



Week 1: Introduction to Networking

- Basic networking concepts and terminology
- Types of networks: LAN, WAN, WLAN, etc.
- The OSI and TCP/IP models
- Network topologies

Week 2: Network Devices and Technologies

- Common network devices: routers, switches, hubs, etc.
- Network cabling and wiring
- Wireless network technologies
- Network protocols: TCP, UDP, ICMP, etc.

Week 3: Network Addressing and Routing

- IP addressing and subnetting
- Understanding the Domain Name System (DNS)
- Routing and forwarding packets
- Dynamic routing protocols: OSPF, BGP, etc.

Week 4: Network Security

- Network security concepts and terminology
- Threats to network security
- Network security policies and procedures
- Network security technologies: firewalls, VPNs, etc.

Week 5: Network Management and Monitoring

- Network management tools and protocols

- SNMP and other monitoring protocols
- Network performance monitoring
- Troubleshooting network issues

Week 6: Wireless Networking

- Understanding wireless networking concepts and terminology
- Wireless network standards: 802.11a/b/g/n/ac
- Wireless network security: WPA, WPA2, etc.
- Wireless network design and implementation

Week 7: Network Virtualization and Cloud Computing

- Understanding network virtualization and cloud computing
- Virtualization technologies: VMware, Hyper-V, etc.
- Cloud computing models: SaaS, PaaS, IaaS
- Network virtualization and cloud security

Week 8: Network Design and Architecture

- Network design principles and methodologies
- Network architecture: LAN, WAN, data center, etc.
- Network scalability and availability
- Network design case studies

Week 9: Network Troubleshooting and Support

- Network troubleshooting methodology
- Troubleshooting tools and techniques
- Network support: help desk, ticketing systems, etc.
- Remote support and access

Week 10: Quality of Service (QoS)

- Understanding QoS and its importance
- QoS technologies and protocols
- QoS implementation and configuration
- Network performance optimization

Week 11: Wide Area Networking (WAN)

- Understanding WAN concepts and technologies
- WAN architectures and topologies
- WAN technologies: Frame Relay, ATM, MPLS, etc.
- WAN security and management

Week 12: Network Storage and Data Backup

- Network storage technologies: SAN, NAS, etc.
- Storage protocols: iSCSI, NFS, etc.
- Data backup and recovery strategies
- Network storage management and monitoring

Week 13: Network Automation and Programmability

- Understanding network automation and programmability
- Software-defined networking (SDN)
- Network programmability using APIs and scripting
- Network automation and orchestration tools

Week 14: Network Performance Tuning

- Understanding network performance tuning
- Network tuning technologies and techniques
- Network optimization: bandwidth management, traffic shaping, etc.
- Network performance testing and monitoring

Week 15: Network Applications and Services

- Understanding network applications and services
- Common network applications: email, DNS, HTTP, etc.
- Network service protocols: DHCP, FTP, etc.
- Network application and service security

Week 16: Network Forensics and Incident Response

- Understanding network forensics and incident response

- Incident response process and methodology
- Network forensics tools and techniques
- Network forensics case studies

Week 17: Voice and Video over IP

- Understanding voice and video over IP
- VoIP and videoconferencing technologies
- VoIP and videoconferencing quality of service
- VoIP and videoconferencing security

Week 18: Network Access Control (NAC)

- Understanding network access control (NAC)
- NAC technologies and solutions
- NAC implementation and configuration
- NAC security and management

Week 19: Internet of Things (IoT)

- Understanding the Internet of Things (IoT)
- IoT architecture and design
- IoT protocols and technologies
- IoT security and privacy

Week 20: Network Trends and Future Directions

- Emerging network technologies and trends
- The future of networking: virtualization, automation, etc.
- Network career paths and certifications
- Staying up-to-date in the networking field