

# NETWORKING SYLLABUS

## Network Models (FOUNDATION 🔥)

### OSI Model

- 7 Layers of OSI
- Function of Each Layer
- Real-world Examples

### TCP/IP Model

- Layers of TCP/IP
- OSI vs TCP/IP Comparison

### Network Devices

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- Hub
  - Switch
  - Router
  - Modem
  - Bridge
  - Repeater
  - Access Point
  - Firewall

# NETWORKING SYLLABUS

## IP Addressing (CORE 🔥)

- IPv4 vs IPv6
- IP Address Classes
- Public vs Private IP
- Static vs Dynamic IP
- Subnetting (VERY IMPORTANT)
- CIDR Notation

## Networking Protocols

- TCP
- UDP
- HTTP / HTTPS
- FTP
- SMTP
- POP3 / IMAP
- DNS
- DHCP
- ARP
- ICMP

# NETWORKING SYLLABUS

## Switching Concepts

- MAC Address
- Switch Working
- VLAN
- Trunking
- Port Security
- STP (Basics)

## Routing Concepts

- Router Working
- Static Routing
- Dynamic Routing (Basics)
- Routing Tables
- Default Gateway

## Wireless Networking

- Wi-Fi Standards
- Wireless Modes
- Encryption (WEP, WPA, WPA2, WPA3)
- Wireless Security
- Access Point Configuration

# NETWORKING SYLLABUS

## Network Security Basics

- Firewalls
- IDS / IPS
- VPN
- Network Attacks (Basic Overview)
- Secure Network Design

