

Suggested Teaching Guidelines for

Fundamental of Computer Network and Management – Sept, 2023

Duration: 24 class room hours + 16 Lab hours

Objective: To introduce Fundamental of Computer Network and Management.

Prerequisites: Knowledge of Computer Networks

Evaluation method: CCEE Theory exam– 40% weightage

Lab exam – 40% weightage

Internal exam – 20% weightage

List of Books / Other training material

Text Book:

1. Computer Networks: Principles, Technologies And Protocols For Network Design by Natalia Olifer/Wiley

Reference:

2. Networking Fundamentals: Wide, Local and Personal Area Communications by Kaveh Pahlavan
3. Computer Networks by by Andrew S. Tanenbaum
4. Computer Networks - A System Approach by by Peterson

Note: Each session mentioned is for theory and of 2 hours duration. Lab assignments are indicatives, faculty need to assign more assignments for better practice.

Session 1 & 2

Lecture:

- Introduction to communication system
- issues in Computer Networking

Session 3 & 4

Lecture:

- OSI Layers
- TCP/IP Models

Assignment:

- What is IP?
- What is TCP/IP Model?
- Write a difference between TCP & UDP.

Session 5

Lecture:

- Networking Protocols

Session 6 & 7

Lecture:

- IP Addressing and Routing

Session 8 & 9

Lecture:

- Network Devices: Hub, switch and Router

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Session 10

Lecture:

- Interconnect Networks: Types of Interconnect networks, Gigabit Ethernet, Omni Path Architecture

Session 11 & 12

Lecture:

- InfiniBand, types of protocol supported, Communication subnet, Interconnect networks subsystem: HCA, FC ports and other supported accessories, Network monitoring

Assignments –Lab:

- Gigabit Ethernet configuration
- InfiniBand installation and configuration
- IP Schema and sub netting
- Router configuration
- Network Troubleshooting