



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Motion Control Systems							
Course Code		OTT205		Couse Level		Short Cycle (Associate's Degree)			
ECTS Credit	4	Workload	100 ( <i>Hours</i> )	Theory	3	Practice	1	Laboratory	0
Objectives of the Course		In this course, it is aimed to make maintenance and repair of motion control systems.							
Course Content		Front Tire, Tires, Brake Systems, Steering Systems, Amshorter							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration					
Name of Lecturer(s)		Assoc. Prof. Erdinç VURAL							

### Assessment Methods and Criteria

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

### Recommended or Required Reading

1	Motion Control Systems Megep Publications, Internet
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Week	Weekly Detailed Course Contents	
1	Theoretical	Pre Layout Settings
2	Theoretical	Steering Systems and Types
3	Theoretical	Shock Absorbers
4	Theoretical	Hydraulic Brake Systems
5	Theoretical	Brake Limiter
6	Theoretical	Air Brake Systems
7	Theoretical	Retarder System
8	Theoretical	ABS Brake System
9	Intermediate Exam	Midterm
10	Theoretical	Sensors Used in ABS Brake System
11	Theoretical	ASR Brake System
12	Theoretical	ESP Brake System
13	Theoretical	Sensors Used in ASR Brake System
14	Theoretical	EBD Brake System, Comparison of Brake Systems
15	Theoretical	Diagnostic Device
16	Final Exam	Semester final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Lecture - Practice	14	0	1	14
Reading	3	0	10	30
Quiz	1	0	2	2
Midterm Examination	1	5	1	6
Final Examination	1	5	1	6
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	To be able to comprehend the basic tasks, importance, different chassis structures and properties of vehicles
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2	To be able to recognize the front and rear suspension devices and their elements, to understand the movement and torque transmission forms and the operation of these elements. To be able to associate chassis, body and suspension equipment with other motion control systems.
3	To be able to relate the geometry of the front system with the steering system, to make the geometric and physical analysis. To recognize the elements of steering system
4	Power steering and electro-mechanical, electro-hydraulic steering systems to comprehend. To be able to determine the steering system failures and to understand the methods of troubleshooting
5	To understand the effects of suspension systems on vehicle dynamics. To be able to count the effects of suspension systems on vehicle performance and to correlate these effects with engine performance
6	To be able to understand the structural properties of spring springs and helical springs. The function of the shock absorber, working principles, types of learning
7	To be able to recognize different suspension systems. To be able to comprehend the structural bonds and properties of suspension systems with different suspension equipments. To be able to recognize the bellows and hydraulic reinforced systems and to be able to understand the usage areas and purposes. To be able to recognize electronically controlled suspension systems and to understand the working principles.
8	To know the concept of friction, types and physical principles of braking. To be able to recognize the elements of classical braking system and their work. Central pump, vestinghouse and wheel cylinders and other intermediate elements to recognize. To recognize the drum and disc brake systems and to understand their properties.
9	To be able to analyze the structure of ABS brake systems and to understand the working theory. To be able to analyze the structure of ASR and ESP systems and to comprehend the working theory. To be able to recognize engine brakes, shaft brakes and to understand working mechanisms. To be able to recognize the handbrake and its properties. Brake system to search for, find, adjust the knowledge and skills to be able to

#### 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
P1		3	4	4
P2		4	3	4
P3	2	2	3	4
P4	3	4	4	3
P5	3	4	3	3
P6				2
P7	2	3	3	3
P8				4
P9	3	4	4	4
P10	3	4	3	4
P11		3	3	3

