

INTRODUCTION TO MECHATRONIC

1	Course Title:	INTRODUCTION TO MECHATRONIC	
2	Course Code:	MAK4089	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
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:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. ZELİHA KAMIŞ KOCABIÇAK	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi, Mühendislik Fakültesi, Otomotiv Mühendisliği Bölümü 16059 Görükle/BURSA zkamis@uludag.edu.tr; Tel: 0224 2941992	
17	Website:		
18	Objective of the Course:	Defining and understanding mechatronics engineering as an engineering discipline that requires the synergistic integration of machinery, electronics, control and computer engineering throughout the design and production process of an industrial product.	
19	Contribution of the Course to Professional Development:	Learns the concept of mechatronics and enables the development of a common language in applications in multidisciplinary fields.	
20	Learning Outcomes:		
		1	Understanding the basic principles of Mechatronics's approach
		2	Understanding the basic components of mechatronic systems and their role
		3	Understanding the role of the sensor and actuator in mechatronic systems
		4	Understanding the modelling of mechatronic systems
		5	Understanding the role of control in mechatronic systems
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Introduction to Mechatronics		
2	Mechatronics basics		
3	Mechatronic system design		

4	Modeling of mechatronic systems	
5	Control in mechatronic systems	
6	Definition and properties of mechatronic system elements	
7	Actuators	
8	Sensors	
9	Repeating courses	
10	MATLAB/Simulink applications	
11	Sensors	
12	MATLAB/Simulink applications	
13	Automotive applications	
14	Automotive applications	
22	Textbooks, References and/or Other Materials:	<ol style="list-style-type: none"> 1. Lecture notes 2. MECHANTRONICS- An Introduction – Edit by Robert H Bishop, CRC Pres-Toylar & Francis Group, 2006 3. Mechatronic System Fundamentals, Rolf Isermann, Springer-Verlag London Limited, 2005 4. Mechatronics-Electronic control systems in mechanical engineering, W. Bolton, Addison Wesley Longman Limited, 2nd Edition, 1999. 5. Mechatronic Servo System Control, M. Nakamura, S. Goto, N. Kyura, Springer-Verlag Berlin Heidelberg 2004. 6. Mechatronic Systems, Sensors, and Actuators, Edit by Robert H Bishop, CRC Pres-Toylar & Francis Group, 2008
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBER
Midterm Exam		1
Quiz		0
Home work-project		0
Final Exam		1
Total		2
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Relative evaluation system
24	ECTS / WORK LOAD TABLE	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	28.00	28.00
Others	0	0.00	0.00
Final Exams	1	28.00	28.00
Total Work Load			112.00
Total work load/ 30 hr			2.80
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	0	3	2	3	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	3	4	2	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	2	2	2	2	0	0	0	0	0	0	0	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				