

Blackhawk School District

CURRICULUM

Course Title: Information Technology 2
Course Number: 1061
Grade Level(s): 10 – 12
Length of Period: 45 minutes
Length of Course: 1 semester
Faculty Author(s): Cox
Credits: .5
Date: 1/19/09; Revised May '09

COURSE DESCRIPTION: The Information Technology II class is structured around the Network+ certification exam. The class will focus on networking terminology, protocols, LANS, WANS, Ethernet, Internet Protocol (IP) addressing, design and documentation of basic network cabling, and network to network communications.

PA Standard	Description
3.7.10.C	Apply basic computer operations and concepts.
3.7.10.D	Utilize computer software to solve specific problems.
3.7.10.E	Apply basic computer communications systems.
3.7.12.C	Evaluate computer operations and concepts as to their effectiveness to solve specific problems.
3.7.12.D	Evaluate the effectiveness of computer software to solve specific problems.
3.7.12.E	Assess the effectiveness of computer communications systems.

Class Resources
All-in-One Network+ Certification Exam Guide, 3rd Ed., by Michael Meyers
Sun xVM VirtualBox
Various Versions of Windows/Linux

Course Topic	Proposed Time	Topic Reflection
Defining Networking	5 Days	
<ul style="list-style-type: none"> * Network+ Certification Overview * Historical Overview of Networking * Network Modernization * Modern Overview of Networking 		

Course Topic	Proposed Time	Topic Reflection
OSI Model	5 Days	
<ul style="list-style-type: none"> * Functions of Network Hardware * Functions of Network Software * Definition of OSI Model * Hardware/Software and the OSI Model 		

Course Topic	Proposed Time	Topic Reflection
Networking Hardware	4 Days	
<ul style="list-style-type: none"> * Network Topologies * Network Cabling * Networking Industry Standards * Hardware Cost Analysis 		

Course Topic	Proposed Time	Topic Reflection
Ethernet Basics	5 Days	
<ul style="list-style-type: none"> * Ethernet Design * Ethernet Cabling * Functionality of Repeaters and Bridges * Networking Careers 		

Course Topic	Proposed Time	Topic Reflection
Modern Ethernet	6 Days	
<ul style="list-style-type: none"> * 10BaseT Ethernet * 10BaseFL Ethernet * 100Base Ethernet * Gigabit Ethernet * Modern Ethernet Cables and Connectors * Creating Ethernet Cables * Connecting Ethernet Segments 		

Course Topic	Proposed Time	Topic Reflection
Non-Ethernet Networks	4 Days	
<ul style="list-style-type: none"> * Token Ring * ARCNet * LocalTalk * FDDI * ATM * Non-Ethernet Cables and Connectors 		

Course Topic	Proposed Time	Topic Reflection
Installing a Physical Network	6 Days	
<ul style="list-style-type: none"> * Components of a Structured Cabling System * Installing Structures Cables * Network Card Installation and Configuration * Troubleshooting a Structured Cable Network * Cabling Certifications 		

Course Topic	Proposed Time	Topic Reflection
Wireless Networking	5 Days	
<ul style="list-style-type: none"> * Wireless Network Hardware * Wireless Network Software * Wireless Network Standards * Wireless Network Limitations * Wireless Network Security * Wireless Network Troubleshooting * Home Networking Guide Project 		

Course Topic	Proposed Time	Topic Reflection
Networking Protocols	5 Days	
<ul style="list-style-type: none"> * Overview of Network Protocols * NetBIOS/NetBEUI * IPX/SPX * TCP/IP * AppleTalk 		

Course Topic	Proposed Time	Topic Reflection
TCP/IP	6 Days	
<ul style="list-style-type: none"> * IPv4 IP Address Format * Subnet Mask and Default Gateway * Creating Subnets * Classful and Classless Subnets * Functionality of DNS, DHCP, and WINS * TCP and UDP Applications * Overview of IPv6 		

Course Topic	Proposed Time	Topic Reflection
Network Operating Systems	5 Days	
<ul style="list-style-type: none"> * Resource, Server, and Organization based models * Operating Systems in a Network Environment * Client and Server Configuration 		

Course Topic	Proposed Time	Topic Reflection
Sharing Resources	5 Days	
<ul style="list-style-type: none"> * Naming of Shared Resources * Permissions in Network Operating Systems * How to Share Resources * Accessing Shared Resources 		

Course Topic	Proposed Time	Topic Reflection
Advanced TCP/IP	5 Days	
<ul style="list-style-type: none"> * Functions and Capabilities of DNS * Functions and Capabilities of DHCP * Functions and Capabilities of WINS * TCP/IP Diagnostic Utilities 		

Course Topic	Proposed Time	Topic Reflection
TCP/IP and the Internet	5 Days	
<ul style="list-style-type: none"> * Router Functionality * Router Tables * Static and Dynamic Routers * Dynamic Routing Standards * Network Address Translation (NAT) * Proxy Serving * Application Layer TCP/IP Protocols * FTP and Telnet 		

Course Topic	Proposed Time	Topic Reflection
Remote Connectivity	6 Days	
<ul style="list-style-type: none"> * Remote Connections Types * WAN Connectivity * Remote Access Overview 		

Course Topic	Proposed Time	Topic Reflection
Protecting a Network	5 Days	
<ul style="list-style-type: none"> * Firewalls * NAT * Packet Filtering * Encryption * Authentication 		