

COMMUNICATION NETWORKS

1	Course Title:	COMMUNICATION NETWORKS	
2	Course Code:	EEM4410	
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:	-	
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:ekarlik@uludag.edu.tr Tel: (224) 294 20 95 Adres: Elektronik Mühendisliği Bölümü 5. Kat, No:529	
17	Website:		
18	Objective of the Course:	To gain sufficient background about architectures, implementation an operational principles of current communication networks; to determine and solve basic problems in communication networks; to determine performance of a communication network; to design a basic network; to develop and select proper transmission methods and devices for communication networks	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To gain sufficient background about architectures, implementation an operational principles of current communication networks
		2	To determine basic problems in communication networks
		3	To solve basic problems in communication networks
		4	To determine performance of a communication network and to design a basic network
		5	To develop proper transmission methods for communication networks
		6	To select proper devices for communication networks
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	

1	Introduction to communication networks, network types (LAN, MAN, WAN, wireless and private networks), OSI and TCP/IP reference models	
2	Network examples and standardization	
3	Physical layer standards	
4	Data-link layer- basic data-link protocols, protocol authentication, high level data-link control (HDLC), Internet data-link layer	
5	Medium access control (MAC) sublayer- static and dynamic channel allocation in LANs and MANs, multiple access protocols	
6	Data-link layer switching devices	
7	Network layer- network layer design principles, routing and congestion control algorithms	
8	Repeating courses and midterm exam	
9	Network layer - Quality of service (QoS), interoperability, internet network layer	
10	Transport Layer- Basic transmission protocols, Internet transmission protocols: UDP	
11	Internet transmission protocols: TCP, network performance	
12	Application layer- DNS and e-mail applications	
13	Application layer- WWW and multimedia applications	
14	Network security- security algorithms, security protocols, e-mail and web security	
22	Textbooks, References and/or Other Materials:	<ol style="list-style-type: none"> 1. Data and Computer Communications, William Stallings, 9th Ed., Prentice Hall, 2010. 2. Computer Networks, A. S. Tanenbaum, 5th Ed., Prentice Hall, 2010. 3. Bilgisayar Haberleşmesi ve Ağ Teknolojileri, Rifat Çölkesen ve Bülent Örencik, Papatya Yayınları, 2008. 4. Bilgisayar Ağları ve Ağ Güvenliği, Osman Nuri Uçan ve Onur Osman, Nobel Yay. Dağıt., 2006. 5. Bilgisayar Ağları, B. Demir Öner, Papatya Yayınları 2003.
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBE R
		WEIGHT
Midterm Exam	2	50.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	50.00
Total	3	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	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	4.00	56.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	2	20.00	40.00
Others	0	0.00	0.00
Final Exams	1	27.00	27.00
Total Work Load			165.00
Total work load/ 30 hr			5.50
ECTS Credit of the Course			4.00

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	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	5	0	0	0	0	0	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			