COMPUTER NETWORKS

1	Course Title:	COMPUTER NETWORKS
2	Course Code:	BMB3007
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	5
7	ECTS Credits Allocated:	6.00
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. PINAR KIRCI
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Tel: 02242942796 ctogay@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of this course is to provide students with ability to explain data ommunications, concepts of computer networks, history of networks, physical communication media, communication protocols, classification of communication protocols, layered systems, network architecture and Open Systems Interconnection (OSI) referance model; the ability to recognize OSI layers and their functions, concepts of Internetworking, TCP/IP referance model, functions and protocols of TCP/IP referance model; the ability to resolve the structure of IP address system and to explain functioning of the other protocols in the TCP/IP suite.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

		1	To provide students with ability to define the computer networks and to classify then according to various criteria.
		2	To provide students with ability to explain the history of computer networks.
		3	To provide students with ability to explain the concepts of data communications.
		4	To provide students with ability to classify of communications protocols.
		5	To provide students with ability to understand the layering of protocols and network architectures.
		6	To provide students with ability to explain the OSI referance model and functions of its layers.
		7	To provide students with ability to define internet concepts and TCP / IP referance model.
		8	To provide students with ability to explain the next generation of Internet Protocol.
		9	
		10	

21	Course Content:	

		Course Content:	
Week	**Theoretical**	**Practice**
1	Introduction to Computer Networks, Classification of Computer Networks	
2	Advantages of Computer Networks, History of Computer Networks, Structure of Computer Networks, Network Topologies	
3	Fundamentals of Data Communication, Analog and Digital Data Transmission, Data Encoding Techniques, Multiplexing, Asynchronous and Synchronous Transmission	
4	Unicast, Multicast, Broadcast concepts, Data Flow, Data Communication Media	
5	Classification of Communications Protocols	
6	Layered Systems and Network Archtitecture, Communication between layers, International Standards Organisations, Introduction to OSI Referance Model, Physical Layer, Data Link Layer, Frame Construction	
7	Error Detection, Flow Control, Error Correction, "Parity Check", "Block Sum Check", Cyclic Redundancy Check", Network Layer, Congestion Control	
8	Congestion Control Algortihms, Transport Layer, Session Layer, Presentation Layer, Application Layer	
9	Switching Methods in Computer Networks, Routing Algortihms in Computer Networks	
10	Internet Concepts, Internet Architecture and Protocols, TCP/IP Referance Model , IP Addresses, Special IP Addresses, Address Resolution, Address Resolution Protocol	
11	IP Datagrams and Datagram Forwarding, IP Datagram Format, IP Encapsulation, Fragmentation and Reassembly, The Future IP	
12	Internet Control Message Protocol (ICMP), Transmission Control Protocol (TCP)	
13	Introduction to Domain Name System (DNS), History of DNS, Structure of DNS	
14	The DNS Client-Server Model, The DNS Server Hierarchy, Resolving A Name, E-Mail Transfer Protocols, File Transfer Protocol	
22	Textbooks, References and/or Other Materials:	1) FOROUZAN, B.A.; Data Communications and Networking, Fourth Ed., McGraw Hill., ISBN: 978-0-07-296775-3, 2007 2) TANENBAUM, A.S.; Computer Networks, Fourth Edition, Prentice Hall, 2003, ISBN-0-13-038488-7 3) KUROSE,J.F. – ROSS,K.W. ; Computer Networking; Addison-Wesley Comp.; Second Edition; 2003; ISBN-0-201-97699-4 4) Comer, D. E., Computer Networks and Internets, 5th Edition, Prentice Hall, 2008, ISBN-0136066984
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00

Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade	40.00	
Contribution of Final Exam to Success Grade	60.00	
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	7.00	98.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	15.00	15.00
Others	0	0.00	0.00
Final Exams	1	18.00	18.00
Total Work Load			173.00
Total work load/ 30 hr			5.77
ECTS Credit of the Course			6.00

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	3	3	4	2	2	2	5	0	0	0	0	0	0	0	0	0
ÖK2	5	1	3	3	4	3	3	0	0	0	0	0	0	0	0	0
ÖK3	3	2	4	3	3	4	3	0	0	0	0	0	0	0	0	0
ÖK4	3	3	3	4	3	4	3	0	0	0	0	0	0	0	0	0
ÖK5	2	3	4	3	2	3	4	0	0	0	0	0	0	0	0	0
ÖK6	3	4	1	3	2	2	4	0	0	0	0	0	0	0	0	0
ÖK7	2	2	3	3	2	3	3	0	0	0	0	0	0	0	0	0
ÖK8	1	2	2	3	3	3	3	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