustain it.
11	To be conscious of professional and ethical responsibility and contribute to the establishment of this consciousness.
12	To be able to protect social, scientific, and ethical values during collection, interpretation, and dissemination stages of the data associated with their specialty area; instruct and supervise these values
13	To be able to use at least one foreign language in a level to follow current developments related to the field.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P1	5	5	4	5	4	5
P2	4	4	5	4	5	4
P3	5	5	4	5	4	5
P4	4	4	5	4	5	4
P5	5	5	4	5	5	5
P6	4	4	5	5	4	4
P7	5	5	5	4	5	5
P8	5	4	4	5	5	5
P9	4	5	5	5	4	5
P10	5	5	4	4	4	4
P11	4	4	5	5	5	5
P12	5	5	5	4	5	4
P13	4	4	4	5	4	5

