



MARMARA UNIVERSITY - FACULTY OF ENGINEERING

2017-2018 Fall

CSE4032 Introduction to Distributed Systems

COURSE DESCRIPTION FORM

Offering Department	Department of Computer Engineering		Technical Elective				
Course Code	CSE4032						
Course Name	Introduction to Distributed Systems						
Language of Instruction	English						
ECTS	5						
Contact Hours	Theoretical (T): 3		Practice (U): 0		Laboratory (L): 0		
Pre-requisites	-						
Instructor	Name						
	E-mail						
Course Materials	Mandatory						
	Recommended		Ludwik Czaja, 2018. Introduction to Distributed Computer Systems: Principles and Features				
Course Objectives	To give basic information about the design, implementation and management of distributed systems						
Course Content	This course focuses on the basic concepts underlying the design, implementation and management of distributed systems. Basic concepts in distributed systems include basic topics such as synchronization, selection, distributed agreement, inter-process communication and coordination, replicated data management, distributed objects, security and directory and discovery services.						
Learning Outcomes	LO 1	Explain the principles of distributed systems (naming, architecture, fault tolerance, etc.)					
	LO 2	Explain the working principles of Peer-to-Peer systems and DHT concept					
	LO 3	Describe the principles of Apache Hadoop and similar distributed systems					
	LO 4	Understand the security issues in distributed systems and know the methods for eliminating these issues.					
Program Outcomes			LO1	LO 2	LO 3	LO 4	
PO1	Adequate knowledge in mathematics (a), science and computer engineering (b) subjects pertaining to the relevant discipline (1); ability to use theoretical and applied information in these areas to model and solve engineering problems (2).		1a		2		
PO3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way so as to meet the desired result (a); ability to apply modern design methods for this purpose (b).			a		a	
PO4	Ability to devise (a), select, and use modern techniques and tools (b) needed for engineering practice (1); ability to employ information technologies effectively (2).				1b2		
Subjects (Knowledge, Skills and Behaviours), Contributions of Subjects to Learning Outcomes, Assessment Methods	No	Week	Subjects	LO 1	LO 2	LO 3	LO 4
	S1	1-2	Distributed Systems- Aims, Features, Applications	MF			
	S2	3-4	Synchronism	MF	MF		
	S3	5-6	Time, coordination, mutual exclusion without supervision manager	MF	MF		
	S4	7-8	Communication between processes		MF		
	S5	9-10	Remote procedure call			MF	
	S6	11-12	Errors and Losses in Distributed Systems				MF
S7	13-14	Distributed Shared Memory				MF	
Assessment Methods and Weights	No	Type	Weight	Implementation Rule		Make-up Rule	
	MF	Midterm, Final	70%	There will be 1 midterm and 1 final exam. Books and all course materials will be closed at exams. Using a calculator is allowed.		The students who fail to take the midterm exam due to one of the excuses listed in the Marmara University Excuse Examination Directive inform the department secretary within five days following the exam. Those who are accepted by the board of directors in accordance with the principles determined by the Senate, use the right of examination in the excuse period specified in the academic calendar. The excuse of the final exam is applied in the make-up exam.	

	P	Project	30%	Design project is implemented by selecting one of human-computer interaction applications or corresponding research topics in this domain.	-										
	Total		100%												
Determining Letter Grades	<ul style="list-style-type: none"> The letter grades will be determined based on the midterm and project. In order to determine the letter grade, a curve or catalog based method will be followed based on the total average scores of the students. The final exam score and the total average score of the student must be at least 35 to pass the course. According to Marmara University Undergraduate regulations, the weight of the final exam must be at least 40 out of 100. 														
	<table border="1"> <tr> <td>Assessment</td> <td>Midterm</td> <td>Project</td> <td>Final</td> <td>Total</td> </tr> <tr> <td>Weight</td> <td>30</td> <td>30</td> <td>40</td> <td>100</td> </tr> </table>					Assessment	Midterm	Project	Final	Total	Weight	30	30	40	100
	Assessment	Midterm	Project	Final	Total										
Weight	30	30	40	100											
Time Applied by Instructor															
Teaching Method, Student Work Load	No	Method	Explanation		Hours										
	1	Lectures	Lectures are given in class using the board or via presentations. Example questions are solved to enhance the concepts.		14x3=42										
	2	Problem Session/ Practice	Problems related to the course topics are solved on the board.												
	3	Laboratory	Experiments are done in the laboratory or theoretical concepts covered during the lectures are practiced using computer exercises.												
	4	Interactive Courses	Questions are asked to students during lectures and they are encouraged to guess the answers (peer learning is also in this category)												
	5	Field Work	Students attend activities outside the campus.												
	6	Midterm	Midterm exam is given during the midterm week.		2										
	7	Final	Final exam is given during the final exam week.		2										
	Estimated Time to be Allocated by a Student														
	8	Project	The students carry out research about the problem given in the project.		40										
	9	Homework	The students solve the problems given as homework.												
	10	Pre-class learning of Course Material	The students study and learn the new subjects from course materials.												
	11	Review of Course Material	Students review the course subjects from course materials to prepare for the exams and homework.		35										
12	Office Hour	Students ask questions to the instructor or the assistant during office hours.		2											
Total				123											
Academic Honesty	Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.														
	In case academic dishonesty is observed, the first authority is the instructor of the course. The instructor may decide to give the student zero for the homework(s)/lab(s)/exam(s), give the letter grade FF, or may take disciplinary action.														