

- u. Configure and verify basic RIPv1, RIPv2, single area OSPF, and EIGRP operations in a small routed network
- v. Use router commands to troubleshoot common errors that occur in small routed networks.

OUTLINE OF INSTRUCTION:

- I. Introduction to Routing and Packet Forwarding
 - a. Inside the Router
 - b. CLI Configuration and Addressing
 - c. Building the Routing Table
 - d. Path Determination and Switching Functions
- II. Static Routing
 - a. Routers in Networks
 - b. Router Configuration Review
 - c. Exploring Directly-Connected Networks
 - d. Static Routes with “Next Hop” Addresses
 - e. Static Routes with Exit Interfaces
 - f. Summary and Default Static Routes
 - g. Managing and Troubleshooting Static Routes
- III. Introduction to Dynamic Routing Protocols
 - a. Introduction and Advantages
 - b. Classifying Dynamic Routing Protocols
 - c. Metrics and Administrative Distances
 - d. Routing Protocol and Subnetting Activities
- IV. Distance Vector Routing Protocols
 - a. Introduction to Distance Vector Routing Protocols
 - b. Network Discovery
 - c. Routing Table Maintenance
 - d. Routing Loops
 - e. Distance Vector Routing Protocols Today
- V. RIP Version 1
 - a. RIPv1: Distance Vector, Classful Routing Protocol
 - b. Basic RIPv1 Configuration
 - c. Verification and Troubleshooting
 - d. Automatic Summarization
 - e. Default Route and RIPv1
- VI. VLSM and CIDR
 - a. Classful and Classless Addressing
 - b. VLSM
 - c. CIDR
 - d. VLSM and Route Summarization Activity

- VII. RIPv2
 - a. RIPv1 Limitations
 - b. Configuring RIPv2
 - c. VLSM and CIDR
 - d. Verifying and Troubleshooting RIPv2

- VIII. The Routing Table: A Closer Look
 - a. The Routing Table Structure
 - b. Routing Table Lookup Process
 - c. Routing Behavior

- IX. EIGRP
 - a. Introduction to EIGRP
 - b. Basic EIGRP Configuration
 - c. EIGRP Metric Calculation
 - d. DUAL

- X. Link-State Routing Protocols
 - a. Link-State Routing Protocols
 - b. Implementing Link-State Routing Protocols

- XI. OSPF
 - a. Introduction to OSPF
 - b. Basic OSPF Configuration
 - c. The OSPF Metric
 - d. OSPF and Multi-Access Networks

REQUIRED TEXTBOOK AND MATERIALS:

Text to be assigned by the instructor each semester

STATEMENT FOR STUDENTS WITH DISABILITIES: