Course Code: EITS - 113
Course Title: Computer Networking- II

Number of Credits: 03	**Total Hours: 42**	**Total Marks: 75**

Prerequisites for the course

Students should know the concepts taught in Computer Networking- I

Objectives of Course

1. To introduce the basics of computer networking– concepts, theory
2. To Identify different network components and tools
3. To know techniques of crimping and punching
4. To understand basics of OSI and TCP/IP Model
5. To understand the basic home appliances

Course Content

Unit I	**Components of the Computer Network**	**4 Hours**

Identify various Network tools: Wire crimper, Wire Map Testers, Multifunction Cable Tester, LAN Tester, Tone Generator etc. Identify various Network devices: Switch (Normal and Managed), Router(Normal and wireless), Rack, Patch Panel, I/o box, Access Point etc. Understand the Layout of network on your lab and campus.

Unit II	**Networking Cables**	**10 Hours**

Network cable Types and specifications. UTP Cables : Electrical and Mechanical Properties, Construction, colour codes Applications, Patch Cords

Unit III	**Crimping & Punching**	**8 Hours**

Communication Media and Connectors – Unshielded twisted-pair (UTP), shielded twisted-pair (STP), Fibre Optic and coaxial cable: RJ-45, RJ-11, BNC. Understanding colour codes of CAT5 cable. 568A and 568B convention. Network Cabling : Crimping and punching

Unit V	**Configuration of Data communication equipment**	**10 Hours**

Network Components: Modems, Firewall, Hubs, Bridges, Routers, Gateways, Repeaters, Transceivers, Switches, Access point, etc. Types, functions, advantages and applications of Network Component. Layer 2 manage switch configuration and use it on network, Latest configurations. Understand the use of Network simulation software and the process of use it.

Unit VI	**Basic Home Network Hardware Components, Devices and Services**	**10 Hours**

Modem, dongle, Broadband, Home Switch, Home Router, Home Router with Landline, Repeater, Firewall and NAT Router, Combination of various devices, WAP, PoE Injector

Pedagogy

Lectures/Tutorial/Assignments

Course Outcome

On completion of the course, students will be able to:

1. Identify different network components and tools
2. Understand techniques of crimping and punching
3. Understand basics of OSI and TCP/IP Model
4. Know the basic Home Network appliances

References/Readings

1. Bell, C. G., Habermann, A. N., McCredie, J., Rutledge, R., & Wulf, W. (1970). Computer networks. In *Computer* (Vol. 3, Issue 5).
2. TANENBAUM, A. S., & WETHERALL, D. J. (2005). Computer networks. In *Computers, Software Engineering, and Digital Devices*. https://doi.org/10.4337/9781784711603.00023
3. D-Link Certified, DCS Switching Training Guide
4. D-Link Certified, DCS Switching Lab Manual
5. Cisco Certified Network Associate Training Guide
6. James F. Kurose, Keith W. Ross, Computer Networking A Top down Approach, 7th Edition, Pearson, 2001.
7. Data communications and Networking, Behrouz A Forouzan, Tata Mc Graw-Hill 5th edition, 2013
8. Larry Peterson and Bruce S Davis "Computer Networks :A System Approach" 5 thEdition , Elsevier -2014
9. Douglas E Comer, **"** Internetworking with TCP/IP, Principles, Protocols and Architecture" 6th Edition, PHI - 2014
10. An Engineering Approach to Computer Networks-S. Keshav, 2nd Edition, Pearson Education
11. Data Communications and Networking – Behrouz A. Forouzan. Third Edition TMH.