



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Automotive Material Technology							
Course Code		OTT112		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 lesson, students are aimed to gain the competences of using materials used in motor vehicles and their mechanical properties and choosing the right materials.							
Course Content		Basic Concepts Related to Atomic Structure, Bonds Between Atoms and Molecules, Types of Unit Lattices, Hardness Measuring Methods, Obtained After Tensile Tests, Materials Used in Vehicles and Engines, Metallic Materials, Ceramic Materials, Polymer Materials, Composite (Composite) Materials, Rubber Materials, Rubber Materials Penetrant Fluid Inspection Method, Ultrasonic Inspection Method, X Ray Inspection Method, Magnetic Inspection Method.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study					
Name of Lecturer(s)		Lec. Ahmet Fatih HACIYUSUFOĞLU							

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Material information
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Week	Weekly Detailed Course Contents	
1	Theoretical	Materials Used in Vehicles and Motor
2	Theoretical	Metallic Materials Ceramic Materials Rubber Materials
3	Theoretical	Polymer Materials Composite (Mixed) Materials
4	Theoretical	Basic Concepts About Atomic Structure
6	Theoretical	Hardness Measuring Methods
7	Theoretical	Tension Elongation Curve Obtained After Tensile Test
8	Theoretical	Fracture Energy After Impact Experiment
9	Intermediate Exam	Midterm
10	Theoretical	S-N Diagram After Fatigue Experiment
11	Theoretical	Visual Inspection Method
12	Theoretical	Penetrant Liquid Inspection Method
13	Theoretical	Ultrasonik Muayene Yöntemi
14	Theoretical	X Ray Inspection Method
15	Theoretical	Magnetic Inspection Method
16	Final Exam	Semester final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Term Project	10	0	1	10
Midterm Examination	1	5	1	6
Final Examination	1	5	1	6
Total Workload (Hours)				50
[Total Workload (Hours) / 25*] = ECTS				2
*25 hour workload is accepted as 1 ECTS				



Learning Outcomes

1	Will be able to define and classify materials.
2	He / she will be able to examine the atomic and crystal structure of materials.
3	To be able to interpret tensile elongation diagram, to determine material properties according to important points in tensile elongation diagram
4	To understand the definition of hardness and hardness measurement methods, to compare hardness measurement methods with each other
5	They will be able to do destructive and non-destructive material inspection.
6	He will be able to detect the deformation that will occur in the engine materials and to make a material inspection.

Programme Outcomes (Automotive Technology)

1	To be able to interpret and evaluate data, identify problems, analyze them, and develop evidence-based solutions by using basic knowledge and skills in the field.
2	Must be able to choose and effectively use the modern techniques, tools and information technologies necessary for field related applications.
3	Must be able to gain practical skills by examining relevant processes in industry and service sector on site.
4	They must be able to produce solutions, take responsibility for teams or do individual work when they encounter situations unforeseen in the field related applications.
5	Awareness of the need for lifelong learning; it must be able to follow the developments in science and technology and to constantly renew itself.
6	Must be able to use computer software and hardware at the basic level required by the field
7	Must have job security, worker health, environmental protection knowledge and quality awareness.
8	He must possess a level of foreign language knowledge that is capable of following the innovations in his area of expertise and communication techniques.
9	Must be able to acquire basic theoretical and practical knowledge about the field in mathematics, science and basic engineering.
10	It should have the ability to plan the processes / processes of the Automotive Program to meet the expectations of the sector.
11	To be able to design the systems and components related to the field by using technical drawing, computer aided drawing, designing using simulation programs and using various softwares, to be able to make basic sizing calculations, to be able to master professional plans and projects.

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	2	4	4	4
P2	4	4	3	4	4	4
P3	3	3	5	4	3	3
P4	3	3	4	3	3	3
P5	3	3	4	3	3	3
P6	1	1	2	4	1	1
P7	3	3	2	4	3	3
P9	5	5	4	4	5	5
P10	2	2	2	4	2	2
P11	2	2	3	2	2	2

