



T.C. ESKİŞEHİR OSMANGAZI UNIVERSITY
ARCHITECTURE AND ENGINEERING FACULTY
MECHANICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	FALL
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COURSE CODE	151817445-151837445	COURSE NAME	SPESIFIC MACHINE TOOLS (Technical Elective I)
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
7	3	0		3	5	COMPULSORY () ELECTIVE (x)	Turkish

COURSE CATAGORY

Basic Science	Basic Engineering	Mechanical Engineering [if it contains considerable design, mark with (√)]	Social Science
		(X)	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
	MID-TERM	Mid-Term	1
Quiz			
Homework			
Project			
Report			
Others (.....)			
FINAL EXAM		1	50

PREREQUIEITE(S)	
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COURSE DESCRIPTION	Description of NC Control, Spindle Motion, Spindle Control, Tool Control, Part programming and the functions, Feeds and Spindle speeds, Part programming techniques, G functions, M functions, Part programming at the EMCO5 Educational CNC Machine Tool, part programming at FANUC Lathe.
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COURSE OBJECTIVES	The main aim of the course is introduce to Numerical Control and programming techniques.
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ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Learn the NC Control, Understand the tool control and Repeatability, learn the turrets, tool magazines, learn the part programming and the terms, learn G functions, understand part programming and manufacturing at the EMCO5 Educational CNC Machine Tool, Preparing of the part programming at the FANUC Lathe.
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COURSE OUTCOMES	Description of NC Control, Introduce to CNC Machine Tools, Understand the tool control and repeatability, Saving the part programming and the terms, preparing of the part programmes and comments, list and derive G and M Functions, Use and practise part programmes, test and simulate programmes, Evaluate of the part programmes.
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TEXTBOOK	Şekerioğlu, A., CNC Tezgahlar, Bilim Teknik Yayınevi, 1995 MALKOÇ Ali, Özel Takım Tezgahları Ders Notları,1999 FANUC Operator's Manual, 1988
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OTHER REFERENCES	Kief,H.B.,Waters,T.F.(1992).Computer Numerical Control.Singapore:McGraw-Hill Book Company. Ünsaçar,F ve Çoklar,A.N.,CNC Tezgahlarının Programlanması,Atlas Yayın Dağıtım, İstanbul, 2003 Related Turkish and English Literature
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TOOLS AND EQUIPMENTS REQUIRED	
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COURSE SYLLABUS	
WEEK	TOPICS
1	Description of NC Control
2	Slide motions, Spindle motion
3	Spindle control, tool control
4	Jig and fixtures
5	Part programming and the terms
6	Mid-Term Examination 1
7	Feeds and Spindle speeds
8	Part programming techniques
9	G Functions
10	M Functions
11	Mid-Term Examination 2
12	Part programming at the EMC05 Educational CNC Lathe
13	Part programming at FANUC Lathe
14	Practice
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and mechanical engineering ; an ability to apply theoretical and practical knowledge on solving and modeling of mechanical engineering problems.		X	
2	Ability to determine, define, formulate and solve complex mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		X	
3	Ability to design a complex system, a component and/or an engineering process under real life constraints or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			X
4	Ability to develop, select and use modern methods and tools required for mechanical engineering applications; ability to effective use of information technologies.		X	
5	In order to investigate mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			X
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		X	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		X	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		X	
9	Understanding of professional and ethical issues and taking responsibility			X
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			X
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			X
1:None. 2:Partially contribution. 3: Completely contribution.				

Prepared by: Öğr.Gör.Dr. Ahmet Nafi PEKÖZCAN

Date: Signature(s):

