



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Machine Design							
Course Code		MME515		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	202 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to teach the Fundamentals Machine Design and design and manufacture a machine.							
Course Content		Machine design methodology ,Design criteria, Kinematic analysis of machines , Analysis of machine loads, Engineering materials, Properties of materials , Design and selection of machine elements , Motors and motor selection , Standards and definitions of Machines ,design for manufacturing							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Project Based Study, Individual Study, Problem Solving					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	15
Final Examination	1	60
Quiz	4	15
Assignment	5	5
Term Assignment	1	5

### Recommended or Required Reading

1	Robert L. Norton, "Machine Design: An Integrated Approach" Prentice Hall; 3. edition (May 20, 2005) ISBN-10: 0131481908 ISBN-13: 978-0131481909.
2	Robert C. Juvinall and Kurt M. Marshek, "Fundamentals of Machine Component Design" Wiley; 4 edition (August 2, 2005) ISBN-10: 0471661775 ISBN-13: 978-0471661771.
3	Robert L. Mott, "Machine Elements in Mechanical Design" Prentice Hall; 4 edition (July 26, 2003), ISBN-10: 0130618853 ISBN-13: 978-0130618856.

Week	Weekly Detailed Course Contents	
1	Theoretical	Machine design fundamentals
2	Theoretical	Machine elements
3	Theoretical	Machine elements
4	Theoretical	Machine design Project (Financial and economic analysis)
5	Theoretical	Machine design Project (Solid state modeling and drawings)
7	Theoretical	Machine design Project (Solid state modeling and drawings)
8	Intermediate Exam	Midterm Exam
9	Theoretical	Machine design Project (Solid state modeling and drawings)
10	Theoretical	Machine design Project (Solid state modeling and drawings)
11	Theoretical	Machine design Project (FEA analysis)
12	Theoretical	Machine design Project (FEA analysis)
13	Theoretical	Machine design Project (Dynamic simulation)
14	Theoretical	Machine design Project (Manufacturing)
15	Theoretical	Machine design Project (Manufacturing)
16	Final Exam	Final Exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	3	98
Assignment	5	0	4	20
Term Project	1	15	10	25
Quiz	4	4	1	20



Midterm Examination	1	15	2	17
Final Examination	1	20	2	22
Total Workload (Hours)				202
[Total Workload (Hours) / 25*] = ECTS				8

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	Having an understanding of design and its components
2	Having an understanding of design process
3	Ability of using design elements
4	Developing design algorithms
5	Ability to develop experimental design
6	Ability to design machine tools

### Programme Outcomes (Mechanical Engineering Master's Without Thesis)

1	To be able to access wide and deep information with scientific researches in the field of Engineering, evaluate, interpret and implement the knowledge gained in his/her field of study
2	To be able to complete and implement "limited or incomplete data" by using the scientific methods
3	To be able to consolidate engineering problems, develop proper method(s) to solve and apply the innovative solutions to them
4	To be able to develop new and original ideas and method(s), to develop new innovative solutions at design of system, component or process
5	To be able to gain comprehensive information on modern techniques, methods and their borders which are being applied to engineering
6	To be able to design and apply analytical, modeling and experimental based research, analyze and interpret the faced complex issues during the design and apply process
7	To be able to gain high level ability to define the required information and data
8	To be able to work in multi-disciplinary teams and to take responsibility to define approaches for complex situations
9	To be able to transfer of the process and results of studies at national and international environments systematic and clear verbal or written
10	To be able to become aware of social, scientific and ethical values guarding adequacy at all professional activities and at the stage of data collection, interpretation, and announcement
11	To be able to become aware of new and developing application of profession and ability to analyze and study on those applications
12	To be able to gain ability to interpret engineering application's social and environmental dimensions and it's compliance with the social environment

### 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	4	4	5	5	5	5
P2	4	4	4	4	4	5
P3	5	5	5	5	5	5
P4	4	3	3	4	4	4
P5	3	3	3	5	4	4
P6	3	4	4	4	5	5
P7	5	5	5	5	4	5
P8	4	4	4	4	4	5
P9	3	3	3	3	4	4
P10	4	4	4	4	4	4
P11	5	5	5	5	4	5
P12	5	5	5	5	5	5

