

# Wallenpaupack Area School District Planned Course Curriculum Guide

**BCIT**

## **Networking Essentials**

**Course Description:**

This course introduces the fundamental properties of data transmission and computer networks. Topics include: data transfer, the OSI and TCP/IP models, protocols, WAN and LAN topologies, devices and media, security and troubleshooting. This course provides basic background for other networking courses and industry certifications.

**Initial Creation Date (if applicable) and Revision Dates:**

Revision Date – Spring 2024

<b>Wallenpaupack Area School District Curriculum</b>	
<b>COURSE:</b> Networking Essentials	<b>GRADE/S:</b> 11/12
<b>UNIT 1:</b>	<b>TIMEFRAME:</b> 1 semester

**PA COMMON CORE/NATIONAL STANDARDS:**  
 15.2.12.N 15.3.12.T 15.4.12.B 3.4.12.B2 3.4.12.B1 3.4.12.A1 3.4.12.A2 3.4.12.E1 3.4.12.E4 3.4.12.E6

- UNIT OBJECTIVES (SWBATS):**
- Install, maintain, and troubleshoot modern network hardware and software.
  - Design, implement and administer the user's network environment - including file sharing and printing.
  - Devise a network security plan using modern Network Operating Systems, technologies and protocols.

**INSTRUCTIONAL STRATEGIES/ACTIVITIES:**  
 Hands-On labs & projects  
 Recitation / Lecture  
 Stage checks for CompTia A+ preparedness

**ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):**  
 Exams / Quizzes  
 Labs / projects

**DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):**  
 Instruction will focus on real-world content, activities, and common practices associated with IT careers. Students enrolled in this class will be required to complete tasks and meet standards required by IT careers associated with the coursework.

**RESOURCES (Technology Based Resources, Text Resources, etc.):**  
 CompTIA (& associated resources)

**KEY VOCABULARY:**  
 3G  
 4G  
 5G  
 Access Control List (ACL)  
 Address  
 Address Resolution Protocol (ARP)  
 Administrator  
 Address Resolution Protocol (ARP)  
 Advanced Encryption Standard (AES)  
 Amazon Web Services (AWS)  
 Apache  
 Application Programming Interface (API)  
 Asynchronous Transfer Mode (ATM)  
 Auto Scaling  
 Bandwidth  
 Bit

Bridge  
Broadcast  
Client  
Cloud  
Cloud Computing  
Cluster  
Code  
Collision  
Compiler  
Crossover Cable  
Data Center  
Data Encryption Standard (DES)  
Data Link Layer  
Data Mining  
Database  
Database Server  
Dedicated Line  
Denial of Service (DoS)  
Developer  
Dial-up  
Domain Name System (DNS)  
Dynamic Host Configuration Protocol (DHCP)  
Encryption  
Ethernet  
Extranet  
File Transfer Protocol (FTP)  
Firewall  
Firmware  
Gateway  
Gigabit Ethernet  
Hub  
Hypertext Transfer Protocol (HTTP)  
Hypertext Transfer Protocol Secure (HTTPS)  
IGMP (Internet Group Management Protocol)  
Infrastructure as a Service (IaaS)  
Intrusion Detection System (IDS)  
Input  
JavaScript  
Jitter  
LAN (Local Area Network)  
Leased Line  
Internet Protocol version 4 (IPv4)  
Internet Protocol version 6 (IPv6)  
Internet Service Provider (ISP)  
IP Address  
Malware  
Modem  
Multicast

NAT (Network Address Translation)  
Netmask  
Network  
Network Interface Card (NIC)  
Network as a Service (NaaS)  
Open system interconnection model (OSI model)  
Packet  
Peer-to-Peer Architecture  
Platform as a Service (PaaS)  
Protocol  
Router  
Secure Sockets Layer (SSL)  
Server  
Service Pack  
Simple Mail Transfer Protocol (SMTP)  
Software as a Service (SaaS)  
Spyware  
Structured Query Language (SQL)  
Subnet  
Switch  
Transmission Control Protocol (TCP)  
Trojan Horse  
Unicast  
User Datagram Protocol (UDP)  
Virtual Private Network (VPN)  
Virtual Machine (VM)  
Voice over IP (VoIP)  
Wide Area Network (WAN)  
Wireless Access Point (WAP)  
Wired Equivalent Privacy (WEP)  
Wi-Fi Protected Access (WPA)  
Worm  
Zero Configuration Networking  
Zombie  
Zone  
Zone Transfer  
Data Backup  
Data Recovery