Syllabus

CSC 260 Networking Technologies

General Information

Date
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Department
Computing Sciences

Course Prefix
CSC

Course Number
260

Course Title
Networking Technologies

Course Information

Credit Hours
3

Lecture Contact Hours
3

Lab Contact Hours
0

Other Contact Hours
0

Catalog Description
This course is the prerequisite and absolute foundation for all upper level networking and cybersecurity courses, and features extensive hands-on activities. Topics include the OSI Model, MAC addresses, IP addresses, local communication vs. remote communication, packet sniffing, the TCP/IP protocol suite including ARP, ICMP, TCP, UDP, DNS, DHCP, IGMP, IMAP, SMTP, SSH and more, subnetting, switches, routers, cables virtualization, Ethernet, wireless, cybersecurity, and more. Various tools and utilities will be used throughout the course.

Prerequisites
None

Co-requisites
CSC 103

Grading Scheme
Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category
None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

None

Course Learning Outcomes

Course Learning Outcomes

1. Explain network terminology and concepts
2. Configure client systems
3. Implement solutions to network security vulnerabilities

Program Affiliation

This course is required as a core program course in the following program

AAS Networking and Cybersecurity

Outline of Topics Covered

1. Introduction to Networking
2. The OSI Model of network communications
3. Format and usage of MAC Addresses
4. Format and usage of IP Addresses
5. Local communication vs. remote communication from a host’s perspective
6. Packet sniffing with Wireshark
7. The TCP/IP suite of protocols, including:
    a. ARP
    b. ICMP
    c. TCP
    d. UDP
    e. DNS
    f. DHCP
    g. IGMP
    h. IMAP
    a. SMTP
    j. SSH
8. Subnetting
9. How switches work and make decisions

10. How routers work and make decisions
11. Usage of straight-through and crossover cables
12. Creating and using VMs
13. Ethernet network communications
14. Wireless network communications
15. Cybersecurity issues, vulnerabilities, exploits, and mitigations for networks