University of Tabuk
College of Computer and Information Technology
Department of Computer Science

Syllabus

Course Title: Computer Networks

Course Code: CEN-330

Credit Hours: 3-2-0-4

Text books:

Computer Communications and Networking Technologies, M. A. Gallo and W. M. Hancock, Brooks/Cole (Thomson Learning), ISBN: 0-534-37780-7
Cisco Networking Academy Program CCNA 1 and 2 Lab Companion, Revised 3rd Edition, Cisco Systems Inc., Cisco Press, ISBN: 1-58713-149-8
Data Communications and Networking, 4th Edition, Behrouz A. Forouzan, McGraw-Hill Higher Education, ISBN: 0072967757

References :

- ***Computer Networks***, A. S. Tanenbaum, Prentice Hall, ISBN: 0-13-066102-3
- ***Communication Networks,*** A. Leon-Garcia and I. Widjaja, McGraw Hill, ISBN: 0-07-246352-X
- ***Understanding Communications and Networks***, W. A Shay, Brooks/Cole (Thomson), ISBN: 0-534-38317-3
- ***Data and Computer Communications,*** W Stallings, Prentice Hall, ISBN: 0-02-415425-3
- ***Introduction to Networking***, WestNet Learning, ISBN: 1-58676-114-5

Pre-Requisites: CEN-312

Course Description:

This is a fundamental course designed to introduce current networking technologies, models and concepts in network communications. The course focuses on network terminology, protocols, and local area networks (LANs), wide-area networks (WANs), and Open System Interconnection (OSI) models and Ethernet standards. Up to date technologies on Wireless, ADSL, cable modems technologies are surveyed and its features explained including switches, hubs and network cabling is introduced with Internet Protocol (IP) addressing, and network standards .

Learning Objectives:

Upon successful completion, students will be able to :

- Define and explain the different types and characteristics of a Computer Network
- Compare and contrast the OSI and TCP/IP models
- Explain the OSI and the Internet layering models
- Identify the various media used in network topologies

- Create network addressing schemes using subnetting and all classes of IP addresses
- Explain Ethernet fundamentals and technologies (including Fast Ethernet and Gigabit Ethernet)

Method of Teaching:

- 15 weeks (3 hrs per week) of lectures
- 15 weeks (2 hrs per week) of lab

Assessment / Evaluation:

Midterm Examination	25%
Lab Work	35%
Final Written Examination	40%
Total	100%

Course Outline:

Week	Topics/Contents
1	Overview of Computer Communications and Networking
2	Networking Basics
3	Reference Models
4	Networking Concepts and Terminology
5	Digital Communication Concepts
6	Physical, Data Link, and Network Layer Concepts
7	Data Link Layer Concepts and IEEE LAN Standards
8	Network Hardware Components
9	Internetworking and Network Layer Concepts and Components
10	The Internet and TCP/IP
11, 12	LAN Networking Technologies
13	ISDN, Frame Relay, SMDS, ATM Basics
14	Network Convergence
15	Revision