



AYDIN ADNAN MENDERES UNIVERSITY
AYDIN VOCATIONAL SCHOOL
MECHANICAL AND METAL TECHNOLOGY
MACHINERY
COURSE INFORMATION FORM

Course Title	Mechanical Design								
Course Code	MKE162			Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	5	Workload	125 (Hours)	Theory	3	Practice	1	Laboratory	0
Objectives of the Course	To be able to comprehend the general properties of a part or machine design. Being able to conduct preliminary research for the production machine.								
Course Content	Schematic drawing of parts and machines, Ability to choose the materials with suitable features for design. To be able to calculate the dynamic and static strength calculations of the selected material for design and to choose the material with appropriate strength. Drawing the sketches of the installation drawings of the parts to be designed separately.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading

1	Makine Tasarımı ders notları
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Week	Weekly Detailed Course Contents	
1	Theoretical	To be able to comprehend the general properties of a part or machine design.
2	Theoretical	Being able to conduct preliminary research for the production machine.
3	Theoretical	To be able to do research on similar parts and machines.
4	Theoretical	Be able to evaluate the opinions and proposals of designers who have worked or experienced in the field.
5	Theoretical	Schematic drawing of parts and machines,
6	Theoretical	To be able to choose materials suitable for design.
7	Theoretical	To be able to calculate the dynamic and static strength calculations of the selected material for design and to choose the material with appropriate strength.
8	Theoretical	Drawing the sketches of the installation drawings of the parts to be designed separately.
9	Intermediate Exam	Midterm
10	Theoretical	Designed sketches can be ordered according to the drawings in suitable dimensions and stitched.
11	Theoretical	To be able to determine the sequence of production, To be able to combine the produced parts, to choose the appropriate one from welding, solder, bolted connections,
12	Theoretical	Ability to choose motor, reducer and electric power source and other elements in suitable specifications.
13	Theoretical	Aesthetic and ergonomics can grasp the place.
14	Theoretical	Be able to choose the appropriate method for dyeing and coating operations.
15	Theoretical	To be able to sort the sequence of operations for parts and machines to be produced. To be able to design a product to be converted from raw to finished products.
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Lecture - Practice	14	0	1	14
Assignment	5	0	3	15
Term Project	10	0	2	20
Laboratory	16	0	2	32



Midterm Examination	1	0	1	1
Final Examination	1	0	1	1
Total Workload (Hours)				125
[Total Workload (Hours) / 25*] = ECTS				5
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Making machine design
2	Do material calculations
3	Make material choice
4	Draw a schematic picture of the part and machine
5	To be able to determine the sequence of production, To be able to combine the produced parts, to choose the appropriate one from welding, solder, bolted connections,

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
P1	5	4	5
P2	5	4	4
P3	4	4	4
P4	4	4	4
P5	5	3	4
P6	4	4	5
P7	4	4	4
P8	5	4	4
P9	4	4	4
P10	4	4	5

