



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

Course Title	Computer Aided Manufacturing - I								
Course Code	MKE203			Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	5	Workload	125 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	is aimed to gain proficiency to create toolpaths for CNC lathe machines using two-dimensional, three-dimensional drawings using CAM programs.								
Course Content	Making working screen and drawing settings, 3D drawing commands and 3D drawing, CNC lathe data transfer methods, CNC lathe data transfer methods								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Case Study, Individual Study								
Name of Lecturer(s)	Ins. Mustafa Burak GÜNAY								

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Bilgisayar Destekli Üretim I Ders Notları
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Week	Weekly Detailed Course Contents	
1	Theoretical	Drawing drawing and drawing commands, Drawing, Editing pre-modeling, Creating a file (specifying the shape of the rough part)
2	Theoretical	3D Drawing commands and 3D drawing, Drawings, Edit ready-made models, 3D File creation options (specify rough shape)
3	Theoretical	etermination of reference point, Identification of element on solid model part
4	Theoretical	Transferring the parts to be machined in two dimensions to the machining part, showing the tool path, selecting the insert and tip holder to be used, forming the insert and tool holder
5	Theoretical	Selecting the operation to be used, forehead turning operation, rough turning operation, finish turning operation
6	Theoretical	Rough channel turning, precision channel turning, hole drilling, hole turning, threading
7	Theoretical	Simulation of tool paths, Transferring the part to be machined to the three-dimensional machining part, Defining feature
8	Theoretical	Selecting the tool path, Selecting the insert and tool holder to be used, Creating insert and tool holder
9	Intermediate Exam	Midterm
10	Theoretical	Choosing the operation to be used, forehead turning operation, rough turning operation
11	Theoretical	Finish turning, Coarse channel turning, Precise channel turning
12	Theoretical	Hole drilling, Hole turning, Threading, Simulating tool paths
13	Theoretical	Choosing a bench code pre-processor to derive NC codes, deriving NC codes
14	Theoretical	Data transfer methods to CNC lathe, data transfer methods from CNC lathe
15	Theoretical	CNC lathe workpiece preparation for machining, CNC machining by machined tool path machining
16	Final Exam	Final Examination

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	14	0	3	42
Laboratory	5	0	3	15
Midterm Examination	1	5	1	6



Final Examination	1	5	1	6
			Total Workload (Hours)	125
			[Total Workload (Hours) / 25*] = ECTS	5
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Coding systems and overall structure of the CNC machine
2	Learning to use the CNC lathe
3	Learning to use the CNC Vertical Machine
4	Learn CNC programming manual
5	Learn CNC Control panel

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.

