

# GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

Department of Electronics and Communication Engineering

Academic Year: **2016-17**

Semester: **EVEN**

## COURSE PLAN

Semester: **VII**

Subject Code& Name: **10EC834 & HIGH PERFORMANCE COMPUTER NETWORKS**

Name of Subject Teacher: **Pavan V S**

Name of Subject Expert (Reviewer): **Kavitha M V**

For the Period: From: 6-02-17 to 2-06-17

Details of Book to be referred:

Text Books	<b>High Performance Communication Networks</b> , Warland and Varaiya: Morgan Kauffman/ Elsevier 2 <sup>nd</sup> Edition 2000.
Reference Books	<b>1. High-Speed Networks and Internet: Performance and Quality of service</b> , William Stallings, Pearson Edu., 2001. <b>2. Building High-Speed Networks</b> , Tere Parnell, TMGH, 2000.

Lecture NO	Topic Planned	Practical Applications & Brief objectives	Book referred with Pg No.	Planned Date	Executed Date	Deviation Reasons thereof	How Made Good / Reciprocate arrangement	Remarks by HOD
1.	<b>UNIT-1 Introduction</b>	<b>Objective:</b> Understand evolution of communication and networking, also to enhance future networks and		6-2-17				
2.	History of Communication Networks		5	7-2-17				
3.	Computer Networks		10	8-2-17				

4.	Ethernet	<p>principles of operation</p> <p><b>Application:</b> Internet LAN Ethernet Fiber networks</p> <p><b>OUTCOME:</b> Able to identify the existing communication networks around.</p>	12	9-2-17				
5.	FDDI		14	10-2-17				
6.	Cable television network		17	13-2-17				
7.	Networking principles		21	14-2-17				
8.	Future networks		27	15-2-17				
9.	<b>UNIT -2 NETWORK SERVICES AND LAYERED ARCHITECTURE - Application</b>	<p><b>Objective:</b> To understand the various services provided by the network and organization of different layers in the architecture.</p> <p><b>Application:</b> WWW Video streaming Network games Client server access</p> <p><b>OUTCOME:</b> Will be able to analyze the various parameters of networking.</p>	41	16-2-17				
10.	Networked games		43	20-2-17				
11.	Traffic characterization and QoS		44	21-2-17				
12.	Networks services		47	21-2-17				
13.	High performance networks		49	22-2-17				
14.	Network elements		51	23-2-17				
15.	Network elements and service characteristics		53	27-2-17				
16.	Layered architecture		80	28-2-17				
17.	Open data network model		86	28-2-17				
18.	Implementation of layers		87	1-3-17				

19.	Network architectures	<p><b>Objective:</b> To understand how data is communicated or transferred over internet</p> <p><b>Application:</b> All applications of Internet</p> <p><b>OUTCOME:</b> Will be able to understand algorithm and technologies involved in internet and associated networks.</p>	89	2-3-17				
20.	Network bottlenecks		91	6-3-17				
21.	Revision of Unit 1 and 2			7-3-17				
22.	<b>UNIT 3 INTERNET AND TCP/IP NETWORKS – Multicast IP</b>		173	7-3-17				
23.	TCP and UDP		178	8-3-17				
24.	FTP		181	13-3-17				
25.	Internet success and limitation		183	14-3-17				
26.	Performance of TCP/IP networks		186	14-3-17				
27.	Suggested improvements for TCP		188	15-3-17				
28.	Queuing algorithm		190	16-3-17				
29.	Label switching		191	20-3-17				
30.	Performance of circuit switched networks - Revision	208	21-3-17					
31.	TEST on UNIT 2 & 3		21-3-17					

32.	<b>UNIT – 4 CIRCUIT SWITCHED NETWORKS - SONET</b>	<b>Objective:</b> To understand the different switching types which is very important in networking  <b>Application:</b> Fiber communication Internet Cable TV  <b>OUTCOME:</b> Will be able to choose the switches suitable for network communication	211	22-3-17				
33.	SONET de multiplexing		215	23-3-17				
34.	DWDM		223	27-3-17				
35.	Fiber to home		225	28-3-17				
36.	PON frame structure		226	28-3-17				
37.	Digital subscriber line		232	30-3-17				
38.	Intelligent networks		241	3-4-17				
39.	CATV		244	4-4-17				
40.	<b>UNIT 8 OPTICAL NETWORKS – WDM systems</b>		556	4-4-17				
41.	Optical LAN's		561	5-4-17				
42.	Optical and networks	565	6-4-17					
43.	Optical cross connects	557	10-4-17					

44.	Ring networks	MAN Fiber internet and Cable TV	569	11-4-17				
45.	Optical networks	<b>OUTCOME:</b> will be able to choose optical networks for high speed networks	571	11-4-17				
46.	<b>UNIT 7 WIRELESS NETWORKS</b> – Link level design	<b>Objective:</b> To understand different problems and network design and also for future wireless networks  <b>Application:</b> Bluetooth Wi-Fi Cellular networks  <b>OUTCOME:</b> Will be able to select the wireless network for channel access for various network designs	324	12-4-17				
47.	Flat-Fading Countermeasures		326	13-4-17				
48.	Channel Access		331	24-4-17				
49.	Network Design		337	25-4-17				
50.	Wireless Networks Today		343	25-4-17				
51.	Wide Area Wireless Data Service		351	26-4-17				
52.	Future Systems And Standards		354	27-4-17				
53.	HomeRF And BLUETOOTH		358	2-5-17				
54.	TEST On UNIT 8 And 6			2-5-17				
55.	<b>UNIT 5 ATM</b> Main features of ATM		258	3-5-17				
56.	Statistical multiplexing	<b>Objective:</b> This discusses	266	4-5-17				

57.	Addressing signaling and routing	logical, routing, Addressing, addressing, protocols and about ATM  <b>Application:</b> LAN Internet protocol  <b>OUTCOME:</b> Will be able to select the ATM over other available transfer modes in network designs	269	8-5-17				
58.	PNNI Routing		272	9-5-17				
59.	ATM header structure		277	9-5-17				
60.	ATM adaptation layer		282	10-5-17				
61.	Type ¾, Internetworking with ATM		284	11-5-17				
62.	<b>UNIT 7</b> Control of networks, Objectives and methods of control		364	18-5-17				
63.	Circuit switched networks		372	22-5-17				
64.	Datagram Networks Network economics		378	23-5-17				
65.	Derived demand for network services, ISPs		484	24-5-17				
66.	subscriber demand model, Empirical model		491	25-5-17				
67.	Revision and QP solving			29-5-17				
68.	Revision and QP solving			30-5-17				
69.	Revision and QP solving			30-5-17				
70.	Revision and QP solving		31-5-17					
71.	Revision and QP solving		1-6-17					

Prepared By: \_\_\_\_\_  
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