



# Bangladesh University of Business and Technology (BUBT)

## COURSE OUTLINE

**Program: B.Sc. in CSE**

**Course Code: CSE 209**

**Course Title: Data Communication**

**Semester: Spring 2020**

**Intake: 39(1)**

### Course Teachers:

Dr. Kamruddin Nur

Month	Week	Lecture	Topics	Chapter	Remarks
Oct 06-12, 2016	1	1	Overview of Data Communications and Networking: Data communication, Components of data communication	1	
		2	Direction of data flow Computer networks: Physical structures	1	
		3	Categories of networks, Internet, Protocols and Standards	1	
Oct 13-19, 2016	2	4	Network models: OSI reference model	2	
		5	OSI reference model continued	2	
		6	TCP/IP protocol suite, Addressing	2	<b>Quiz-1</b>
Oct 20-26, 2016	3	7	Chapter 2 Continued		
		8	Data Signals: Definitions, Problems with Bit Rate and Bit length	3	
		9	Transmission Impairment Nyquist Bit Rate and Shanon Capacity with problems	3	
Oct 27-Nov 02, 2016	4	10	Problems continued	3	
		11	Digital Transmission: Line coding schemes (Unipolar and polar) NRZ, RZ, Manchester, Differential Manchester	4	<b>Quiz-2</b>
		12	Block coding Pulse Amplitude Modulation (PAM) Transmission Modes	4	
		13	PAM continued		
Nov 03-13, 2016	5	14	Class test 1		<b>Class Test</b>
		15	Review Class		
		16	<b>Review class for Mid-term Examination</b>		
					<b>Class Test</b>
Nov 15-24, 2016	6	17			
		18	<b>Mid-term Examination</b>		
		19			
Nov 26-Dec 02, 2016	7	20	Analog Transmission: ASK, FSK, PSK, and QAM with problems and figures	5	
		21	AM, FM, and PM with problems and figures Multiplexing-FDM, TDM, CDMA	5,6	
		22	Transmission Media: Cable media: Twisted pair cable, coaxial cable, and fibre-optic cable	7	
Dec 03-09, 2016	8	23	Wireless media: radio wave, microwave, and infrared	7	

		24	Error detection and correction: Types of errors	10	
		25	Error detections: parity check, cyclic redundancy check	10	
Dec 10-16, 2016	9	26	Checksum	10	
		27	Error correction: retransmission, forward error correction-Hamming code	10	
		28	Multiple access protocol: Random access: CSMA	12	Quiz-3
Dec 17-23, 2016	10	29	CSMA/CD , CSMA/CA	12	
		30	Controlled access: Polling, reservation, and token passing	12	
		31	Multiple access protocol continued	12	
Dec 24-30, 2016	11	32	Ethernet: Traditional Ethernet, Fast Ethernet, Gigabit Ethernet	13	
		33	Connecting devices: Repeaters, Hubs, Bridges	15	
		34	Switches and Routers	15	Quiz-4
Dec 31-Jan 06, 2017	12	35	Data Link control: Flow control and error control	11	
		36	Stop-and-Wait ARQ, Go-back-N ARQ	11	
			Selective repeated ARQ	11	
Jan 07-13, 2017	13	37	HDLC	11	
		38	Class Test 2		Class Test
		39	Congestion control and QoS: Data traffic, Congestion Control	24	
Semester Final Examination (January 16-26, 2017)			Semester Final Examination		

Result Published: February 02, 2017

**Signature of the course teachers:**

**Textbook:** Data Communication and Networking (3<sup>rd</sup> / 4<sup>th</sup> Edition)  
- Behrouz A Forouzan