



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 II

COMMON COURSE NUMBER: CET1610C

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): CET1600C (with a grade of 'C' or higher)

COREQUISITE(S): None

PRE/COREQUISITE(S): None

COURSE DESCRIPTION *(750 characters, maximum):*

Routing Protocols and Concepts

This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. By the end of this course, students will be able to recognize and correct common routing issues and problems. Students complete a basic procedural lab, followed by basic configuration, implementation, and troubleshooting labs in each chapter. Packet Tracer (PT) activities reinforce new concepts, and allow students to model and analyze routing processes that may be difficult to visualize or understand.

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. Introduction to Routing and Packet Forwarding
2. Static Routing
3. Introduction to Dynamic Routing Protocols
4. Distance Vector Router Protocols
5. RIP version 1
6. VLSM and CIDR
7. RIPv2



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8. The Routing Table: A Closer Look
9. EIGRP
10. Link-State Routing Protocols
11. OSPF



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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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UNITS

Unit 1

General Outcome:

- 1.0 The student shall: be introduced to basic routing concepts

Specific Measurable Learning Outcomes:

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

- 1.1 Chapter Introduction
- 1.2 Inside the Router
- 1.3 CLI Configuration and Addressing
- 1.4 Building the Routing Table
- 1.5 Path Determination and Switching Functions
- 1.6 Router Configuration Labs
- 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: configure static route in the routing table

Specific Measurable Learning Outcomes:

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

- 2.1 Chapter Introduction
- 2.2 Routers in Networks
- 2.3 Router Configuration Review
- 2.4 Exploring Directly-Connected Networks
- 2.5 Static Routes with “Next Hop” Addresses
- 2.6 Static Routes with Exit Interfaces
- 2.7 Managing and Troubleshooting Static Routes
- 2.8 Static Route Configuration Labs
- 2.9 Chapter Labs
- 2.10 Chapter Summary
- 2.11 Chapter Quiz



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Unit 3

General Outcome:

3.0 The student shall: be introduced to dynamic routing

Specific Measurable Learning Outcomes:

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

- 3.1 Chapter Introduction
- 3.2 Introduction and Advantages
- 3.3 Classifying Dynamic Routing Protocols
- 3.4 Metrics
- 3.5 Administrative Distances
- 3.6 Routing Protocol and Subnetting Activities
- 3.7 Chapter Labs
- 3.8 Chapter Summary
- 3.9 Chapter Quiz



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Unit 4

General Outcome:

4.0 The student shall: be able describe Distance Vector Routing Protocols

Specific Measurable Learning Outcomes:

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

- 4.1 Chapter Introduction
- 4.2 Introduction to Distance Vector Routing Protocols
- 4.3 Network Discovery
- 4.4 Routing Table Maintenance
- 4.5 Routing Loops
- 4.6 Distance Vector Routing Protocols Today
- 4.7 Chapter Labs
- 4.8 Chapter Summary
- 4.9 Chapter Quiz



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Unit 5

General Outcome:

5.0 The student shall: configure RIPv1

Specific Measurable Learning Outcomes:

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

- 5.1 Chapter Introduction
- 5.2 RIPv1: Distance Vector, Classful Routing Protocol
- 5.3 Basic RIPv1 Configuration
- 5.4 Verification and Troubleshooting
- 5.5 Automatic Summarization
- 5.6 Default Route and RIPv1
- 5.7 Chapter Labs
- 5.8 Chapter Summary
- 5.9 Chapter Quiz



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Unit 6

General Outcome:

6.0 The student shall: be to address networks using VLSM

Specific Measurable Learning Outcomes:

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

- 6.1 Chapter Introduction
- 6.2 Classful and Classless Addressing
- 6.3 VLSM
- 6.4 CIDR
- 6.5 VLSM and Route Summarization Activity
- 6.6 Chapter Labs
- 6.7 Chapter Summary
- 6.8 Chapter Quiz



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Unit 7

General Outcome:

7.0 The student shall: configure RIPv2 using VLSM

Specific Measurable Learning Outcomes:

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

- 7.1 Chapter Introduction
- 7.2 RIPv1 Limitations
- 7.3 Configuring RIPv2
- 7.4 VLSM and CIDR
- 7.5 Verifying and Troubleshooting RIPv2
- 7.6 RIPv2 Configuration Labs
- 7.7 Chapter Labs
- 7.8 Chapter Summary
- 7.9 Chapter Quiz



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Unit 8

General Outcome:

8.0 The student shall: be able to populate the routing table

Specific Measurable Learning Outcomes:

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

- 8.1 Chapter Introduction
- 8.2 The Routing Table Structure
- 8.3 Routing Table Lookup Process
- 8.4 Routing Behavior
- 8.5 Routing Table Labs
- 8.6 Chapter Labs
- 8.7 Chapter Summary
- 8.8 Chapter Quiz



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Unit 9

General Outcome:

9.0 The student shall: implement the EIGRP protocol

Specific Measurable Learning Outcomes:

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

- 9.1 Chapter Introduction
- 9.2 Introduction to EIGRP
- 9.3 Basic EIGRP Configuration
- 9.4 EIGRP Metric Calculation
- 9.5 DUAL
- 9.6 More EIGRP Configuration
- 9.7 EIGRP Configuration Labs
- 9.8 Chapter Labs
- 9.9 Chapter Summary
- 9.10 Chapter Quiz



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Unit 10

General Outcome:

10.0 The student shall: understand link-state routing protocols

Specific Measurable Learning Outcomes:

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

- 10.1 Chapter Introduction
- 10.2 Link-State Routing Protocols
- 10.3 Implementing Link-State Routing Protocols
- 10.4 Chapter Labs
- 10.5 Chapter Summary
- 10.6 Chapter Quiz



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Unit 11

General Outcome:

11.0 The student shall: configure OSPF routing protocol

Specific Measurable Learning Outcomes:

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

- 11.1 Chapter Introduction
- 11.2 Introduction to OSPF
- 11.3 Basic OSPF Configuration
- 11.4 The OSPF Metric
- 11.5 OSPF and Multi-access Networks
- 11.6 More OSPF Configuration
- 11.7 OSPF Configuration Labs
- 11.8 Chapter Labs
- 11.9 Chapter Summary
- 11.10 Chapter Quiz