

HAILEY COLLEGE OF COMMERCE

UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Computer Networks

Course Code: BEC-205

Credit Hours: 03

Program: BS E-Commerce

Semester: 03

1.0 Introduction of the Course (100-150 words)

This introductory course on Networks aims to provide general knowledge of computer networking in a semi technical manner. Development of Computer network is pervasive which include home, office and small business. It has become every essential for the business manager to have basics of computer networking to keep their organization on progress track. Computer Network is playing the most important role in the growth of organization. Its focus is on the basic standards, Communication Media, Protocols, Internetworking, Internet, Network management and Network Security.

2.0 Pre-Requisites Course (s) or Other Requirements/Skills:

BEC-114 Introduction to Information Technology

3.0 Course Learning Outcomes

After the completion of this course, it is expected that students who will involve themselves in the knowledge baseworking of the course will be capable to

1. Have a unified view of data communications and computer networks.
2. Understand the layered architecture approach with reference to OSI Model.
3. Be aware of the characteristics of different transmission media.
4. To distinguish between different network devices.
5. Have the basic concepts of circuit and packet switched networks.
6. Recognize Assign and Performing IP addressing.

5.0 Course Contents:

Unit-I: Network and Network Applications

1.1 Network Uses

1.2 Network Benefits

1.3 Client and Servers

1.4 Network Disadvantages

Unit-II: Some Useful Terms

2.1 Serial vs. Parallel Communication

2.2 Circuit Switching vs. Packet Switching

2.3 Frequency Modulation vs. Amplitude Modulation

2.4 Simplex, Half Duplex and Full Duplex Comm.

2.5 Synchronous vs. Asynchronous Data Transfer

Unit-III: Topologies Bus Topology Star Topology

3.1 Ring Topology Mesh Topology

3.2 Hybridized Topologies

Unit-IV: Medium

4.1 Guided Media

4.2 UTP Cable and STP Cable

4.3 Fiber Optic Cable

4.4 Unguided Media

4.3 Microwave Communication

4.4 Radio waves Communication

4.5 Infrared and Bluetooth

Unit-V: Network Models

5.1 OSI Standards

5.2 7-Layers and Description TCP/IP Suit

Unit-VI: LAN Signaling & Access

6.1 Signaling

6.2 Baseband & Broadband Access

6.3 CSMA/CD CSMA/CA

6.4 Token Passing, Ring, Bus

Unit-VII: Brief Introduction to LAN Standards

7.1 IEEE Ethernet Standard

7.2 IEEE Wireless Standard

Unit-VIII: Inter Connecting Devices

8.1 Repeaters, Bridges, Routers and Gateways

8.2 Virtual LANs

Unit-IX: Interoperability - Protocol Suits, TCP/IP

9.1 Windows/NT

9.2 Novell Netware

Unit-X: Network Addressing

10.1 Internet Address

10.2 Classful Address

10.3 Classless Address

Unit-XI: Brief Intro to Some Useful Protocols

11.1 SMTP, ,FTP, HTTP, TCP, UDP, IP, ARP, RARP, ICMP, IPv6

Unit-XII: Network Security and Management

12.1 Private Key Cryptography

12.2 Public Key Cryptography

12.3 Digital Signatures

12.4 Key Management

12.5 IP Level Security IPSec Transport Layer Security TLS Application Layer Security:

PGP, Firewalls and Virtual Private Networks

6.0 Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

7.0 Assignments- Types and Number with calendar

8.0 Assessment and Examinations: As per University Rules

9.0 Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Data Communications and Networking by Behrouz A Forouzan Bold 3rd Edition
ISBN: 9780071232418
2. Computer Networks by Andrew S Tanenbaum 4th Edition, ISBN 978-0130661029
3. Local Area Networks by Peter Hodson ISBN: 9780826458667