

## Palo Alto Networks Cybersecurity Academy - Network Security Fundamentals

### **Course Description:**

This course provides the student with an understanding of the fundamental tenants of network security and covers the general concepts involved in maintaining a secure network computing environment. Upon successful completion of this course, students will be able to examine, describe general network security fundamentals and implement basic network security configuration techniques.

### **Course Objectives:**

Upon completion of this course students will be able to perform the following:

- Identify the common enterprise network devices.
- Differentiate between routed and routing protocols.
- Recognize the various types of area networks and topologies.
- Describe the Domain Name System DNS, FQDN, and IoT.
- Recognize decimal binary, and hexadecimal conversion methods.
- Describe the structure and fields of an IP header, IPV4, and IPV6 addresses.
- Subnet an IPV4 Class C addressing scheme and configure an IP address on the firewall.
- Review the four DHCP process messages and Network Address Translation (NAT).
- Setup the firewall as a DHCP server and test the DHCP client.
- Recognize packet encapsulation and the lifecycle process.
- Identify protocols and define the OSI and TCP model layers.
- Review the transport layer protocols, ports, and packet filtering procedures.
- Create and analyze packet captures using Wireshark.
- Classify various endpoint and network security technologies.
- Identify common network security encryption algorithms and key management concepts.
- Recognize symmetric/asymmetric key rotation techniques and PKI.
- Generate a Self-Signed Root Certificate Authority (CA) certificate.
- Create a decryption policy on the firewall to decrypt SSH traffic and SSL traffic.
- Describe the benefits of the next generation firewall single pass architecture.
- Identify the NGFW App-ID, User-ID, Content-ID and deployment options.
- Explore the five steps required to implement a NGFW zero-trust environment.
- Recognize network baselines, documentation, tools, and diagrams.
- Configure the NGFW to monitor, forward, and backup system logs (Syslog).