

COURSE INFORMATION					
Course Title	Code	Semester	L+P Hour	Credits	ECTS
ADVANCED TOPICS IN SYSTEMS ARCHITECTURE	CSE 620	1	3 + 0	3	10

Prerequisites	
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Language of Instruction	English
Course Level	Graduate
Course Type	Compulsory
Course Coordinator	
Instructors	Gürhan Küçük
Assistants	
Goals	The aim of this course is to provide students with knowledge and abilities to do research in Systems Architecture area.
Content	Advanced and recent research issues in Systems Architecture.

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1. Ability to conduct experiments, gather data, analyze and interpret results for investigating engineering solutions to systems architecture problems.	1,2,3,4	1,2	B,D
2. Ability to understand a published work, to investigate its cons and pros and to present.	1,2,4	1,2	A,C
3. Ability to write a research paper.	3,4	1,2	D

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Lab
Assessment Methods:	A: Testing, B: Experiment, C: Homework, D: Term Project

COURSE CONTENT		
Week	Topics	Study Materials
1	Introduction	
2	Research areas: SMTs, CMPs, GPUs, Memory, Security, Power/Energy, Complexity, Performance	
3	Paper discussion – I	
4	Paper discussion – II	
5	Paper discussion – III	
6	Area specialization and focusing on selected areas and topics	
7	Experimental methodology	
8	Midterm Examination	
9	Deep analysis and simulation of the selected studies	
10	Research proposal, analysis and design details	
11	Implementation of the proposed method	
12	Tests and collection of the test results	
13	Paper write-up	
14	Paper presentation	

RECOMMENDED SOURCES	
Textbook	
Additional Resources	Research papers from the recent top conferences are studied.

MATERIAL SHARING	
Documents	
Assignments	
Exams	

ASSESSMENT		
IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms	1	20
Quizzes		
Assignment (Paper critiques)	6	20
Term Project and Presentation	1	60
Total		100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		0
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		100
Total		100

COURSE CATEGORY	Expertise/Field Courses
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COURSE'S CONTRIBUTION TO PROGRAM						
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Knowledge in the advanced computer architecture field					X
2	Knowledge in advanced system design for computer engineering					X
3	Knowledge in the theoretical topics of computer science				X	
4	Ability to comprehend, analyse and critique academic publications and conduct scholarly research at the frontiers of computer engineering					X
5	Ability and knowledge in the fields of Next-Generation and contemporary computer networks					

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding the exam week: 13x Total course hours)	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	6	84
Mid-terms	1	3	3
Homework	6	3	18
Term Project and Presentation	1	125	100
Total Work Load			269
Total Work Load / 25 (h)			10,76
ECTS Credit of the Course			10