

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: ITN 262

Credits: 4

Course Title: Network Communication, Security, and Authentication

Course Description: Explores in-depth various communication protocols with a concentration on TCP/IP. Discusses communication protocols from the point of view of the hacker in order to highlight protocol weaknesses. Includes Internet architecture, routing, addressing, topology, fragmentation, and protocol analysis. Includes the use of various utilities to explore TCP/IP. Lecture 4 hours per week.

General Course Purpose: This course covers advanced network security techniques.

Course Prerequisites and Co-requisites:

None

Student Learning Outcomes:

Upon completing the course, the student will be able to:

- a. Explain the Internet architecture;
- b. Explain risk analysis and network security policy;
- c. Explain disaster recovery planning;
- d. Explain network encryption and hashing;
- e. Explain Virtual Private Networks (VPN);
- f. Explain digital signatures and public key infrastructure; and
- g. Explain wireless security.

Major Topics to Be Included:

- a. The Internet, network architecture, and topology
- b. Major TCP/IP protocols
- c. Network security principles
- d. Passwords and password selection
- e. Encryption principles
- f. Public and private networks
- g. Virtual Private Networks
- h. Digital signature
- i. Wireless security

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