SYLLABUS

Optimizing Converged Networks

Variously listed as:
INT 678 B, INT 698, INT 698 CA

Instructor
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Classroom
On-campus students in Optimizing Converged Networks meet in TH 127 (Labs) on Tuesdays from 2:00 pm to 4:30 pm

Virtual students will be provided access to the Departmental NetLab server for on-line remote access to the lab equipment.

Required Text
The required reading is available free to students on the Academy Connection or from our departmental server. Login instructions will be e-mailed to students in the course.

Optional Text

Objectives
One objective is to help you prepare to pass the 642-845 certification exam. However, the main objective is to complete a comprehensive set of troubleshooting exercises following specific methodologies presented in the curriculum and study the troubleshooting features of networking equipment.

Activities
There are two aspects to this course: on-line curriculum study and laboratory exercises. Study the on-line curriculum, take the on-line quizzes from home. The laboratory
exercises are also designed to be completed on Netlab so they may also be completed by
distance learning students. Login information for the curriculum and for Netlab will be
distributed to each student by e-mail.

**Grading**

*Undergraduate Students*

The course requirements for undergraduate students will be weighted in the following
manner:

- 30% On-line **quizzes**
- 30% On-line **Final Exam**
- 20% Labs
- 20% Lab Skills Exam or ONT certification exam (#642-845)

The grade a student earns is based on the following scale:

- A >93%
- B 82.0% ~ 92.9%
- C 71.0% ~ 81.9%
- D 60.0% ~ 70.9%
- U <60%

*Graduate Students*

The course requirements for graduate students will be weighted in the following manner:

- 30% On-line **quizzes**
- 30% On-line **Final Exam**
- 20% Labs
- 10% Lab Skills Exam
- 10% ONT certification exam (#642-845)

The grade a student earns is based on the following scale:

- A ≥93.0%
- B 82.0% ~ 92.9%
- C 71.0% ~ 81.9%
- D 60.0% ~ 70.9%
- U <60%

**Expectations**

Students are expected to produce high quality work and take an active role in advancing
their knowledge. The instructor is available to discuss issues and assist the student in
research to achieve this expectation.
Module 1-6 Curriculum Modules and Labs

Module 1: Converged Network Connectivity Requirements
Lab:
There are no labs in this module.

Module 2: Cisco VoIP Implementations
Lab:
2.6.1 Lab 2.1 Configure CME using the CLI and Cisco IP Communicator

Module 3: Introduction to IP QoS
Lab:
3.6.1 Lab 3.1 Preparing for QoS
3.6.2 Lab 3.2 Installing SDM
3.6.3 Lab 3.3 Configuring QoS with SDM

Module 4: Implement the DiffServ QoS Model
Lab:
4.11.1 Lab 4.1 Default Queuing Tools
4.11.2 Lab 4.2 Intermediate Queuing Tools
4.11.3 Lab 4.3 TCP Header Compression
4.11.4 Lab 4.4 Comparing Queuing Strategies
4.11.5 Lab 4.5 Class-based Queuing and NBAR
4.11.6 Lab 4.6 Class-based Marking, Shaping, and Policing
4.11.7 Lab 4.7 WAN QoS Tools
4.11.8 Lab 4.8 Shaping and Policing
4.11.9 Lab 4.9 QoS Pre-classify

Module 5: Implement Cisco AutoQoS
Lab:
Module 6: Implement Wireless Scalability

Lab:

6.6.1 Lab 6.1a Configuring a WLAN Controller
6.6.1 Lab 6.1b Configuring a WLAN Controller (Optional)
6.6.2 Lab 6.2a Configuring a WLAN Controller via the Web Interface
6.6.2 Lab 6.2b Configuring a WLAN Controller via the Web Interface (Optional)
6.6.3 Lab 6.3 Configuring a Wireless Client
6.6.4 Lab 6.4 Configuring WPA Security with Preshared Keys
6.6.5 Lab 6.5 Configuring LEAP