

INSTITUTE	DIPLOMA STUDIES
PROGRAM	DIPLOMA ENGINEERING (COMPUTER ENGINEERING)
SEMESTER	2
COURSE TITLE	COMPUTER NETWORK SKILL
COURSE CODE	09CE2105
COURSE CREDITS	2

Objective:

- 1 This subject will help to understand fundamental concepts of computer networking. Make students knowledgeable about basic taxonomy and terminology of the computer networking area. Offers advanced networking concepts, preparing the student for entry Advanced courses in computer networking

Course Outcomes: After completion of this course, student will be able to:

- 1 Apply the fundamental concepts of data communication in practical networking scenarios
- 2 Identify and select appropriate types of networking cables for specific communication needs
- 3 Classify networks based on range, topology, and architecture to suit different use cases
- 4 Demonstrate the use of various networking devices in the setup and functioning of a network

Pre-requisite of course:N/A

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	4	0	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	Introduction Overview of computer network, usage of computer network, line configuration- point-to-point, multi point, types of server, Data flow-simplex, Half duplex, Full Duplex	7
2	Cabling Introduction to network cabling, Unshielded Twisted Pair (UTP) Cable, Twisted Pair (STP) Cable, Coaxial Cable, Fiber Optic Cable	5
3	Types of network & Topology Importance of computer network, Local Area Network (LAN), virtual LAN (VLAN), Controller Area Network (CAN), Metropolitan Area Network (MAN), Wide Area Network(WAN), Internet and Intranet, Extranet, , Topology - Star, Bus, Mess, Ring, Hybrid,, Pros and Cons of each topology	9

Contents : Unit	Topics	Contact Hours
4	Transmission media Types of transmission media, Guided transmission media-twisted pair, coaxial cable, optical fiber, magnetic media, Unguided transmission media-light transmission, microwave transmission, radio transmission, infrared transmission	3
5	Network devices Working of Networking Components – Hubs , Bridges, Switches (Manageable and Non-Manageable), Switching and Forwarding Routers, Gateways, Access Point, Modem, Wi-fi-Router	4
Total Hours		28

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Practical-1 Study different types of network and generate report.	1
2	Practical-2 Prepare a summary report about data communication using examples.	1
3	Practical-3 Study Different Network IP Classes.	1
4	Practical-4 Study basic network commands and Network configuration commands.	1
5	Practical-5 Study of different types of network cable and practically implement the crossed-wired cable and straight through cable using clamping tool.	2
6	Practical-6 Configure any two network topology in Cisco packet tracer software.	1
7	Practical-7 Study different network topologies and make summary report about it.	2
8	Practical-8 Implement WAN in Cisco Packet tracer.	1
9	Practical-9 Learn the concept of LAN, VLAN, WAN, CAN, MAN.	2
10	Practical-10 Setup Wireless Network.	2
11	Practical-11 Setup LAN Connection in Cisco packet tracer software.	1
12	Practical-12 Check performance of network using ping, trace route commands.	1

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
13	Practical-13 Study different types of transmission mode.	1
14	Practical-14 Simulate HTTP, DNS and Email on terminal n Cisco packet tracer software.	1
15	Practical-15 Prepare report on e-mail service: contact list, group list, sorting, searching, spam, inbox, sent mail, draft.	2
16	Practical-16 Study of networking devices.	2
17	Practical-17 Setup Hub, switch, Router in Cisco packet tracer software.	2
18	Practical-18 Install and Configure Proxy Server in Cisco Packet Tracer.	2
19	Practical-19 Setup DHCP server in Cisco packet tracer software	2
Total Hours		28

Textbook :

- 1 Data Communication and networking, Data Communication and networking, Tata McGraw Hill, 2013

References:

- 1 Computer Networks, Computer Networks, Andrew S. Tanenbaum, Pearson Publications, 2010
- 2 Computer Communication Networks, Computer Communication Networks, Achyut S. Godbole, Tata McGraw Hill, 2011

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
35.00	35.00	30.00	0.00	0.00	0.00

Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

Instructional Method:

- 2 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
- 3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory
- 4 Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory