DATE SUBMITTED _____ **CATALOG NO.** CSIS 113

DATE DICC APPROVED 8/30/05 **DATE LAST REVIEWED** _____

COURSE INFORMATION FORM

DISCIPLINE Computer Science/Information Systems

COURSE TITLE Router and Routing Basics: CCNA2

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CATALOG DESCRIPTION

This is the second of four CCNA courses leading to the Cisco Certified Network Associate (CCNA) designation. CCNA 2 focuses on initial router configuration, Cisco IOS Software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Students will develop skills on how to configure a router, manage Cisco IOS Software, configure routing protocol on routers, and set the access lists to control the access to routers.

PREREQUISITES

CSIS 112

EXPECTED STUDENT OUTCOMES IN THE COURSE

Upon completion of this course, the student will be able to:

1. Examine and analyze router elements (RAM, ROM, CDP)
2. Describe the difference between connection-oriented and connectionless networks.
3. Describe the flow control and describe the three basic methods used in networking.
4. Identify the functions of the TCP/IP transport layer protocols.
5. Manage configuration files.
6. Identify the functions performed by ICMP.
7. Identify and use main Cisco IOS software setup, configuration and interface commands.
8. Load the Cisco IOS from flash memory, a TFTP server or ROM.
9. Backup, upgrade and load the Cisco IOS.
10. Prepare an initial configuration of a router and enable IP.
11. Identify the parts in specific protocol address examples.
12. List problems that each routing type encounters when dealing with topology changes and describe techniques to reduce their effect.
13. Configure and verify IP addresses
14. Add the RIP and IGRP routing protocols to the router configuration.

CLASS-LEVEL ASSESSMENT MEASURES

Student accomplishment of expected student outcomes will be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

Classroom Discussion/Participation (1-14)

Assignments/Labs (1-14)

Written exam (1-14)

Skills exam (1-14)

PROGRAM-LEVEL OUTCOMES ADDRESSED

General Education Outcomes
Specify which general education outcomes, if any, are substantially addressed by the course by completing the "Course/Program Assessment Matrix" to show the relationship between course and program outcomes and assessment measures.

Occupational Program Outcomes
Specify which occupational program outcomes, if any, are substantially addressed by the course by completing the "Course/Program Assessment Matrix" to show the relationship between course and program outcomes to assessment measures.

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COURSE OUTLINE FORM

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COURSE TITLE Router and Routing Basics: CCNA2

Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. WANs and Routers
   - A. WANs
   - B. Routers

II. Introduction to Routers
   - A. Operating Cisco IOS Software
   - B. Starting a Router

III. Configuring a Router
   - A. Configuring a Router
   - B. Finishing the Configuration

IV. Learning about Other Devices
   - A. Discovering and Connecting to Neighbors
   - B. Getting Information about Remote Devices

V. Managing Cisco IOS Software
   - A. Router Boot Sequence and Verification
   - B. Managing the Cisco File System

VI. Routing and Routing Protocols
   - A. Introduction to Static Routing
   - B. Dynamic Routing Overview

VII. Routing Protocols Overview
   - A. Distance Vector Routing Protocols
   - B. Distance Vector Routing
   - C. RIP
   - D. IGRP

VIII. TCP/IP Suite Error and Control Messages
   - A. Overview of TCP/IP Error Message
   - B. TCP/IP Suite Control Messages

IX. Basic Router Troubleshooting
   - A. Examining the Routing Table
   - B. Network Testing
   - C. Troubleshooting Router Issues Overview

X. Intermediate TCP/IP

A. TCP Operation

B. Overview of Transport Layer Ports

XI. Access Control Lists (ACLs)

A. Access Control List Fundamentals

B. Access Control Lists (ACLs)