



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Advanced Measurement Technique							
Course Code		MME610		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	9	Workload	229 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		To introduce theoretical and practical industrial measurement methods and applications.							
Course Content		Definition and scope of the measurement. Length measurement systems and measuring tools used in measuring. Magnification of measurements. Measuring with callipers. Measuring with micrometres.Comparators and areas of use. Surface testers. Measuring with hole indicators. Control with gages. Measuring angles: measuring with universal angle tool; measuring with cylindrical bars; measuring with balls. Measuring heat, vibration. Measuring screw, angle and length with profile projector. Measuring stress with gages.							
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)									

Prerequisites & Co-requisites

Language Requisite	Yes
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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	1. AKKUŞ, N., Temel Endüstriyel Ölçme Tekniği (Marmara Üniversitesi)
2	2. SAĞLAM, H.; İleri Ölçme Teknikleri (Selçuk Üniversitesi)
3	3. GENÇELİ, O.F.; Ölçme Tekniği, (İ.T.Ü. Makine Fakültesi)
4	4. GENÇELİ, O.F.; Optik Ölçme Metodları, (İ.T.Ü. Makine Fakültesi)
5	5. BİNİCİ, İ.; Endüstriyel Ölçme ve Kalibrasyon (Marmara Üniversitesi)

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition and scope of the measurement.
2	Theoretical	Length measurement systems and measuring tools used in measuring.
3	Theoretical	Magnification of measurements.
4	Theoretical	Measuring with calipers. Measuring with micrometers.
5	Theoretical	Surface testers.
6	Theoretical	Measuring with hole indicators.
7	Theoretical	Control with gages.
8	Intermediate Exam	Midterm Exam
9	Theoretical	Comparators and areas of use.
10	Theoretical	Measuring angles: measuring with universal angle tool; measuring with cylindrical bars; measuring with balls.
11	Theoretical	Measuring heat, vibration.
12	Theoretical	Measuring screw, angle and length with profile projector.
13	Theoretical	Measuring stress with gages.
14	Theoretical	Measuring stress with gages.
15	Theoretical	Measuring stress with gages.



16	Final Exam	Final Exam
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Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	16	5	4	144
Assignment	5	0	3	15
Term Project	1	15	10	25
Quiz	4	3	1	16
Midterm Examination	1	15	2	17
Final Examination	1	10	2	12
Total Workload (Hours)				229
[Total Workload (Hours) / 25*] = ECTS				9
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Ability to express definition and scope of the measurement.
2	Ability to tell how surface testers can be used.
3	Tells the measurement methods used for measuring angles.
4	Ability to use profile projector how to measuring screws, angles and lengths.
5	Knows the reason of vibration, heat.

Programme Outcomes (Mechanical Engineering (English) Doctorate)

1	1. In Mathematics, natural sciences and mechanical engineering, department has the sufficient infrastructure; the ability to use the theoretical and practical information for engineering solutions
2	2. The ability to identify, define, and solve the formula for complex engineering problems; the ability to select and apply for the appropriate analytical methods and modelling techniques
3	3. To meet desired needs of a system, system component, or process, analysing and designing skill under realistic constraints; in this respect, the ability to apply the methods of modern design
4	4. The ability to use and choose modern techniques and tools for required engineering applications and; the ability to use information technology effectively
5	5. The ability to design the experiment, collect the data for the experiment and interpret to analysing results
6	6. The ability to use computer software and hardware information, access to information and other information sources
7	7. The ability to work individually and with multidisciplinary teams effectively, taking responsibility self-confidence for complex situations
8	8. The ability to communicate with foreign colleagues by having high level of foreign language knowledge in the field of engineering
9	9. Monitoring the science and technology developments and the ability to renew itself with innovative ideas constantly
10	10. Professional and ethical responsibility awareness
11	11. Having an adequate information and awareness in the subjects of occupational safety, occupational health, social security rights, quality control and management issues of environmental protection
12	12. The ability to appreciate the effects of engineering solutions and applications in universal and social dimensions
13	13. The ability to be enlightened to the experts or non-expert audience groups on the issues related with engineering problems and solutions written and oral
14	14. The ability to have adequate knowledge and skills in the project development and application, manage the activities planning, including the projects to the employees having the responsibility of the project by increasing vocational awareness

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	5	4
P2	4	3	4	5	4
P3	4	4	3	5	4
P4	3	4	4	5	5
P5	5	5	4	4	5
P6	3	5	4	4	5
P7	4	3	4	4	3
P8	5	4	5	3	3
P9	3	4	5	5	5



P10	4	5	5	5	5
P11	5	4	4	5	5
P12	5	5	3	5	5
P13	3	5	5	5	5
P14	4	5	3	5	3

