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## Course Outline for CNT 64

### CISCO CCNP SEMESTER 6 REMOTE ACCESS

Effective: Fall

#### I. CATALOG DESCRIPTION:

CNT 64 — CISCO CCNP SEMESTER 6 REMOTE ACCESS — 4.00 units

This is one of the four courses in the Certified Cisco Network Professional (CCNP) curriculum. This course is designed to provide students a combination of both lectures and laboratory experience in current and emerging networking technology. This will prepare them for the Cisco Certified Networking Professional (CCNP) exam: Building Cisco Remote Access Networks. Instruction includes ISDN, DDR, ODR, dialup networking, Cisco 700 series routers, Frame Relay, and AAA. Recommend students take courses in order and only one CCNP course at a time.

3.00 Units Lecture 1.00 Units Lab

#### Prerequisite

-  
with a minimum grade of C  
or

-

#### Grading Methods:

Letter or P/NP

#### Discipline:

	MIN
<b>Lecture Hours:</b>	54.00
<b>Lab Hours:</b>	54.00
<b>Total Hours:</b>	108.00

#### II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 2

#### III. PREREQUISITE AND/OR ADVISORY SKILLS:

#### IV. MEASURABLE OBJECTIVES:

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

1. implement and configure dialup remote access;
2. implement and configure frame relay networks in a laboratory environment;
3. implement and configure ISDN in a laboratory environment.

#### V. CONTENT:

- A. Selecting, Assembling, and Cabling LAN components
  1. Using remote access
  2. Determining the WAN type to use
  3. Identify site requirements and solutions
  4. Selecting Cisco remote access solutions
  5. Assembling and cabling WAN components
- B. Configuring Asynchronous connections with modems
  1. Modem function
  2. Configuring for Asynchronous communication
  3. Modem configuration
  4. Maintaining modem auto-config
- C. Configuring Point-to-Point protocol and controlling network access
  1. PPP Architecture
  2. PPP link control protocol option
  3. PPP callback
  4. PPP compression
- D. Accessing the central site with Windows 9X
  1. Windows 95 dialup networking
  2. Configuring and Window 9X/2K dialup connection
- E. Using ISDN and DDR technologies to enhance remote connectivity

1. ISDN architecture
2. ISDN protocol layers
3. ISDN BRI and DDR
4. Static and default routing
5. Optional configuration
6. Monitoring ISDN interfaces
7. ISDN PRI
- F. Optimizing the use of DDR interface-dialer profiles and rotary groups
  1. Rotary groups
  2. Dialer profiles
  3. Time based access list
  4. Scaling DDR
- G. Using X25 for remote access
  1. X25 architecture
  2. Configuration of x25 routing
- H. Frame relay connection and traffic flow control objectives
  1. Frame relay
  2. Configuring frame relay
  3. Frame relay topology
  4. Frame relay traffic shaping
  5. On demand routing
- I. Enabling backup to a permanent connection
  1. Dial backup
  2. Backup interface options
  3. Routing with load backup features
  4. Verifying dial-back configuration
- J. Managing network performance with queuing and compression
  1. Queuing
  2. Queuing options
  3. Optimize data flow with data compression

#### VI. METHODS OF INSTRUCTION:

- A. **Lecture** -
- B. **Lab** -
- C. **Discussion** -
- D. **Demonstration** -

#### VII. TYPICAL ASSIGNMENTS:

- A. Reading: 1. Read on-line curriculum chapter 4. Discuss Windows 95 dialup networking options B. Demonstration: 2. Configure Dialup networking.

#### VIII. EVALUATION:

- A. **Methods**
- B. **Frequency**

#### IX. TYPICAL TEXTS:

1. - CCNP Cisco Networking Academy Program: Semester Six Companion Guide., Cisco Press, 2000.
2. Cisco Academy on-line curriculum

#### X. OTHER MATERIALS REQUIRED OF STUDENTS: