



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Cnc Turning Technology							
Course Code		MKE205		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	6	Workload	150 (<i>Hours</i>)	Theory	3	Practice	1	Laboratory	0
Objectives of the Course		It is aimed to gain competencies to prepare CNC lathe for work, to write programs and to make production.							
Course Content		Features of CNC lathe, parts of CNC lathe, working principles of CNC lathe, coordinates of worktop, reference points, types of control panel, control panel keys and features							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Case 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	Cnc Torna Teknolojisi Ders Notları
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Week	Weekly Detailed Course Contents	
1	Theoretical	Characteristics of CNC lathe, parts of CNC lathe, working principles of CNC lathe
2	Theoretical	Counter coordinate axes, Reference points, Control panel types, Control panel keys and properties
3	Theoretical	Cutter and workpiece relationship, Cutter types, properties and usage places, Tool compensation settings, Tool holders and fasteners
4	Theoretical	Zero points on the parts, Properties of the elements used in reset, Resetting the tool according to the part to be machined, Elements and properties used in tool setting
5	Theoretical	Cutting depth, working angle and progress, Grinding depth calculation of tools, Bonding apparatuses, Bonding control tools, Workpiece zeroing methods
6	Theoretical	Programming principles in CNC lathes, Positioning systems, Process and preparation commands, Auxiliary commands, Special commands
7	Theoretical	Motion systems in CNC lathe machines, Coordinate systems, Motion modes, Command types, Axes
8	Theoretical	Definition and importance of simulation, Simulation programs, Running programs
9	Intermediate Exam	Midterm Examination
10	Theoretical	Programming using CNC turning systems, Front turning cycle, Longitudinal rough turning cycle, Radius chamfering cycle, Channel opening cycle
11	Theoretical	Programming using CNC turning systems, Profile coarse cycle, Cavity channel cycle, Deep hole drilling cycle, Tooth turning cycle
12	Theoretical	Subprogramming technique, Subprogramming structure
13	Theoretical	Programming using sub-program on CNC lathe
14	Theoretical	Alarm options in CNC looms, Error codes used in programming, Counter progress mode settings
15	Theoretical	Measurement and control
16	Final Exam	Final Examination

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Lecture - Practice	14	0	1	14
Assignment	20	0	2	40
Project	20	0	2	40
Reading	2	0	1	2



Midterm Examination	1	5	1	6
Final Examination	1	5	1	6
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Preparing the CNC Lathe for work
2	Writing program for CNC lathe
3	Production on CNC Lathe Machine
4	Apply different manufacturing methods at CNC Machine
5	Alarm options in CNC looms, Error codes used in programming, Counter progress mode settings

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
P1	5	4	5	3	4
P2	5	4	5	4	4
P3	5	5	5	5	4
P4	5	5	4	4	4
P5	4	5	4	5	4
P6	5	5	3	5	4
P7	4	5	4	5	4
P8	5	5	4	5	4
P9	4	5	4	2	4
P10	5	4	4	5	4

