

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

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