Voice over Internet Protocol   2023-2024 Catalog

[ARCHIVED CATALOG]

NETI 245 - Voice over Internet Protocol

PREREQUISITES: NETI 115 - Routing and Switching or NETI 119 - Networking II.
PROGRAM: Network Infrastructure
CREDIT HOURS MIN: 3
LECTURE HOURS MIN: 2
LAB HOURS MIN: 2
DATE OF LAST REVISION: Fall 2020

Introduces students to the basics of VoIP and how voice is transported over IP networks. Students will examine VoIP signaling protocols, and explore topics such as jitter, latency, packet loss, Quality of Service tools and security. Students will gain hands-on experience setting up, maintaining and troubleshooting VoIP as part of network convergence.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Determine the relevant critical business and technical needs in order to develop a IP Telephony design framework in a Small Office Home Office environment including the choice of signaling type and encoding methods.
2. Select the appropriate hardware and software components to support a proposed SOHO IP telephony design.
3. Determine which high availability issues would influence the selection of network hardware and software for an SOHO environment.
4. Design the appropriate dial plan to support SOHO design requirements.
5. Describe the similarities and differences between PSTN and VoIP including call transport, call signaling and bandwidth requirements.
6. Describe the technologies used in Voice over IP and how they differ from PSTN technologies.
7. Determine how PSTN connectivity issues influence SOHO hardware and software selection.
8. Understand and configure various connection types to the PSTN.
9. Explain the benefits of hierarchical and scalable dial and numbering plans.
10. Install, configure, and secure an IP Telephony solution in a SOHO environment.
11. Describe effective troubleshooting methods to resolve issues in SOHO IP Telephony Networks.
12. Design a QoS plan for a SOHO IP Telephony network.

COURSE CONTENT: Topical areas of study include -

- IP Phones
- Convergence
- Quality of Service (QoS)
- Public Switched Telephone Network (PSTN)
- Network Topologies
- Network Devices
- Signaling
- Encoding
- Dial plan

- Voice over Internet Protocol
- Call manager software

[Course Addendum - Syllabus (Click to expand)](#)

- Voice over Internet Protocol
- Call manager software