

**CENTER FOR APPLIED INFORMATION TECHNOLOGY
TOWSON UNIVERSITY**

AIT 622: Networks Architecture and Protocols

Credit Hours: 3

Prerequisite: AIT 620

Course Description: The topic in this course include a review of fundamentals of network technology, internet protocols, multicasting, subnet and supernet addressing, routing algorithms, client-server, socket interface, bootstrap and auto configuration, file transfer, e-mail, internet security.

Learning Objectives:

1. Understand the and explain various network architectures
2. Discuss the protocol layering principle
3. Describe the functionality of IP and TCP, as well as protocols such as ARP, RARP, ICMP, UDP, BOOTP, DHCP, and others
4. Understand the differences between IPv4 and IPv6
5. Explain classfull and classless internet addressing schemes
6. Create subnet addresses for given network scenarios
7. Describe unicast, multicast, and broadcast routing methodologies
8. Recognize how TCP/IP is used to create internet applications such as TELNET, Rlogin, FTP, TFTP, and electronic mail (SMTP, POP, IMAP)
9. Analyze packets captured from the internet to determine their contents and purpose

Suggested Textbook:

1. Comer, D., *Internetworking with TCP/IP*, Fifth edition, Prentice-Hall

Other References/Journals:

1. Peterson, L. L, Davie, B.S., *Computer Networks: A Systems Approach*, Third Edition, Morgan Kaufmann
2. Kurose, J.F., Ross, K.W., *Computer Networking, A top-down Approach Featuring Internet*, Third edition, Addison-Wesley