AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Measurement Technology						
Course Code		MME520		Couse Level		Second Cycle (Master's Degree)		
ECTS Credit	8	Workload	195 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to learn about some students experimental studies during the master thesis. How to make an experimental study and the experimental studies using measurements methods, A						
Course Content		Basics concepts, Information about the generally measurement systems, electrical measurement and certainty, displacement and area measurements, force, moment and stress measurements, vibration measurements, error analysis and experimental data analysis.						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion, Case Study, Project Based Study, Individual Study				
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	Whitehouse D.J., "Surfaces and their measurement", Hermes Penton Science, London, 2002, ISBN: 1-9039-9660-0, 395.
2	"Measurement in Technology". A textbook from the multimedia courseware METROMEDIA-ONLINE, ISBN: 80-89112-05-6.

Week	Weekly Detailed Course Contents	
1	Theoretical	History of measurement and measuring principles
2	Theoretical	Quantities and units
3	Theoretical	Measuring instruments
4	Theoretical	Properties of measuring instruments
5	Theoretical	Design and manufacturing of measuring instruments
6	Theoretical	Design criteria for instrumentation
7	Theoretical	Design criteria for instrumentation
8	Intermediate Exam	Midterm Exam
9	Theoretical	Imaging and computer vision
10	Theoretical	Optical and Tactile imaging
11	Theoretical	Measurement of length, position and dimension
12	Theoretical	Measurement of surface roughness, waviness and the primary profile
13	Theoretical	Measurement of surface roughness, waviness and the primary profile
14	Theoretical	Measurement of geometrical properties
15	Theoretical	Uncertainty of measurement
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	16	2	4	96
Assignment	5	0	3	15
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)		195
		[Total Workload (Hours) / 25*] = **ECTS**		8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to gain information about the generalized measurement systems
2	To be able to gain information about how to choose measurements systems
3	To be able to calculate the experimental errors which occurred during the experimental studies
4	To make an experimental study
5	To be able to gain information about how to analyse the results of experimental studies

Programme Outcomes *(Mechanical Engineering (English) Master)*

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 be 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 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	3	4	3	5	5
P2	3	4	3	4	4
P3	3	4	5	5	5
P4	3	3	5	4	4
P5	4	5	5	3	4
P6	3	4	4	5	4
P7	4	3	3	4	5
P8	3	4	5	3	5
P9	3	3	5	5	4
P10	4	5	5	5	4
P11	3	4	4	4	4
P12	3	4	3	4	5