

JOLIET JUNIOR COLLEGE
DEPARTMENT OF COMPUTER INFORMATION
AND OFFICE SYSTEMS

COURSE SYLLABUS

Course Prefix and Number	CNT 208
Course Title	Optimizing Converged Networks
Curriculum	Computer Information Systems
Semester Hours	4
Lecture	4
Lab	0
Prerequisites	CNT 104 or CCNA Certification

Catalog Description

Optimizing Converged Networks introduces students to effective QoS techniques for optimization in converged networks with voice, wireless, and security applications. Topics include implementing a VoIP network, specific mechanisms for implementing the DiffServ QoS model, AutoQoS, wireless security, and basic wireless management. The class is designed to prepare students to pursue the Cisco CCNP examination.

Course Objectives: See attached

Prepared by:

Reviewed by:

Joe Sullivan
Dept. of CIOS
6/03

Revised 12/08
Revised 8/05

Ram Raghuraman
Department Chairperson

Date

STUDENT MATERIALS

A. Textbook:

- **NONE** -

B. Other Required Materials

All course material is available from a dedicated server on site or from the CICSO Network Academy Site.

Student Evaluation (Type of Grading)

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FORM C, Part II: TOPICAL OUTLINE

Course Prefix and Number: CNT 208 Title: Optimizing Converged Networks

Week	Unit, Topic, Class Activity (Indicate approximate time allotment for each topic/unit)	Comments
1	Converged Network Connectivity Requirements The Evolution of Telephony in the Enterprise, Describing Converged Network Requirements	
2	Cisco VoIP Implementations Introducing VoIP Networks, Digitizing and Packetizing Voice, Encapsulating Voice Packets for Transport, Calculating Bandwidth Requirements for VoIP, Implementing VoIP in an Enterprise Network	
3	Introduction to IP QoS Introducing QoS, Implementing Cisco IOS QoS, Selecting an Appropriate QoS Policy Model, Using MQC for Implementing QoS, Implementing QoS with Cisco SDM QoS Wizard	
4	Implement the DiffServ QoS Model Introducing Classification and Marking, Using NBAR for Classification, Introducing Queuing Implementations, Configuring WFQ, Configuring CBWFQ and LLQ, Congestion Avoidance, Introducing Traffic Policing and Shaping, Understanding WAN Link Efficiency Mechanisms, Implementing QoS Preclassify, Deploying End-to-End QoS	
5	Implement Cisco AutoQoS Introducing Cisco AutoQoS, Mitigating Common Cisco AutoQoS Issues	
6	Implement Wireless Scalability Implementing WLAN QoS, Introducing Wireless Security, Managing WLANs, Deploying Cisco WCS, Configuring Encryption and Authentication on Lightweight Access Points	

OBJECTIVES

Upon completion of CNT 208, students will be able to perform network-troubleshooting tasks in areas such as:

- Describe the converged network requirements within Cisco conceptual network models, with a focus on wireless security
- Describe basic principles of VoIP network bandwidth requirements, VoIP packet encapsulation, and VoIP implementation
- Explain the need for QoS and the methods to implement QoS
- Explain the key IP QoS mechanisms used to implement the DiffServ QoS model
- Configure Cisco AutoQoS model
- Describe and configure wireless security and basic wireless management
- Certification Exam: ONT and 642-845