



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Materials Technology							
Course Code		OTE106		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	2	Workload	50 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		In this course, it is aimed to teach the materials used in motor vehicles, and select the correct choice of materials and the mechanical properties of these materials. Students are intended to gain competency.							
Course Content		Materials used in vehicles and engines, metallic materials, ceramic materials, polymer materials, composite (mixed) Materials, Rubber Materials, Basic Concepts of Atomic Structure, Bonding Between Atoms and Molecules, Unit Cage Types, Methods of Measurement Hardness, Tensile Test Obtained Post stress strain Curve, Impact Test After Fracture Energy, Fatigue test after the second diagram, Visual Inspection Method, with the liquid penetrated inspection method, Ultrasonic Testing Method, X-ray examination method, Magnetic Testing Method.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study					
Name of Lecturer(s)		Lec. Erman AYDIN							

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Malzeme Bilgisi
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Week	Weekly Detailed Course Contents	
1	Theoretical	Materials used in vehicles and engines
2	Theoretical	Metallic Materials
3	Theoretical	ceramic Materials
4	Theoretical	rubber Materials
6	Theoretical	Composite (mixed) Materials
7	Theoretical	Basic Concepts of Atomic Structure
8	Theoretical	Bonding Between Atoms and Molecules
9	Theoretical	Cage Unit Types
10	Theoretical	Hardness Testing Methods
11	Theoretical	Tensile stress strain curve obtained after the experiment
12	Theoretical	Post-Fracture Energy Impact Test After the S-N diagram Fatigue Test
13	Theoretical	Visual Inspection Method Liquid penetrant inspection method
14	Theoretical	Ultrasonic Testing Method With X-Ray Inspection Method Magnetic Testing Method
15	Theoretical	Ultrasonic Testing Method With X-Ray Inspection Method Magnetic Testing Method

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	0	2	30
Term Project	9	0	2	18
Midterm Examination	1	0	1	1



Final Examination	1	0	1	1
Total Workload (Hours)				50
[Total Workload (Hours) / 25*] = ECTS				2
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	detect deformation of materials in engine testing of materials
2	do the definition and classification of materials
3	examine the atomic and crystal structure of materials.
4	test the materials in the aspect of destructive or non-destructive
5	Able to analyze the material used in the field of automotive parts

Programme Outcomes (Mechatronics)

1	TECHNICAL FOREIGN LANGUAGE
2	BASICS OF MECHATRONICS
3	TECHNICAL DRAWING
4	DOING BASIC MECHANIC PROSESES
5	CHOOSE THE MATERIALS
6	DOING MECHANICAL SYSTEM DESIGN
7	SET UP A HYDRAULIC OR PNEUMATIC SYSTEMS
8	DOING COMPUTER AIDED MECHANICAL DESIGN
9	USING FLEXIBLE PRODUCING SYSTEMS
10	USING COMPUTER AIDED MACHINE TOOLS
11	DOING ELECTRICAL AND ELECTRONICAL
12	SET UP ELECTRICAL AND ELECTRONICAL CIRCUITS
13	SET UP LOGICAL CIRCUITS
14	DOING COMPUTER AIDED ELECTRONICAL CIRCUITS DESIGN
15	SET UP ELECTRICAL MOTORS
16	SET UP MICROCONTROLLER CIRCUITS
17	SET UP CONTROL SYSTEMS
18	COMMUNICATE CONTROL SYSTEMS
19	DOING INDUSTRIAL ROBOTIC PROGRAMMING AND MAINTENANCE
20	WRITING COMPUTER PROGRAMME
21	Ability to use the methods and techniques of career planning and discussing the effects of character traits on career preferences.
22	Ability to plan a career in their own profession.

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

	L1	L2	L3	L4	L5
P5	5	5	5	5	5

