



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Mechatronics							
Course Code		MME511		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	202 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to teach the design of a mechatronic system.							
Course Content		Mechatronic systems, Mechatronic system components, electro-mechanic systems, sensors and applications, actuators and applications programing of mechatronic systems and programming techniques, sample application of mechatronic systems in machine design							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Project Based Study, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	15
Final Examination	1	60
Quiz	4	15
Assignment	5	5
Term Assignment	1	5

Recommended or Required Reading

1	William Bolton, "Mechatronics a multidisiplinary approach" Essex, England, Pearson education Ltd. 2008.
2	Sabri Çetinkunt, "Mechatronics" John Wiley and Sons, Inc. 2007.
3	David G Algiatore and Michael B Histan, "Introduction to Mechatronics and Measurement Systems" Mc Graw Hill.

Week	Weekly Detailed Course Contents	
1	Theoretical	Sensors and transducers
2	Theoretical	Signal acquisition and conditioning
3	Theoretical	Signal processing
4	Theoretical	Mechanical, hydraulic and pneumatic systems
5	Theoretical	Electrical and Electronical systems
6	Theoretical	System modeling, dynamic response and transfer functions
7	Theoretical	System modeling, dynamic response and transfer functions
8	Intermediate Exam	Midterm Exam
9	Theoretical	Digital logic
10	Theoretical	Microprocessors
11	Theoretical	Programming Languages
12	Theoretical	Programmable logic controller
13	Theoretical	Communication systems
14	Theoretical	Mechatronics project
15	Theoretical	Mechatronics project
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	3	98
Assignment	5	0	4	20
Term Project	1	15	10	25
Quiz	4	4	1	20
Midterm Examination	1	15	2	17



Final Examination	1	20	2	22
Total Workload (Hours)				202
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Knows Mechatronic system components
2	Knows electro-mechanic systems
3	Knows detectors, actuators, and usage fields of these components
4	Knows programming of mechatronic systems and programming techniques
5	Knows the actuator

Programme Outcomes (Mechanical Engineering Master's Without Thesis)

1	To be able to access wide and deep information with scientific researches in the field of Engineering, evaluate, interpret and implement the knowledge gained in his/her field of study
2	To be able to complete and implement "limited or incomplete data" by using the scientific methods
3	To be able to consolidate engineering problems, develop proper method(s) to solve and apply the innovative solutions to them
4	To be able to develop new and original ideas and method(s), to develop new innovative solutions at design of system, component or process
5	To be able to gain comprehensive information on modern techniques, methods and their borders which are being applied to engineering
6	To be able to design and apply analytical, modeling and experimental based research, analyze and interpret the faced complex issues during the design and apply process
7	To be able to gain high level ability to define the required information and data
8	To be able to work in multi-disciplinary teams and to take responsibility to define approaches for complex situations
9	To be able to transfer of the process and results of studies at national and international environments systematic and clear verbal or written
10	To be able to become aware of social, scientific and ethical values guarding adequacy at all professional activities and at the stage of data collection, interpretation, and announcement
11	To be able to become aware of new and developing application of profession and ability to analyze and study on those applications
12	To be able to gain ability to interpret engineering application's social and environmental dimensions and it's compliance with the social environment

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

	L1	L2	L3	L4	L5
P1	4	3	5	3	5
P2	4	3	4	3	4
P3	4	5	5	3	5
P4	3	5	4	3	4
P5	5	5	4	4	3
P6	4	4	4	3	4
P7	3	3	5	4	5
P8	4	5	5	3	5
P9	3	5	4	3	4
P10	5	5	4	4	3
P11	4	4	4	3	5
P12	4	3	5	3	5

