

SERVO MOTOR MECHANISMS

1	Course Title:	SERVO MOTOR MECHANISMS
2	Course Code:	MKRS236
3	Type of Course:	Optional
4	Level of Course:	Short Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Öğr. Gör. Dr. İSMET GÜCÜYENER
15	Course Lecturers:	Öğr. Gör. Ercan Yavuz, Öğr. Gör. Özcan Temel veya Meslek Yüksekokulları Yönetim Kurullarının görevlendirdiği öğretim elemanları
16	Contact information of the Course Coordinator:	ismetguc@uludag.edu.tr, 02242942349, U.Ü. TBYO Mekatronik Prg. Bşk. Görükle Bursa
17	Website:	
18	Objective of the Course:	In this course, the student will learn the servo motor structure, servo motor feedback components and servo motor drivers, and gain the knowledge and skills to set up the servo motor movement mechanism and troubleshoot faults when necessary.
19	Contribution of the Course to Professional Development:	The increasing prevalence of servo motors, including electric vehicles, brings about structural changes as a result of research on servo motors. It will provide the opportunity to understand servo motors, learn feedback systems, and perform repair and maintenance operations according to new technological developments.
20	Learning Outcomes:	
	1	Being able to connect the servo motor and its driver.
	2	Being able to control of the power and data connection of the servo motor.
	3	Being able to analysis according to feedback types.
	4	Being able to replace of the bearings of the servo motor.
	5	Being able to measure of the shaft swinging.
	6	Being able to repair of the servo motor fault coils.
	7	Being able to test of servo motor functions.
	8	Being able to install of the linear servo motor systems.
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction to the servo motor and servo systems.	

2	Brushed DC motor elements, working principle and model.			
3	Brushed DC motor position, speed and torque control methods.			
4	Adjustment of commutation angles of DC motors.			
5	Modeling and control of brushless DC motors and drive systems.			
6	Modeling and control of permanent magnet AC motors and drive systems.			
7	Adjustment of commutation angles of AC motors.			
8	Repeating courses First midterm			
9	Checking and repairing the power socket and signal socket of the servo motor			
10	Checking and removing servo motor bearings			
11	Dynamic test processes of the servo motors functions.			
12	Servo motor seçimi kriterleri, çalışma bölgeleri.			
13	Repeating courses Second midterm			
14	Linear servo systems and feedback systems.			
22	Textbooks, References and/or Other Materials:	Course notes		
Activites		Number	Duration (hour)	Total Work Load (hour)
Midterm Exam		2	40.00	2.00
Practicals/Labs		0	0.00	0.00
Self study and preparation		0	0.00	2.00
Homeworks		2	3.00	6.00
Projects		3	10.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		2	8.00	16.00
Others		0	0.00	0.00
Final Exams		1	12.00	12.00
Total Work Load				106.00
Total work load/ 30 hr		the principles of Bursa Uludağ University Associate and Undergraduate Education Regulation		
ECTS Credit of the Course				3.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	1	1	1	5	4	4	4	4	5	4	5	0	0	0	0	0
ÖK2	1	1	1	5	5	5	5	5	4	4	4	0	0	0	0	0
ÖK3	2	2	2	3	3	5	5	3	2	4	4	0	0	0	0	0
ÖK4	1	1	4	3	3	3	2	4	4	4	4	0	0	0	0	0

ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	3	3	3	3	4	3	5	4	5	5	5	0	0	0	0	0
ÖK7	3	3	4	4	5	5	4	3	3	4	4	0	0	0	0	0
ÖK8	3	4	3	5	5	5	5	3	4	5	4	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			