

CSI 2470: Introduction to Computer Networks

Credits Hours: 4 credits, 3.57 contact hours/week.

Instructor: Paul Bonamy, Ph.D.

Text book: Computer Networking: A Top Down Approach, 6th Edition by James F. Kurose and Keith W. Ross ISBN-10: 0-13-285620-4, ISBN-13: 978-0-13-285620-1

Specific course information

An introduction to fundamental concepts for design and analyses of computer networks. Topics covered include the physical layer, network protocols, Local Area Networks, Internet, wireless and mobile networks, network security, and socket programming.

Prerequisites: CSI 2300

Required course for CS and IT major

Course Objectives: Upon successful completion of this course, students should be able to

- Describe network protocol stack such as application, transport, network, link, and physical layers [ABET CS: (a), IT (a, m)]
- Describe local area networks, and wireless and mobile networks [ABET CS: (a), IT (i)]
- Conduct experiments by using network protocol analyzer such as Wireshark [ABET CS: (i), IT (i)]
- Explain major design and performance issues in computer network [ABET CS: (a), IT (m)]
- Describe basic concepts of network security [ABET CS: (a), IT (j)]

List of Topics:

- Principles of computer networking
- Computer networks structure
- Computer networks components
- Computer networks layered architectures
- Application Layer (e.g. Web and HTTP, FTP, Email, DNS).
- Transport Layer (UDP, TCP).
- Network Layer (IP).
- Link Layer and Local Area Networks.
- Computer networks management and sensor networks