

WIRELESS NETWORKS

1	Course Title:	WIRELESS NETWORKS
2	Course Code:	EEM4412
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	8
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. SAİT ESER KARLIK
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	E-posta:kocyigit@uludag.edu.tr Tel: (224) 294 1908 Adres: Mühendislik-Mimarlık Fakültesi, Elektronik Mühendisliği Bölümü, 5. Kat, Oda No:510, 16059 Nilüfer/BURSA
17	Website:	
18	Objective of the Course:	To analyse the wireless networks principles, standards and various network structures, and to introduce undergraduate students to wireless network design, installation and management techniques; thanks to this , to provide them to be able to analyse modern wireless networks and to support that they could be raised the expedient wireless network design and installation.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	will be able to model and solve wireless network problems theoretical and practical knowledge.
	2	will be able to identify, model, and solve wireless networks problems; will be able to select and apply appropriate analysis and modelling methods for wireless networks problems.
	3	will be able to design partly or fully wireless network specific requirements under realistic constraints and conditions.
	4	will be able to develop, select, and use modern techniques and tools necessary for wireless networks applications; will be able to use information technologies in an efficient way.
	5	will be able to design and conduct wireless networks experiments and will be able to collect, analyze and interpret data for wireless networks problems.
	6	will be able to gain the ability to conduct team works.
	7	will be able to access information and follow recent advances in wireless networks.
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21	Course Content:			
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Week	Theoretical	Practice		
1	Introduction to wireless networks, principles and fundamentals of wireless communication.			
2	Wireless communication characteristics, channel models, attenuation and sample calculations.			
3	Modulation and multiple access techniques in wireless communication: FDMA, TDMA, CDMA, CSMA, FHSS and DSSS.			
4	GSM systems: frequency reusing, improving capacity and attenuation calculations.			
5	GSM system architectures, access techniques, speech coding format, evolution standards in GSM systems			
6	Wireless Local Area Networks (WLAN): WLAN topologies, standards, operation mods and physical layer.			
7	Medium Access Control (MAC) sublayer- HIPERLAN 1 MAC, IEEE 802.11 MAC, HIPERLAN 2, wireless routing protocols and performance problems on wireless networks			
8	Midterm Exam and Course Revise			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical				
11	Bluetooth, HiperLAN and Mobile IP	14	3.00	42.00
WiMAX: WiMAX physical layer, WiMAX MAC.				
Practicals/Labs		0	0.00	0.00
Subjects:				
12	Self study and preparation	10	3.00	30.00
Wireless application protocol (WAP), XML				
Homeworks		2	4.00	8.00
13	Projects	1	20.00	20.00
Security in wireless Networks.				
Field Studies		0	0.00	0.00
Discussion.				
Midterm exams		1	20.00	20.00
Others		3	5.00	15.00
Materials:				
Final Exams		2	30.00	30.00
Morgan Kauffmann Series in Networking, 2007				
Panadimitriou G. I., Pomportsis A. S. P. Nicopolitidis &				
Total Work Load				165.00
Total work load/ 30 hr		3		5.50
Koçyigit I., Wireless Networks Lecture Notes, Uludağ University, 2011				
ECTS Credit of the Course				4.00
23	Assesment			
TERM LEARNING ACTIVITIES		NUMBER	WEIGHT	
Midterm Exam		1	25.00	
Quiz		0	0.00	
Home work-project		2	25.00	
Final Exam		1	50.00	
Total		4	100.00	
Contribution of Term (Year) Learning Activities to Success Grade		50.00		
Contribution of Final Exam to Success Grade		50.00		
Total		100.00		

Measurement and Evaluation Techniques Used in the Course																
24	ECTS / WORK LOAD TABLE															
25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
ÖK7	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			