



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Strength of Materials							
Course Code		MKE104		Couse Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		It is aimed to gain the basic strength information to be encountered in the design, to gain the competencies to apply strength principles to the sizing and control calculations of machine elements.							
Course Content		Dimensional analysis, mechanical properties of materials, Tensile and compressive stress, Strain and modulus of elasticity. Yield stress, Bending beams: bending moment shear stress and bending moment diagrams description, Calculation of collapse in beams, definition of torsion, Connecting elements, rivets, welding and soldering account							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Problem Solving					
Name of Lecturer(s)		Ins. Alpaslan BAŞARIK							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Strength of Materials, İbrahim NEBİLER, 2012
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Week	Weekly Detailed Course Contents	
1	Theoretical	Tensile and compression stress and Hooke's Law
2	Theoretical	Support reactions analysis and solving the problem with the equilibrium equations .
3	Theoretical	Analysis the balconing and distributed loaded beams
4	Theoretical	Draws the moment, shear and normal force diagrams
5	Theoretical	Draws the moment, shear and normal force diagrams
6	Theoretical	Elements are subjected to torsional moment.
7	Theoretical	Elements are subjected to bending moment.
8	Theoretical	Elements are subjected to bending moment.
9	Intermediate Exam	Mid-term exam
10	Theoretical	
11	Theoretical	Types of joint stresses
12	Theoretical	Calculation of joint stresses
13	Theoretical	Calculation of joint stresses
14	Theoretical	Vertical loaded elements
15	Theoretical	Investigation the twisted event and Euler equations and slender event.
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Assignment	10	0	2	20
Term Project	15	0	1	15
Midterm Examination	1	5	1	6
Final Examination	1	5	1	6
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Identify the elements under the influence of the normal force
2	Dimensioning the elements under the influence of the torsion moment
3	Able to explain the elements under bending moment
4	To solve problems of elements subjected to joint stress
5	Dimensioning the elements of vertical loads
6	Able to analyze the elements under bending loads

Programme Outcomes (Machinery)

1	To be able to know general properties and usage areas of industrial materials and make selection.
2	Design of machine elements.
3	To be able to make production using machining and welding machines without machining.
4	To be able to make measurement and quality control processes with machine tools for measuring and control equipment.
5	To be able to make necessary corrections in order to determine the mistakes by using the necessary non-destructive test methods in welded parts and to eliminate these mistakes.
6	Preventive measures to prevent the occurrence of these faults by preliminarily determining the faults that will occur in the machines as statistical data and to make necessary interventions in case of breakdown.
7	They can make drawings of work pieces on CAD station and apply them on CNC loms. Ability to operate and use CAD / CAM and AUTOCAD package programs.
8	To be able to transfer engineering science and technology to practice by making calculations in the direction of scientific principles.
9	It can repair the elements in pneumatic and hydraulic systems which are indispensable elements of automatic control systems and can regulate their work.
10	The student who is trained as a machine technician during the whole program knows that industrial task definition in the field of work is error finding, problem solving, decision making, planning of functions and activities and they can be achieved by aiming to acquire these characteristics.

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

