



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Science of Engineering							
Course Code		MKE151		Course 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 solve the problems related to the mechanical properties of simple machines.							
Course Content		Circular Motion; angular path, angular velocity, angular acceleration. Work, Power, Energy and Momentum; Business graphs, business units, power units, energy units. Simple Machines; levers, pulleys, pulleys, pulleys, screws. Fluid; basic concepts, application areas of fluids. Pressure and Pressure Gauges; Pressure, units, pressure gauges, hydrodynamics.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Problem Solving					
Name of Lecturer(s)		Assoc. Prof. Murat ÜNVERDİ							

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Science of Engineering , H.İbrahim ACAR Mustafa DENKTAŞ
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Week	Weekly Detailed Course Contents	
1	Theoretical	Dimensions, Measurement Systems and Units
2	Theoretical	Engineering Problem Solving Stages and Techniques
3	Theoretical	Linear and angular motion
4	Theoretical	Kinetic and potential energies
5	Theoretical	Kinetic and potential energies
6	Theoretical	Liquid fluids, fluid pressure, volumetric and mass flow and fluid power
7	Theoretical	Liquid fluids, fluid pressure, volumetric and mass flow and fluid power
8	Intermediate Exam	Mid-term
9	Theoretical	Heat energy and temperature
10	Theoretical	Heat energy and temperature
11	Theoretical	Ideal gases
12	Theoretical	Ideal gases
13	Theoretical	Simple Machines
14	Theoretical	Simple Machines

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Assignment	5	3	2	25
Midterm Examination	1	10	1	11
Final Examination	1	10	1	11
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Will be able to establish the relationship between concepts in uniformly changing circular motion, and calculate the energy and power spent.
2	Will be able to define the kinetic and potential energies of the objects and explain their conversion to each other.
3	Will be able to show the relationship between fluid pressure, volume and mass flow and fluid power in liquid fluids.



4	Define heat energy and temperature, diffusion of heat energy, various effects on objects will be expressed.
5	Will be able to define the laws of ideal gases.

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 looms. 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
P1	3	3	4	3	2
P2	2	2	3	2	3
P3	5	5	2	5	2
P4	3	2	5	4	5
P5	2	5	5	3	4
P6	4	3	2	2	3
P7	3	2	5	4	2
P8	2	5	5	3	4
P9	5	3	2	2	3
P10	2	2	4	4	2

