



# BROWARD COMMUNITY COLLEGE COURSE OUTLINE

**LAST REVIEW: 2008-2009**  
*(i.e. 2003-2004)*

**NEXT REVIEW: 2013-2014**  
*(i.e. 2008-2009)*

**STATUS: A**  
*(A, I, D)*

**COURSE TITLE: Cisco Networking VIII**

**COMMON COURSE NUMBER: CET2628C**

**CREDIT HOURS: 4**

**CONTACT HOUR BREAKDOWN**  
*(per 16 week term)*

**CLOCK HOURS: 4**  
*(Voc. Course ONLY)*

Lecture: **48**

Lab: **16**

Clinic: **0**

Other: **0**

**PREREQUISITE(S): CET1620C (with a grade of 'C' or higher)**

**COREQUISITE(S):**

**PRE/COREQUISITE(S):**

**COURSE DESCRIPTION** *(750 characters, maximum):*

CCNP: Optimizing Converged Networks is one of four courses leading to the Cisco Certified Network Professional (CCNP) designation. CCNP: Optimizing Converged networks introduces Cisco Networking Academy Program students to optimizing and providing effective QoS techniques in converged networks operating voice, wireless and security applications. Topics include implementing a VOIP network, implementing QoS on converged networks, specific IP QoS mechanisms for implementing the DiffServ QoS model, AutoQoS, wireless security and basic wireless management.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

## **UNIT TITLES**

- 1. Converged Network Connectivity Requirements**
- 2. Cisco VoIP Implementations**
- 3. Introduction to IP QoS**
- 4. Implement the DiffServ QoS Model**
- 5. Implement Cisco AutoQoS**
- 6. Implement Wireless Scalability**



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## EVALUATION:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes.

Evaluation instruments will include written and/or skills-based examinations and individual in-class and/or take-home assignments. Evaluation methods may also include group in-class and/or take-home assignments.

*\*\*\* Complete the following only if course is seeking general education status \*\*\**

## GENERAL EDUCATION Competencies and Skills\*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Write clearly and coherently	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) ( 1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental )	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

*\* General Education Competencies and Skills endorsed by '05-'06 General Education Task Force*



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Common Course Number: CET2628C

## UNITS

### Unit 1

#### General Outcome:

**1.0 The student shall: understand converged network requirements**

#### Specific Measurable Learning Outcomes:

**Upon successful completion of this unit, the student shall be able to:**

**1.1** The Evolution of Telephony in the Enterprise

**1.2** Describing Converged Network Requirements



**Common Course Number: CET2628C**

**Unit 2**

**General Outcome:**

**2.0 The student shall: configure VoIP networks**

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 2.1 Introducing VoIP Networks
- 2.2 Digitizing and Packetizing Voice
- 2.3 Encapsulating Voice Packets for Transport
- 2.4 Calculating Bandwidth Requirements for VoIP
- 2.5 Implementing VoIP in an Enterprise Network
- 2.6 VoIP Lab Exercises



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**Unit 3**

**General Outcome:**

**3.0 The student shall: implement Quality of Service**

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

**3.1** Introducing QoS 3.1.1 Converged Network Quality Issues

**3.2** Implementing Cisco IOS QoS

**3.3** Selecting an Appropriate QoS Policy Model

**3.4** Using MQC for Implementing QoS

**3.5** Implementing QoS with Cisco SDM QoS Wizard

**3.6** Introduction QoS Lab Exercises



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**Unit 4**

**General Outcome:**

**4.0 The student shall: implement the DiffServ QoS Model**

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

**4.1** Introducing Classification and Marking 4.1.1 Classification

**4.2** Using NBAR for Classification

**4.3** Introducing Queuing Implementations

**4.4** Configuring WFQ

**4.5** Configuring CBWFQ and LLQ

**4.6** Congestion Avoidance

**4.7** Introducing Traffic Policing and Shaping

**4.8** Understanding WAN Link Efficiency Mechanisms

**4.9** Implementing QoS Preclassify

**4.10** Deploying End-to-End QoS

**4.11** DiffServ QoS Lab Exercises



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## **Unit 5**

### **General Outcome:**

**5.0 The student shall: implement AutoQoS**

### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

**5.1** Introducing Cisco AutoQoS

**5.2** Mitigating Common Cisco AutoQoS Issues

**5.3** AutoQoS Lab Exercises



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## **Unit 6**

### **General Outcome:**

**6.0 The student shall: implement wireless QoS and security**

### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

**6.1** Implementing WLAN QoS

**6.2** Introducing Wireless Security

**6.3** Managing WLANs

**6.4** Deploying Cisco WCS

**6.5** Configuring Encryption and Authentication on Lightweight Access Points

**6.6** WLAN Lab Exercises