



# BROWARD COMMUNITY COLLEGE

## COURSE OUTLINE

**LAST REVIEW: 2010-2011**  
*(i.e. 2003-2004)*

**NEXT REVIEW: 2015-2016**  
*(i.e. 2008-2009)*

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

**COURSE TITLE: Cisco Networking I**

**COMMON COURSE NUMBER: CET1600C**

**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): CDA1403C and CDA1302C (with grades of ‘C’ or higher)**

**COREQUISITE(S): None**

**PRE/COREQUISITE(S): CET1630C**

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

### **Network Fundamentals**

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Labs use a “model Internet” to allow students to analyze real data without affecting production networks. Packet tracer (PT) activities help students analyze protocol and network operation and build small networks in a simulated environment. At the end of the course, students build simple LAN topologies by applying basic principles of cabling, performing basic configurations of network devices such as routers and switches, and implementing IP addressing schemes.

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. Living in a Network-Centric World
2. Communications Over the Networks
3. OSI Application Layer Functionality
4. OSI Transport Layer
5. OSI Network Layer
6. Addressing the Network – IPv4
7. Data Link Layer
8. OSI Physical Layer



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## COURSE OUTLINE

9. Ethernet
10. Planning and Cabling Networks
11. Configuring and Testing Your Network



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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.**



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**Common Course Number: CET1600C**

### UNITS

#### Unit 1

##### **General Outcome:**

- 1.0 The student shall: be able to describe the importance of networking in today's society**

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

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

- 1.1 Chapter Introduction
- 1.2 Communicating in a Network-Centric World
- 1.3 Communication – An Essential Part of Our Lives
- 1.4 The Network as a Platform
- 1.5 The Architecture of the Internet
- 1.6 Trends in Networking
- 1.7 Chapter Labs
- 1.8 Chapter Summary
- 1.9 Chapter Quiz



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### Unit 2

#### General Outcome:

**2.0 The student shall: be able to describe basic networking concepts**

#### Specific Measurable Learning Outcomes:

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

- 2.1 Chapter Introduction
- 2.2 The Platform for Communications
- 2.3 LANs, WANs, and Internetworks
- 2.4 Protocols
- 2.5 Using Layered Models
- 2.6 Network Addressing
- 2.7 Chapter Labs
- 2.8 Chapter Summary
- 2.9 Chapter Quiz



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### Unit 3

#### General Outcome:

**3.0 The student shall: understand the Application Layer**

#### Specific Measurable Learning Outcomes:

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

- 3.1 Chapter Introduction
- 3.2 Applications – The Interface Between the Networks
- 3.3 Making Provisions for Applications and Services
- 3.4 Application Layer Protocols and Services Examples
- 3.5 Chapter Labs
- 3.6 Chapter Summary
- 3.7 Chapter Quiz



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### Unit 4

#### General Outcome:

**4.0 The student shall: be able to describe the Transport Layer**

#### Specific Measurable Learning Outcomes:

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

- 4.1 Chapter Introduction
- 4.2 Roles of the Transport Layer
- 4.3 The TCP Protocol – Communicating with Reliability
- 4.4 Managing TCP Sessions
- 4.5 The UDP Protocol – Communicating with Low Overhead
- 4.6 Chapter Labs
- 4.7 Chapter Summary
- 4.8 Chapter Quiz



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## COURSE OUTLINE

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### Unit 5

#### General Outcome:

**5.0 The student shall: be able to describe the Network Layer**

#### Specific Measurable Learning Outcomes:

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

- 5.1 Chapter Introduction
- 5.2 IPv4
- 5.3 Networks – Dividing Devices into Groups
- 5.4 Routing – How Our Data Packets are handled
- 5.5 Routing Processes: How Routes are Learned
- 5.6 Chapter Labs
- 5.7 Chapter Summary
- 5.8 Chapter Quiz



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### Unit 6

#### General Outcome:

**6.0 The student shall: be introduced to IPv4 and subnetting**

#### Specific Measurable Learning Outcomes:

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

- 6.1 Chapter Introduction
- 6.2 IPv4 Addresses
- 6.3 Addresses for Different Purposes
- 6.4 Assigning Addresses
- 6.5 Is It On My Network?
- 6.6 Calculating Addresses
- 6.7 Testing the Network Layer
- 6.8 Chapter Labs
- 6.9 Chapter Summaries
- 6.10 Chapter Quiz



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### Unit 7

#### General Outcome:

**7.0 The student shall: be able to describe the Data Link Layer**

#### Specific Measurable Learning Outcomes:

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

- 7.1 Chapter Introduction
- 7.2 Data Link Layer – Accessing the media
- 7.3 Media Access Control Techniques
- 7.4 Media Access Control Addressing and Framing Data
- 7.5 Putting it All Together
- 7.6 Chapter Labs
- 7.7 Chapter Summary
- 7.8 Chapter Quiz



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### Unit 8

#### General Outcome:

**8.0 The student shall: be able to describe the Physical Layer**

#### Specific Measurable Learning Outcomes:

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

- 8.1 Chapter Introduction
- 8.2 The Physical Layer – Communication Signals
- 8.3 Physical Signaling and Encoding: Representing
- 8.4 Physical Media – Connecting Communication
- 8.5 Chapter Labs
- 8.6 Chapter Summary
- 8.7 Chapter Quiz



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## COURSE OUTLINE

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### Unit 9

#### General Outcome:

**9.0 The student shall: be able to explain Ethernet**

#### Specific Measurable Learning Outcomes:

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

- 9.1 Chapter Introduction
- 9.2 Overview of Ethernet
- 9.3 Ethernet – Communication through the LAN
- 9.4 The Ethernet Frame
- 9.5 Ethernet Media Access Control
- 9.6 Ethernet Physical Layer
- 9.7 Hubs and Switches
- 9.8 Address Resolution Protocol (ARP)
- 9.9 Chapter Labs
- 9.10 Chapter Summary
- 9.11 Chapter Quiz



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### Unit 10

#### General Outcome:

**10.0 The student shall: design and implement a LAN**

#### Specific Measurable Learning Outcomes:

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

- 10.1 Chapter Introduction
- 10.2 LANs – Making the Physical Connection
- 10.3 Device Interconnections
- 10.4 Developing an Addressing Scheme
- 10.5 Calculating the Subnets
- 10.6 Device Interconnections
- 10.7 Chapter Labs
- 10.8 Chapter Summary
- 10.9 Chapter Quiz



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## COURSE OUTLINE

Common Course Number: CET1600C

### Unit 11

#### General Outcome:

**11.0 The student shall: be introduced to basic IOS configurations**

#### Specific Measurable Learning Outcomes:

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

- 11.1 Chapter Introduction
- 11.2 Configuring Cisco Devices – IOS basics
- 11.3 Applying a Basic Configuration Using Cisco IOS
- 11.4 Verifying Connectivity
- 11.5 Monitoring and Documenting Networks
- 11.6 Chapter Labs
- 11.7 Chapter Summary
- 11.8 Chapter Quiz