9 weeks program

Weekly class topics.

- **Week 1:** Fundamentals of networking, different types of network topologies, the OSI and TCP/IP models, and initial setup of Cisco network simulation tools like Packet Tracer and GNS3.

- **Week 2:** IP addressing in IPv4 and IPv6, subnetting basics, CIDR notation, and the use of binary/hexadecimal for IP manipulation. Students will also learn static routing and how packets travel between networks.

- **Week 3:** Deep dive into subnetting techniques (FLSM & VLSM), and VLAN configuration with an introduction to STP (Spanning Tree Protocol) and trunking using DTP/VTP.

- **Week 4:** Transition to dynamic routing protocols like RIP, EIGRP, and OSPF/BGP, while also introducing EtherChannel for link aggregation and redundancy.

- **Week 5:** OSPF Deep Dive, First Hop Redundancy Protocols (FHRPs), Wireshark Analysis and IPv6 Addressing & Access Control Lists (ACLs).

- **Week 6:** Network Services – CDP/LLDP, DHCP, DNS, NTP, SNMP and Syslog; Secure Remote Access, NAT, FTP/TFTP.

- **Week 7:** Quality of Service (QoS), Port Security, and Kali Linux and DHCP Snooping, Dynamic ARP Inspection (DAI), and WAN Technologies.

- **Week 8:** GRE Tunnelling, Virtualization, Containers, and VRF and Wireless Fundamentals and Wireless Security.

- **Week 9**: Automation, APIs, JSON/YAML, REST SDN, Ansible, Puppet, Terraform. Final Review and Mock Exam/Quiz.