TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Computer And Software Engıneerıng

Course Information

COMPUTER ORGANIZATION					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
CSE303	Fall	3	0	3	4

Prerequisites and co-requisites	None
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	Asst. Prof. Dr. Mehmet Ali AKTAŞ
Mode of Delivery	Face to Face
Suggested Subject	None
Professional practise (internship)	None
Objectives of the Course	This course aims to provide the students with detailed information about layered architecture of computers, to examine and compare today's processors with various aspects.
Contents of the Course	Structured Computer Organization. Layered structures. Computer Systems Organization: Processors, memory, secondary memory, input / output. Numerical Logic Level. Micromimari level. Command Set Level. Operating Systems Level. Combining Language Level. Layered structure of Pentium IV, SPARC III and 8051 processors.

Learning Outcomes of Course

#	Learning Outcomes
1	To define the layered architecture of computers.
2	To recognize hardware components of a computer system.
3	To describe an example processor design.
4	To decribe important factors in designing instruction sets.
5	To describe and compare assembly language, assembly process, linking and loading concepts.
6	To compare modern CPUs in terms of digital logic, microarchitecture, instruction set levels.
7	To use a foreign language effectively in writing
8	To recognize the importance of following the fast improvements in computer architectures.

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Introduction: Structured Computer Organisation, History of Computer Systems, Example Computer Families.	Lecture, discussion, presentation
2	Computer System Organisation: Processor organisation. CISC and RISC architectures.	Lecture, discussion, presentation
3	Computer System Organisation: Instruction and Processor LEvel Parallelism. Main memory.	Lecture, discussion, presentation
4	Computer System Organisation: Secondary memory. I/O.	Lecture, discussion, presentation

5	Digital Logic Level: CPU chips and busses. Example CPU chips.	Lecture, discussion, presentation
6	Digital Logic Level: Example buses, interfaces.	Lecture, discussion, presentation
7	Midterm Exam	Lecture, discussion, presentation
8	Mikroarchitecture Level: Comparison of the microarchitecture levels of Pentium IV, Sparc III, 8051 processors.	Lecture, discussion, presentation
9	Instruction Set Architecture: Data types. Instruction formats. Addressing. Instruction types. IS-64 Architecture. Operating System Level.	Lecture, discussion, presentation
10	Assembly Language Level: Assembly Language, loading, linking.	Lecture, discussion, presentation
11	Assembly Programming Language	Lecture, discussion, presentation
12	Assembly Programming Language	Lecture, discussion, presentation
13	Assembly Programming Language	Lecture, discussion, presentation
14	Final Exam	Lecture, discussion, presentation
15		
16		

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	To define the layered architecture of computers.	2,3	1,2
2	To recognize hardware components of a computer system.	2,3	1,2
3	To describe an example processor design.	2,3	1,2
4	To decribe important factors in designing instruction sets.	2,3	1,2
5	To describe and compare assembly language, assembly process, linking and loading concepts.	2,3	1,2
6	To compare modern CPUs in terms of digital logic, microarchitecture, instruction set levels.	2,3	1,2
7	To use a foreign language effectively in writing	2,3	1,2
8	To recognize the importance of following the fast improvements in computer architectures.	2,3	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	3	42
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	2	28
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	1	1
8	Midterm Exam	1	2	2
9	Quiz	0	0	0
10	Homework	1	20	20
11	Midterm Project	1	7	7
12	Midterm Exercise	0	0	0
13	Final Project	1	7	7
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	1	1
16	Final Exam	1	2	2
				110