

MARMARA UNIVERSITY - FACULTY OF ENGINEERING

2017-2018 Spring

CSE4075 Wireless and Mobile Networks

COURSE DESCRIPTION FORM

Offering Department	Department of Computer Engineering		Technical Elective					
Course Code	CSE4075							
Course Name	Wireless and Mobile Networks							
Language of Instruction	English							
ECTS	5							
Contact Hours	Theoretical (T): 3	Practice (P):	Laboratory (L):					
Pre-requisites	CSE4074 Computer Networks							
Instructor	Name	Müjdat Soytürk						
	E-mail	mujdat.soyturk@marmara.edu.tr						
Course Materials	Mandatory	1. Zheng, et.al., Wireless Networking Complete, Morgan Kaufmann, 2010. 2. Jochen Schiller, Mobile Communications, 2nd Ed., Addison Wesley, 2003.						
	Recommended	1. Vijay K. Garg, Wireless Communications and Networking. Morgan Kaufmann, 2007. 2. William Stallings, Wireless Communications and Networks, Prentice-Hall, 2nd Ed., 2005						
Course Objectives	Introducing Fundamentals and basic information about Wireless and Mobile Networks, giving the factors that affect performance in wireless and mobile data transmission, showing wireless and mobile network components of a system, teaching developing technologies.							
Course Content	Fundamentals of wireless communication; Cellular network technologies (GSM Networks, CDMA Systems, 2G, 2.5G, 3G, 4G Network Architectures); Management of Mobility and Handover; Data access networks (GPRS, EDGE); New generation cellular network standards (3GPP, HSPA, Evolved HSPA, LTE, E-UTRAN, EPC, LTE Advanced, 3GPP2); Wireless LAN (IEEE 802.11 family) and WiMAX; Wireless personal area networks (Bluetooth, Wireless Sensor Networks, ZigBee, Evolving WPAN Technologies using UWB); Mobile IP; Satellite networks.							
Learning Outcomes	LO1	Follow current issues in wireless and mobile networks						
	LO2	Able to read and understand technical articles in Wireless and Mobile Networks						
	LO3	Learn the fundamental principles and techniques of various types of networks such as Cellular Networks, Wireless LANs, Wireless Sensor Networks, Satellite Networks						
	LO4	Learn the effects of mobility and resource limitations on MAC, networking, transport and application layers						
	LO5	Able to define fundamental concepts, types, advantages and basic security issues of wireless and mobile networks						
Program Outcomes		LO1	LO2	LO3	LO4	LO5		
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	a	a	a		
PO13	Knowledge of mathematics, basic sciences (a), computer science (b) and engineering sciences (c) required for the design and analysis of complex electrical and electronic devices, software and systems including hardware and software.			a, b	b			
Subjects (Knowledge, Skills and Behaviours), Contributions of Subjects to Learning Outcomes, Assessment Methods	No	Week	Subjects	LO1	LO2	LO3	LO4	LO5
	S1	1	Introduction to Wireless Communication					H
	S2	2	Fundamentals of Radio Communication					H, MF
	S3	3	Fundamentals of Microwave Communication					H, MF
	S4	4	Wireless Personal Area Networks (WPAN)	H	H	MF	MF	
	S5	5	Wireless Local Area Networks (WLAN)	H	H	MF	MF	
	S6	6	WiMAX Technology	H	H	MF	MF	
	S7	7-8	Cellular Network Communication	H	H	MF	MF	
	S8	9	Basics of GSM			MF	MF	
	S9	10	CDMA Systems			MF	MF	
	S10	11	Wireless Data Access Networks			MF	MF	
	S11	12	Cellular Network Technologies and Architectures		P	MF	MF	
	S12	13	Evolution of 3G Standards			MF	MF	
	S13	14	Satellite Networks			MF	MF	
Assessment Methods and Weights	No	Type	Weight	Implementation Rule		Make-up Rule		
	MF	Midterm, Final	70%	One midterm and one final exam will be held. In the exams, books and any course materials are not allowed to use. Use of a calculator is allowed.		Marmara University regulations will be followed for make-up exams.		
	H	Homeworks	10%	The deadline for the assignment is two weeks after the				

			assignment. Late delivery is not accepted. Zero is taken from the unreported assignment. At least 2 assignments are given.																																																								
	P	Project	20%	The code and the report of the project are collected at the 13th week of the semester. Late delivery is not accepted. Score zero given for the non-delivered project.																																																							
	TOTAL		100%																																																								
Determining Letter Grades	<ul style="list-style-type: none"> Letter grades will be determined based on the performance in the midterm exam, final exam, quizzes and assignments. 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. 																																																										
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Academic Honesty	<p>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.</p>																																																										
	<p>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.</p>																																																										