



# KARNATAKA STATE OPEN UNIVERSITY

Mukthagangothri, Mysore – 570 006, India

## Skill Development Programme

### Syllabus – Undergraduate Programmes

#### BASICS OF NETWORKING

#### Objectives

- This course introduces to install, configure, and troubleshoot a computer network.
- This course first introduces the fundamental building blocks that form a modern network, such as protocols, topologies, hardware, and network operating systems.
- It then provides in-depth coverage of the most important concepts in contemporary networking, such as TCP/IP, Ethernet, wireless transmission, and security.

#### Level I – First Year

**Introduction about Computer:** Basics of computer, Organization of computer, Software and hardware, Input/output devices. **Introduction to Networking Concepts:** Network topologies and types of networks LAN, WAN, MAN, PAN, CAN. **Networking Model :**The OSI model ,TCP/ IP Model, Network adapters, Introducing protocols, Cabling and troubleshooting.

#### Level II – Second Year

Introduction to various networking devices: Routers, Switches, Modems, Hubs etc. Wired and Wireless technology. Inside the PC: Opening the PC and identification, Study of different blocks, Assembling and disassembling. Network basic and configuration: Setting IP addresses, Sharing files and folders, Network troubleshooting, PING test, ipconfig etc.

#### Level III – Third Year

Introduction to servers and network security: Types of servers: Files servers, Email Servers, Proxy servers etc. Basics of Internet and Intranet: Types of Internet connections: Dialup, Broadband, Leased Line, Wi-Fi, Wi-Max, 2G, 3G, 4G, WWW, E-mails, Search Engines, Social Networking, Cloud application, Audio-video Conferencing, Voice over Internet Protocol (VOIP). Recovery and backup Essential security measures.

#### List of Practicals

1. To connect computers in different ways in a LAN ( Topologies-star, ring, bus, tree)
2. To connect and understand different network devices used in LAN- Hubs, Switches, Routers
3. To study the constructional details of transmission media- co-axial cables, twisted pair cables, optical fibre cable.
4. To create network cable using RJ 45 connectors.
5. Connections of two hubs by creating cross over connections.
6. To install a network interface card ( NIC)
7. To install TC/IP protocol and configure its advance property.
8. To locate MAC address of computer.
9. To Install network printer.

**Reference Book**

- (1) Networking Complete BPB Publication
- (2) Computer Networking Andrew S. Tanenbawan By PHI
- (3) Nader Mir F., Computer and Communication Networks, Pearson Education, 2007.