DATA COMMUNICATION

1	Course Title:	DATA COMMUNICATION
2	Course Code:	BMB4021
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	7
7	ECTS Credits Allocated:	5.00
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. Murtaza CİCİOĞLU
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	murtazacicioglu@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of this course is to provide basic information about digital and analog data communication concepts, methods and techniques.
19	Contribution of the Course to Professional Development:	Engineering Science: 80%; Engineering Design: 20%
20	Learning Outcomes:	

	1	Having knowledge about the basic level of data communications
	2	To understand the basic principles of data transmission from source to destination
	3	To establish the relationship between the concepts of data communications
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21	Course Content:

Course Content:

Week	Theoretical	Practice
1	An overview of data communication and networking. The protocols and protocol architectures	
2	Network Model (OSI, TCP / IP) Data transfer. Physical Layer: signals	
3	Transmission disturbances, channel capacity and delay, Transmission and environment	

4	Coding Techniques	
5	Analog-digital signals, Analog data to analog signals	
6	Flow control, error control and detection. HDLC. The data link control protocols	
7	Error correction techniques	
8	Asynchronous RS232 serial communication	
9	Multiplexing (FDM WDM, TDM)	
10	Spread spectrum (FHSS, DSSS)	
11	Data link layer: multiple access techniques (TDMA, FDMA, CDMA)	
12	IEEE 802.11 protocol architecture.	
13	IEEE 802.11 MAC layer	
14	DSL Technology	

22	Textbooks, References and/or Other Materials:	Lecture notes 1- Introduction to Data Communications & Networking, Behrouz Foruzan 2- Stallings, W., "Data and Computer Communications 8/e", Prentice Hall, 2006. Supplementary Books 1- Tanenbaum, A., "Computer Networks, 4/e", Prentice Hall, 2003. 2- Kurose, J.F., Ross, K.W., "Computer Networking: A Top-Down Approach Featuring the Internet", Addison Wesley, 2004. 3- Douglas E. Comer, D.E., "Internetworking with TCP/IP: Principles, Protocols, and Architecture 5/e", Prentice Hall, 2005. 4- Cisco Networking Academy 5- Huawei ICT Academy, Data Communication and Network
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		Classical problem-solving ability will be measured in midterm and final exams.

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	0	0.00	0.00
Homeworks	14	5.00	70.00
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	20.00	20.00
Total Work Load			147.00
Total work load/ 30 hr			4.90
ECTS Credit of the Course			5.00

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	5	4	4	4	3	3	3	3	3	0	0	0	0
ÖK2	4	3	3	3	4	4	4	2	2	3	3	3	0	0	0	0
ÖK3	4	3	4	4	4	4	4	3	2	3	3	3	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**