

No	Information of DC, IT 21012	
1	Unit name:	Data communications
2	Code:	IT-21012
3	Classification:	Engineering subject
4	Credit value:	3
5	Semester/ Year Offered:	1/II
6	Pre-requisite:	Computer basic course
7	Mode of delivery:	Lecture, practical
8	Assessment system and breakdown of marks:	Exam , Practical,Tutorial
	Exam	70%
	Practical	20%
	Tutorial	10%
9	Academic staff teaching unit:	Department of Information Technology Engineering
10	<p>Course outcome of unit:</p> <p>After completion of this semester, students will be able</p> <ul style="list-style-type: none"> <li>➤ To apply the categories of cable and network topologies</li> <li>➤ To apply the fundamentals of protocols and OSI Model</li> <li>➤ To discuss the basic concepts of data communication and networking</li> <li>➤ To calculate analog and digital signal composition</li> </ul>	
11	<p>Synopsis of unit:</p> <p>The course covers the fundamental data communication and networking. The course introduces communication system, network topologies and network model to very simple examples and working up to full-fledged review questions and practice set. There are questions and exercises at the end of the most chapters to enhance the book's usefulness in the classroom.</p>	
12	<p>Topic:</p> <p>1 Introduction</p> <p>1.1 Data Communications</p> <p>1.2 Networks</p> <p>1.3 The Internet</p>	

	1.4	Protocols and Standards
	1.5	Recommended Reading
	1.6	Key Terms
	1.7	Summary
	1.8	Practice Set
2		Network Models
	2.1	Layered Tasks
	2.2	OSI Model
	2.3	Layers in the OSI Model
	2.4	TCP/IP Protocol Suite
	2.5	Addressing
	2.6	Recommended Reading
	2.7	Key Terms
	2.8	Summary
	2.9	Practice Set
3		Data and Signals
	3.1	Analog and Digital
	3.2	Periodic Analog Signals
	3.3	Digital Signals
	3.4	Transmission Impairment
	3.5	Data Rate Limits
	3.6	Performance
	3.8	Key Terms
	3.9	Summary
	3.10	Practice Set
		Exercises
4		Digital Transmission
	4.1	Digital-to-Digital Conversion
	4.2	Analog-to-Digital Conversion
	4.3	Transmission Modes
	4.4	Recommended Reading
	4.5	Key Terms
	4.6	Summary

	<p style="text-align: center;">4.7 Practice Set Exercises</p> <p style="text-align: center;">5 Analog Transmission</p> <p style="text-align: center;">5.1 Digital-to-Analog Conversion</p> <p style="text-align: center;">5.2 Analog-to-Analog Conversion</p> <p style="text-align: center;">5.3 Recommended Reading</p> <p style="text-align: center;">5.4 Key Terms</p> <p style="text-align: center;">5.5 Summary</p> <p style="text-align: center;">5.6 Practice Set Exercises</p>
13	<p>Main references:</p> <p><b>Textbook</b></p> <p style="text-align: center;">Data Communications and Networking, 5<sup>th</sup> Edition Behrouz A. Forouzan</p>
14	<p>Additional references:</p> <p style="text-align: center;">Data Communications and Networking, 4<sup>th</sup> Edition Behrouz A. Forouzan</p> <p>Data and Computer Communication, 6<sup>th</sup> edition William Stalling</p>