



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Technology Research and Development							
Course Code		MKE159		Couse Level		Short Cycle (Associate's Degree)			
ECTS Credit	4	Workload	100 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		To contribute to the transformation of scientific knowledge and technology into innovative products through creative thinking systematics and to gain knowledge about concepts such as invention, invention, discovery, science, technique and industry 4.0.							
Course Content		Information Technology, Research and Development, Technological Design, Invention, Discovery, Science, Technical, Industry 4.0							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Project Based Study, Individual Study					
Name of Lecturer(s)		Assoc. Prof. Murat ÜNVERDİ							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Technology Research and Development Lecture notes
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Week	Weekly Detailed Course Contents	
1	Theoretical	Technology Research and Development concepts
2	Theoretical	Information technologies
3	Practice	Information technology application
4	Theoretical	Research and Development Activities and Methods
6	Theoretical	Research and Development Activities and Methods
7	Theoretical	Technological Design and Product Development
8	Practice	Technological Design and Product Development Applications
9	Intermediate Exam	Mid-Term
10	Theoretical	Examination of scientific and technological developments
11	Theoretical	Examination of scientific and technological developments
12	Theoretical	Industry 4.0
13	Theoretical	Industry 4.0
14	Practice	Project applications
15	Practice	Project applications
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	2	42
Lecture - Practice	14	1	2	42
Project	1	14	0	14
Midterm Examination	1	0	1	1
Final Examination	1	0	1	1
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Have knowledge about the concepts of Technology Research and Development.
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2	Gains knowledge of Research and Development Activities and Methods.
3	Gains knowledge of the transformation of scientific knowledge and technology into innovative products through creative systematic thinking.
4	Have knowledge about the latest developments in science and technology.
5	Gains knowledge of concepts such as invention, discovery, science, technique, industry 4.0
6	Explain the concepts of draft, model, model and prototype.

Programme Outcomes (Machinery)

1	To be able to know general properties and usage areas of industrial materials and make selection.
2	Design of machine elements.
3	To be able to make production using machining and welding machines without machining.
4	To be able to make measurement and quality control processes with machine tools for measuring and control equipment.
5	To be able to make necessary corrections in order to determine the mistakes by using the necessary non-destructive test methods in welded parts and to eliminate these mistakes.
6	Preventive measures to prevent the occurrence of these faults by preliminarily determining the faults that will occur in the machines as statistical data and to make necessary interventions in case of breakdown.
7	They can make drawings of work pieces on CAD station and apply them on CNC looms. Ability to operate and use CAD / CAM and AUTOCAD package programs.
8	To be able to transfer engineering science and technology to practice by making calculations in the direction of scientific principles.
9	It can repair the elements in pneumatic and hydraulic systems which are indispensable elements of automatic control systems and can regulate their work.
10	The student who is trained as a machine technician during the whole program knows that industrial task definition in the field of work is error finding, problem solving, decision making, planning of functions and activities and they can be achieved by aiming to acquire these characteristics.

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

	L1	L2	L3	L4	L5	L6
P1	4	5	3	3	3	3
P2	5	4	4	2	4	3
P3	4	2	5	5	5	3
P4	2	3	2	4	3	3
P5	3	5	3	3	2	3
P6	5	4	5	5	4	3
P7	5	3	4	2	5	2
P8	2	5	2	4	3	4
P9	5	5	3	5	4	5
P10	4	3	5	3	5	3

