Institute of Continuing Education

Course outline: Advanced Network Device Configuration & Management

Course Title: Industrial Training on Advanced Network Device Configuration & Management
Course Duration: 12 Weeks (3 hours per week)
Course Schedule: Thursday (10am to 1pm)
Course Fee: BDT 7000 (On-Campus)
Target Audience: Internship Students, Networking Professionals and System Administrators.

Week 1-6: Cisco Lab Focus (IOS)

- **Week 1-2: IP Addressing and Cisco IOS Fundamentals (6 hrs.)**
    - IPv4 and IPv6 Addressing, Subnetting and VLAM.
    - Lab: Accessing Cisco devices via Console, Telnet, SSH.
    - Lab: Basic IOS commands, hostname, password, banner configuration.
    - Lab: Interface configuration (IP addressing, no shutdown).
    - Lab: Saving and loading configurations (startup-config, running-config).
- **Week 3-4: Cisco Switching Technology (6 hrs.)**
    - Lab: Creating and assigning VLANs of Cisco switches.
    - Lab: Configuring 802.1Q trunks between switches.
    - Lab: Verifying VLAN and trunk configurations (show commands).
    - Lab: Router-on-a-Stick configuration for inter-VLAN routing.
    - Lab: Configuring inter-VLAN routing on Layer 3 switches (SVI).
    - Lab: Troubleshooting inter-VLAN communication issues.
- **Week 5-6: Routing Concept, Static and Dynamic Routing (6 hrs.)**
    - Lab: Implementing static routes for reachability between subnets.
    - Lab: Configuring default routes.
    - Lab: Configuring and verifying RIPv2 for dynamic routing.

Week 7-10: Juniper Lab Focus (JUNOS)

- **Week 7-8: JUNOS Fundamentals & Initial Device Setup (6 hrs.)**
    - Lab: Accessing Juniper devices via Console, SSH.
    - Lab: JUNOS CLI operational and configuration modes.
    - Lab: Basic system configuration (hostname, root password, user accounts).
    - Lab: Interface configuration (IP addressing, description).
- **Week 8: Juniper Switching Technology (3 hrs.)**
    - Lab: Configuring VLANs on Juniper switches (EX Series).
    - Lab: Implementing trunk ports with 802.1Q.
    - Lab: Assigning interfaces to VLANs.
- **Week 9: Basic Firewall Filters (Juniper) (3 hrs.)**
    - Lab: Creating and applying stateless firewall filters (ACLs).
    - Lab: Filtering traffic based on source/destination IP, port.
    - Lab: Applying filters to interfaces.

Week 10-12: MikroTik Lab Focus (RouterOS)

- **Week 10-11: RouterOS Fundamentals & Initial Device Setup (6 hrs.)**
    - Lab: Accessing MikroTik devices via WinBox, WebFig, SSH.
    - Lab: Basic RouterOS configuration (identity, users, interface naming).
    - Lab: IP addressing on interfaces.
    - Lab: Saving and restoring configuration backups.
- **Week 12: MikroTik Bandwidth Management (3 hrs.)**
    - Lab: Simple Queue, Target, Destination, Max-limit, limit-at
    - Lab: One Simple queue for the whole network (PCQ)

This outline provides a comprehensive, hands-on experience across the three major networking platforms. Each lab session will involve practical configuration and verification tasks to solidify understanding