INSTITUTE	DIPLOMA STUDIES
PROGRAM	DIPLOMA ENGINEERING (COMPUTER ENGINEERING)
SEMESTER	2
COURSE TITLE	COMPUTER NETWORK SKILLS
COURSE CODE	09CE1105
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 understand the concept of data communication
2 Integrate PC into LAN.
3 Know different network classification based on different category
4 Acquire knowledge of different network devices.

Pre-requisite of course:NA

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	**Unit-1** Overview of computer network, usage of computer network, line configuration- point-to-point, multi point, types of server	5
2	**Unit-2** Data flow-simplex, half duplex, full duplex, topology-star, bus, mess, ring, hybrid, pros and cons of each topology	5
3	**Unit-3** Introduction to network cabling, Unshielded Twisted Pair (UTP) Cable, Shielded Twisted Pair (STP) Cable, Coaxial Cable, Fiber Optic Cable	4

Contents : Unit	Topics	Contact Hours
4	**Unit-4** 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	6
5	**Unit-5** 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
6	**Unit-6** Working of Networking Components – Hubs , Bridges, Switches (Manageable and Non-Manageable), Switching and Forwarding Routers, Gateways, Access Point, Modem, Wi-fi-Router.	5
Total Hours		**28**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practical List** Study different types of network and generate report., Prepare a summary report about data communication using examples., Study different network topologies and make summary report about it., Configure any two network topology in Cisco packet tracer software., Study of different types of network cable and practically implement the crossed-wired cable and straight through cable using clamping tool., Prepare and Test Straight UTP Cable, Prepare and Test Cross UTP cable., Study Different Network IP classes., Learn the concept of LAN, VLAN, WAN, CAN, MAN., Study basic network commands and Network configuration commands., Setup LAN Connection in Cisco packet tracer software, Setup Wireless Network., Study of networking devices., Setup Hub in Cisco packet tracer software., Setup switch in Cisco packet Tracer., Setup router in Cisco packet tracer., Setup access point., Implement WAN in Cisco Packet tracer., Check performance of network using ping, trace route commands , Study different types of transmission mode., Simulate HTTP, DNS and Email on terminal n Cisco packet tracer software., Prepare report on e-mail service: contact list, group list, sorting, searching, spam, inbox, sent mail, draft , Install and Configure Proxy Server in Cisco Packet Tracer., Setup DHCP server in Cisco packet tracer software.	28
Total Hours		**28**

References:

1   Data Communication and networking, Data Communication and networking, Behrouz A. Forouzen, Tata McGraw Hill, fifth edition, -

References:

2 Computer Networks, Computer Networks, Andrew S. Tanenbaum, Pearson Publications, fifth edition, -

3 Computer Communication Networks, Computer Communication Networks, Achyut S. Godbole, Tata McGraw Hill., -

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 and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking**
35.00	35.00	30.00	0.00	0.00	0.00

Instructional Method:

1 a. 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.

2 b. The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

3 c. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

4 d. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory

Supplementary Resources:

1 NA