

# ITCC-2053 Course Syllabus

## 1. Name of Course:

Optimizing Converged Networks (ONT)

## 2. Number of Clock Hours: 72

## 3. Course Description:

Optimizing and providing effective QoS techniques in converged networks operating voice, wireless, and security applications.

## 4. Course Objectives

Describe Cisco VoIP implementations; describe QoS considerations; describe DiffServ QoS implementations; implement Auto QoS; implement WLAN security and management; explain the Cisco hierarchical network model as it pertains to an end-to-end enterprise network; describe specific requirements for implementing a VOIP network; describe the need to implement QoS and the methods for implementing QoS on a converged network using Cisco's routers and Catalyst Switches; explain the key IP QoS mechanisms used to implement the DiffServ QoS model; configure Auto QoS for Enterprise; and describe and configure wireless security and basic wireless management.

## Certification Alignment

The curriculum is aligned with ILSGs ONT course and the 642-845 exam.

## 5. Rationale:

Over 80% of worldwide internet traffic is controlled by CISCO routers and hubs, and those certified by CISCO in the computer networking field are in high demand.

## 6. Required Materials:

Students will be provided with official CISCO study materials.

## 7. Evaluation

Those who participate in class discussions, score 70% or higher on the final exam, and miss no more than three class meetings will be awarded 7.0 continuing education units.

### Prerequisites

Students must be able to:

- Explain the fundamentals of Ethernet including CSMA / CD, port speed, port duplex, and 10Mbps to 1Gbps

- Complete the initial configuration of a switch.
- Basic Spanning Tree Protocol configuration
- Configure a switch with VLANs.
- Create basic interswitch connections.
- Troubleshoot a VLAN and VTP to the CCNA level
- Complete the initial configuration of a router.
- Fundamental security knowledge including the presence of hackers, viruses and other security threats
- Fundamental knowledge of IP Addressing including the format of IPv4 addresses, the concept of subnetting, and VLSM and CIDR as well as static and default routing
- Basic NAT / PAT
- Standard and Extended Access Lists
- Use client utilities including Telnet, IPCONFIG, Trace Route, Ping, FTP, TFTP, and Hyperterminal
- Basic IOS familiarity, including accessing the CLI on a Cisco device and specifically implementing the debug and show commands

## **8. Course Outline**

Describe Network Requirements

Describing Cisco VoIP Implementations

Introduction to IP QoS

Implementing the DiffServ QoS Model

Implementing AutoQoS

Wireless Security