



ESOGÜ Mathematics and Computer Sciences COURSE INFORMATION FORM

SEMESTER	Fall
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COURSE CODE	821613004	COURSE NAME	Computer Architecture
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
3	3	0	0	3	5	COMPULSORY (x) ELECTIVE ()	Turkish

COURSE CATAGORY

Mathematics	Computer		Social Science
	X		

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (.....)		
FINAL EXAM		1	50

PREREQUIEITE(S)

none

COURSE DESCRIPTION

Computer arithmetic, CPU concepts, instruction fetching and decoding, CISC and RISC Structures, main memory, I/O organization, CPU instruction sets and addressing modes.

COURSE OBJECTIVES

To understand the structure, function and characteristics of computer systems To understand the design of the various functional units of digital computers Binary, Octal, and Hexadecimal number systems. To learn basics of Boolean Logic and Applications

ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION

Cover basic concepts on which the stored program digital computer is formulated. This goal addresses the question, how does a computer work and how is it organized.

COURSE OUTCOMES

Be familiar with the binary and hexadecimal number systems including computer arithmetic, Be familiar with the Von Neumann architecture, Be familiar with the functional units of the processor such as the register file and arithmetic logical unit, Be familiar with the cost performance issues and design trade offs in designing and constructing a computer processor including memory. Be familiar with the quantitative performance evaluation of computer systems, Be familiar with the cache subsystem, Be familiar with the basic knowledge the design of digital logic circuits and apply to computer organization.

TEXTBOOK

Computer Organization and Architecture: Principles of Structure and Function, Stallings, 1st edition. John Wiley and Sons, Inc. 1987. ISBN 0471202088

OTHER REFERENCES

1) Lecture Notes

TOOLS AND EQUIPMENTS REQUIRED**COURSE SYLLABUS**

WEEK	TOPICS
1	Introduction and A Brief History
2	Number Systems and Binary Codes
3	Fundamentals of Digital Systems
4	CPU Structure and Function
5	Midterm
6	Instruction Sets
7	Control Unit Operation
8	Computer Interconnection Structures
9	Internal and External Memory
10	PC
11	Cache Memory and Cache Memory Mapping
12	Input / Output
13	Computer Arithmetics
14	Operating Systems
15,16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	The ability to apply knowledges of Mathematics and Computer Sciences,		X	
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,			X
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,			X
4	The skill to solve and design a problem process in accordance with a defined target,			x
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,		X	
6	The skill to use the modern techniques and computational tools needed for mathematical applications,			X
7	The skill to make team work within the discipline and interdisciplinary,			X
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,	X		
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,			X
10	The skill to have professional and ethical responsibility,	X		
11	The skill to have consciousness for quality issues and scientific research,	X		
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,			X
13	Ability to solve problems in the working life faced to find an appropriate algorithms via mathematical modeling and to write computer programs,	X		
14	The skill to developed design of software systems at different complex levels,			X
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.	x		

1:None. 2:Partially contribution. 3: Completely contribution.

Instructor(s): Dr. Özer ÇELİK

Signature:

Date: