Information Technology Competency

Framework : Information Support Services and Networking

Quincy High School   **School Year: 2016**

Student Name: Michael Fernald

1	2	3	4	Strand : 1:Safety and Health Knowledge and Skills	
				Topic : A:Fundamentals of Health and Safety	
			x	VIT.VISSN.1.A.01	Define Health and Safety regulations.
			x	VIT.VISSN.1.A.01.01	Identify and apply Occupational Safety and Health Administration (OSHA) and other health and safety regulations that apply to specific tasks and jobs in the occupational area.
		x		VIT.VISSN.1.A.01.02	Identify and apply Environmental Protection Agency (EPA) and other environmental protection regulations that apply to specific tasks and jobs in the occupational area.
			x	VIT.VISSN.1.A.01.03	Identify and apply Right-To-Know (Hazard Communication Policy) and other communicative regulations that apply to specific tasks and jobs in the occupational area.
			x	VIT.VISSN.1.A.01.04	Explain procedures for documenting and reporting hazards to appropriate authorities.
			x	VIT.VISSN.1.A.01.05	List penalties for non-compliance with appropriate health and safety regulations.
			x	VIT.VISSN.1.A.01.06	Identify contact information for appropriate health and safety agencies and resources.
			x	VIT.VISSN.1.A.02	Demonstrate health and safety practices.
			x	VIT.VISSN.1.A.02.01	Identify, describe and demonstrate the effective use of Material Safety Data Sheets (MSDS).
		x		VIT.VISSN.1.A.02.02	Read chemical, product, and equipment labels to determine appropriate health and safety considerations.
			x	VIT.VISSN.1.A.02.03	Identify, describe and demonstrate personal, shop and job site safety practices and procedures.
			x	VIT.VISSN.1.A.02.04	Demonstrate safe dress and use of relevant safety gear and personal protective equipment (PPE), including (where appropriate) wrist rests, adjustable workspaces and equipment, gloves, boots, earplugs, eye protection, and breathing apparatus.
			x	VIT.VISSN.1.A.02.05	Demonstrate appropriate safe body mechanics, including proper lifting techniques and ergonomics.
			x	VIT.VISSN.1.A.02.06	Locate emergency equipment in your lab, shop, and classroom, including (where appropriate) eyewash stations, shower facilities, sinks, fire extinguishers, fire blankets, telephone, master power switches, and emergency exits.
			x	VIT.VISSN.1.A.02.07	Demonstrate the safe use, storage, and maintenance of every piece of equipment in the lab, shop, and classroom.
			x	VIT.VISSN.1.A.02.08	Describe safety practices and procedures to be followed when working with and around electricity.
			x	VIT.VISSN.1.A.02.09	Properly handle, store, dispose of, and recycle hazardous, flammable, and combustible materials.
			x	VIT.VISSN.1.A.02.10	Demonstrate proper workspace cleaning procedures.
			x	VIT.VISSN.1.A.03	Demonstrate responses to situations that threaten health and safety.
		x		VIT.VISSN.1.A.03.01	Describe First Aid procedures for potential injuries and other health concerns in the occupational area.

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			x	VIT.VISSN.1.A.03.02	Describe the importance of emergency preparedness and an emergency action plan.
		x		VIT.VISSN.1.A.03.03	Describe procedures used to handle emergency situations and accidents, including identification, reporting, response, evacuation plans, and follow-up procedures.
		x		VIT.VISSN.1.A.03.04	Identify practices used to avoid accidents.
			x	VIT.VISSN.1.A.03.05	Identify and describe fire protection, precautions and response procedures.
		x		VIT.VISSN.1.A.03.06	Discuss the role of the individual and the company/organization in ensuring workplace safety.
		x		VIT.VISSN.1.A.03.07	Discuss ways to identify and prevent workplace/school violence.
				Strand : 2:Technical Knowledge and Skills	
1	**2**	**3**	**4**	**Topic : A:Information Support Services Safety Knowledge and Operational Procedures**	
			x	VIT.VISSN.2.A.01	Demonstrate appropriate use of safety procedures and tools.
		x		VIT.VISSN.2.A.01.01	Explain the dangers of Electrostatic Discharge (ESD).
		x		VIT.VISSN.2.A.01.02	List the tools to protect against ESD.
	x			VIT.VISSN.2.A.01.03	Demonstrate appropriate use of ESD safety tools.
		x		VIT.VISSN.2.A.01.04	Implement personal safety and Occupational Safety and Health Administration (OSHA) guidelines.
	x			VIT.VISSN.2.A.02	Describe environmental impacts and the purpose of environmental controls.
	x			VIT.VISSN.2.A.02.01	Use Material Safety Data Sheet (MSDS) and manufacturer's recommendations for handling, protection and disposal of components and materials.
x				VIT.VISSN.2.A.02.02	Monitor temperature, humidity level awareness and proper ventilation.
	x			VIT.VISSN.2.A.02.03	Identify devices and procedures to protect against power surges, brownouts, blackouts.
x				VIT.VISSN.2.A.02.04	Demonstrate protection from airborne particles, dust and debris.
	x			VIT.VISSN.2.A.03	Practice proper communication and professionalism.
	x			VIT.VISSN.2.A.03.01	Use proper language - avoid jargon, acronyms, and slang when applicable.
		x		VIT.VISSN.2.A.03.02	Set and meet expectations/timeline and communicate status with the customer.
	x			VIT.VISSN.2.A.03.03	Deal appropriately with customers concerning attitude, cultural sensitivity, punctuality, difficult situations and confidential materials.
	x			VIT.VISSN.2.A.04	Describe fundamentals of dealing with prohibited content/activity.
x				VIT.VISSN.2.A.04.01	Outline steps of first response identification, reporting and data preservation.
	x			VIT.VISSN.2.A.04.02	Explain use of documentation/documentation changes.
		x		VIT.VISSN.2.A.04.03	Describe the chain of custody process with regards to managing evidence.
1	**2**	**3**	**4**	**Topic : B:Trends in the Information Technology Workplace and Society**	
	x			VIT.VISSN.2.B.01	Describe the evolution of technology.
	x			VIT.VISSN.2.B.01.01	Illustrate the information technology (IT) timeline (evolution).
		x		VIT.VISSN.2.B.01.02	Describe the impact of technologies on society.

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		x		VIT.VISSN.2.B.01.03	Identify technologies and describe their uses in the workplace and society.
	x			VIT.VISSN.2.B.01.04	Illustrate uses of interactive media in society/industry.
		x		VIT.VISSN.2.B.02	Describe the varied career paths in information technology.
		x		VIT.VISSN.2.B.02.01	Identify and list professional certifications.
		x		VIT.VISSN.2.B.02.02	Identify and describe the various IT career paths.
1	**2**	**3**	**4**	**Topic : C:Computer Hardware**	
	x			VIT.VISSN.2.C.01	Configure Basic Input Output System (BIOS) Settings.
	x			VIT.VISSN.2.C.01.01	Identify and configure BIOS Settings.
		x		VIT.VISSN.2.C.01.02	Install firmware upgrades.
		x		VIT.VISSN.2.C.01.03	Use built-in diagnostics and monitoring.
			x	VIT.VISSN.2.C.02	Describe motherboard components.
			x	VIT.VISSN.2.C.02.01	Identify and describe the purpose of all motherboard components (e.g., socket types, expansion slots, ports, bus speed, random access memory (RAM) slots, chipsets, connectors and jumpers).
		x		VIT.VISSN.2.C.02.02	Classify various form factors.
			x	VIT.VISSN.2.C.02.03	Install various motherboards in appropriate chassis.
			x	VIT.VISSN.2.C.03	Describe and install various random access memory (RAM) types.
		x		VIT.VISSN.2.C.03.01	Compare and contrast different RAM types.
		x		VIT.VISSN.2.C.03.02	Distinguish between RAM compatibility and speed.
		x		VIT.VISSN.2.C.03.03	Install and test various RAM types.
			x	VIT.VISSN.2.C.04	Install expansion cards.
		x		VIT.VISSN.2.C.04.01	Differentiate between different expansion card types.
		x		VIT.VISSN.2.C.04.02	Configure and install appropriate device drivers and software for optimal operation.
			x	VIT.VISSN.2.C.05	Install storage devices and media.
			x	VIT.VISSN.2.C.05.01	Identify storage devices, their connection types and cables.
			x	VIT.VISSN.2.C.05.02	Install and configure storage devices and media.
		x		VIT.VISSN.2.C.05.03	Demonstrate the appropriate use of media.
x				VIT.VISSN.2.C.05.04	Describe redundant array of independent disk (RAID) types.
	x			VIT.VISSN.2.C.06	Differentiate among various central processing unit (CPU) types and corresponding cooling devices.
x				VIT.VISSN.2.C.06.01	List types and features of CPUs and their socket types.
	x			VIT.VISSN.2.C.06.02	Choose appropriate CPU for various motherboards.
	x			VIT.VISSN.2.C.06.03	Install CPUs and appropriate coolers.
			x	VIT.VISSN.2.C.07	Install power supplies.
		x		VIT.VISSN.2.C.07.01	Determine power supply characteristics and specifications for types of voltage and power.
			x	VIT.VISSN.2.C.07.02	Select and install the proper power supply.
		x		VIT.VISSN.2.C.08	Develop customer specification and needs.
		x		VIT.VISSN.2.C.08.01	Evaluate customer needs.
			x	VIT.VISSN.2.C.08.02	Select appropriate components and software for a customer configuration (i.e., CAD workstation, audio/video editing pc, home server, gaming pc, thin client).
		x		VIT.VISSN.2.C.09	Evaluate characteristics of display devices.
		x		VIT.VISSN.2.C.09.01	Identify different types of display devices, their connection types and cables.

		x		VIT.VISSN.2.C.09.02	Define refresh rates, resolution, native resolution, brightness/lumens.
	x			VIT.VISSN.2.C.09.03	Explain the use of analog vs. digital, privacy/antiglare filters and multiple displays.
			x	VIT.VISSN.2.C.10	Set up peripheral devices.
		x		VIT.VISSN.2.C.10.01	Install and configure input, output and multimedia devices.
1	**2**	**3**	**4**	**Topic : D:Laptops**	
		x		VIT.VISSN.2.D.01	Configure laptop hardware and components.
	x			VIT.VISSN.2.D.01.01	List and characterize expansion options.
		x		VIT.VISSN.2.D.01.02	Install and configure hardware/device replacement components.
	x			VIT.VISSN.2.D.01.03	Compare and contrast laptop display components including WIFI antenna, inverter and backlight.
	x			VIT.VISSN.2.D.02	Compare and contrast laptop features.
		x		VIT.VISSN.2.D.02.01	Identify special function keys, physical laptop lock and cable lock.
x				VIT.VISSN.2.D.02.02	Compare and contrast laptop docking station vs. port replicator.
1	**2**	**3**	**4**	**Topic : E:Printers**	
		x		VIT.VISSN.2.E.01	Summarize printer types, installation and maintenance.
	x			VIT.VISSN.2.E.01.01	Explain the differences between the various printer types.
	x			VIT.VISSN.2.E.01.02	Summarize the associated imaging process for each type of printer.
	x			VIT.VISSN.2.E.01.03	Install and configure various printers with appropriate cables and printer drivers.
		x		VIT.VISSN.2.E.01.04	Perform printer maintenance.
1	**2**	**3**	**4**	**Topic : F:Desktop Operating Systems**	
	x			VIT.VISSN.2.F.01	Explain features and requirements of popular Desktop Operating Systems.
		x		VIT.VISSN.2.F.01.01	Compare and contrast current Operating Systems (OS) and their features.
		x		VIT.VISSN.2.F.01.02	Select the appropriate OS for a 32-bit or 64-bit environment.
	x			VIT.VISSN.2.F.01.03	Illustrate operating system upgrade paths.
		x		VIT.VISSN.2.F.02	Install and configure Operating Systems using the most appropriate method.
			x	VIT.VISSN.2.F.02.01	Identify boot methods.
			x	VIT.VISSN.2.F.02.02	Differentiate among available OS installation methods.
			x	VIT.VISSN.2.F.02.03	Partition the hard drive.
			x	VIT.VISSN.2.F.02.04	Format a hard drive using the appropriate file system.
		x		VIT.VISSN.2.F.02.05	Select suitable setting for operating system customization.
			x	VIT.VISSN.2.F.02.06	Install drivers, software and OS updates.
			x	VIT.VISSN.2.F.03	Utilize appropriate operating system features and tools.
			x	VIT.VISSN.2.F.03.01	Demonstrate the use of built in operating system features and tools (administrative, disk management, run line commands) and how to access through appropriate paths.
			x	VIT.VISSN.2.F.03.02	Explore different utilities within control panel/system tools/system settings.
		x		VIT.VISSN.2.F.03.03	Configure local network settings.
		x		VIT.VISSN.2.F.03.04	Use OS command line tools.
	x			VIT.VISSN.2.F.04	Perform preventive maintenance procedures using appropriate tools.

	x			VIT.VISSN.2.F.04.01	Implement best practices (schedule backups, check disks, defrag, updates, patch management, driver/firmware updates and antivirus updates).
		x		VIT.VISSN.2.F.04.02	Utilize tools for backup, system restore, check disk, recovery image, and defrag.
	x			VIT.VISSN.2.F.05	Explain the differences among basic OS security settings.
			x	VIT.VISSN.2.F.05.01	Create users and groups.
	x			VIT.VISSN.2.F.05.02	Compare new technology file system (NTFS) vs. share permissions.
			x	VIT.VISSN.2.F.05.03	Share files and folders.
		x		VIT.VISSN.2.F.05.04	Identify system files and folders.
	x			VIT.VISSN.2.F.05.05	Explain the process of local user authentication.
	x			VIT.VISSN.2.F.06	Explain the basics of client-side virtualization.
	x			VIT.VISSN.2.F.06.01	Discuss the purpose of virtual machines.
x				VIT.VISSN.2.F.06.02	Assess virtual client requirements.
x				VIT.VISSN.2.F.06.03	Define virtual machine managers (e.g., Hypervisor).
1	2	3	4	**Topic : G:Security**	
		x		VIT.VISSN.2.G.01	Describe common prevention methods.
		x		VIT.VISSN.2.G.01.01	Describe physical and digital security techniques.
	x			VIT.VISSN.2.G.01.02	Explain user education and the principle of least privilege.
		x		VIT.VISSN.2.G.02	Compare and contrast common security threats.
	x			VIT.VISSN.2.G.02.01	Differentiate between social engineering, malware, rootkits, phishing, shoulder surfing, spyware and viruses.
		x		VIT.VISSN.2.G.03	Implement best practices to secure a workstation.
		x		VIT.VISSN.2.G.03.01	Create a strong password policy.
	x			VIT.VISSN.2.G.03.02	Change or disable default user names, accounts and auto-run.
x				VIT.VISSN.2.G.04	Describe appropriate data destruction/disposal methods.
x				VIT.VISSN.2.G.04.01	Compare low level format vs. standard format.
x				VIT.VISSN.2.G.04.02	Explain hard drive sanitation methods and physical destruction.
x				VIT.VISSN.2.G.05	Evaluate the methods of network access security.
x				VIT.VISSN.2.G.05.01	Summarize the purpose of access control lists (ACLs), port filtering, tunneling and encryption.
x				VIT.VISSN.2.G.05.02	Describe site-to-site, client-to-site, and remote access methods.
x				VIT.VISSN.2.G.06	Explain current network user authentication methods.
	x			VIT.VISSN.2.G.06.01	Test network client authentication.
		x		VIT.VISSN.2.G.07	Explain common threats, vulnerabilities, and mitigation techniques.
		x		VIT.VISSN.2.G.07.01	Define common threats and attacks.
	x			VIT.VISSN.2.G.07.02	Examine mitigation techniques.
	x			VIT.VISSN.2.G.08	Review firewall options.
	x			VIT.VISSN.2.G.08.01	Differentiate among the types of firewalls.
x				VIT.VISSN.2.G.08.02	Describe implementation of firewall rules.
x				VIT.VISSN.2.G.08.03	Define key tools such as port security, network address translation (NAT)/PAT, demilitarized zone (DMZ).
x				VIT.VISSN.2.G.08.04	Compare stateful inspection vs. packet filtering.
	x			VIT.VISSN.2.G.08.05	Plan and install a firewall solution.

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x				VIT.VISSN.2.G.09	Categorize different types of network security appliances and methods.
x				VIT.VISSN.2.G.09.01	Explain the function of intrusion detection system (IDS), intrusion prevention system (IPS) and Vulnerability Scanners.
1	**2**	**3**	**4**	**Topic : H:Mobile Devices**	
		x		VIT.VISSN.2.H.01	Explain the basic features of mobile operating systems.
		x		VIT.VISSN.2.H.01.01	Compare and contrast current mobile Operating Systems and their features.
		x		VIT.VISSN.2.H.02	Establish basic network connectivity and configure email.
			x	VIT.VISSN.2.H.02.01	Configure wireless, cellular, Bluetooth connectivity.
			x	VIT.VISSN.2.H.02.02	Configure an email application.
			x	VIT.VISSN.2.H.03	Secure mobile devices.
		x		VIT.VISSN.2.H.03.01	Define and describe pass code locks, remote wipes, locator applications, remote backup applications, failed login attempts restrictions.
			x	VIT.VISSN.2.H.03.02	Distinguish among appropriate antivirus applications and available OS updates and patches.
			x	VIT.VISSN.2.H.03.03	Install and update mobile OS software.
		x		VIT.VISSN.2.H.04	Compare and contrast hardware differences in regards to tablets and laptops.
	x			VIT.VISSN.2.H.04.01	Identify power consumption optimization techniques.
x				VIT.VISSN.2.H.04.02	Demonstrate proper handling, cleaning and docking of tablets and laptops.
	x			VIT.VISSN.2.H.05	Execute and configure mobile device synchronization.
	x			VIT.VISSN.2.H.05.01	Explain the types and requirements of mobile data synchronization methods.
		x		VIT.VISSN.2.H.05.02	Synchronize mobile devices.
1	**2**	**3**	**4**	**Topic : I:Networking Concepts**	
	x			VIT.VISSN.2.I.01	Compare the layers of the Open Systems Interconnection (OSI) and Transmission Control Protocol/Internet Protocol (TCP/IP) models.
	x			VIT.VISSN.2.I.01.01	Define the purpose of networking models.
	x			VIT.VISSN.2.I.01.02	Identify the layers of the OSI model.
	x			VIT.VISSN.2.I.01.03	Identify the layers of the TCP/IP model (i.e., Network Interface Layer, Internet Layer, Transport Layer, and Application Layer).
	x			VIT.VISSN.2.I.02	Apply the OSI model.
	x			VIT.VISSN.2.I.02.01	Classify the differences between Layer 1, Layer 2, and Layer 3 applications, devices, and protocols as they relate to the OSI model layers.
		x		VIT.VISSN.2.I.03	Explain the purpose and properties of IP Addressing.
			x	VIT.VISSN.2.I.03.01	Identify the Classes of addresses.
		x		VIT.VISSN.2.I.03.02	Describe Classless Inter-Domain Routing (CIDR).
		x		VIT.VISSN.2.I.03.03	Describe the differences between Internet Protocol version 4 (IPv4) vs. Internet Protocol version 6 (IPv6).
	x			VIT.VISSN.2.I.03.04	Distinguish differences between static and dynamic addressing.
		x		VIT.VISSN.2.I.03.05	Distinguish differences between public and private addressing.
x				VIT.VISSN.2.I.03.06	Explain the components of the TCP/IP protocol including IP, subnet mask and default gateway.
		x		VIT.VISSN.2.I.03.07	Describe and prepare a subnet.
		x		VIT.VISSN.2.I.03.08	Differentiate among multicast, unicast and broadcast.

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	x			VIT.VISSN.2.I.03.09	Detect Automatic Private IP Addressing (APIPA).
	x			VIT.VISSN.2.I.04	Explain Dynamic Host Configuration Protocol (DHCP) concepts, describe its components and configure DHCP service.
	x			VIT.VISSN.2.I.04.01	Explain DHCP client and server side elements (reservations, scopes, leases).
x				VIT.VISSN.2.I.04.02	Configure DHCP service.
	x			VIT.VISSN.2.I.05	Explain Domain Name System (DNS) concepts, describe its components and install DNS servers.
	x			VIT.VISSN.2.I.05.01	Evaluate DNS servers, DNS records and Dynamic DNS.
	x			VIT.VISSN.2.I.05.02	Explain client side DNS.
	x			VIT.VISSN.2.I.06	Explain the function of common networking protocols, associated port numbers and their purpose.
	x			VIT.VISSN.2.I.06.01	Identify common Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) default ports.
	x			VIT.VISSN.2.I.06.02	Define common network protocols.
	x			VIT.VISSN.2.I.07	Explain the purpose and properties of routing and switching.
	x			VIT.VISSN.2.I.07.01	Differentiate between Interior Gateway Protocol (IGP) and Exterior Gateway Protocol (EGP).
	x			VIT.VISSN.2.I.07.02	Compare routing protocols (i.e., link state vs. distance vector vs. hybrid, static vs. dynamic, routing metrics, next hop).
	x			VIT.VISSN.2.I.07.03	Explain Spanning-Tree Protocol, Virtual Local Area Network (VLAN) and port mirroring and convergence (steady state) concepts.
	x			VIT.VISSN.2.I.07.04	Distinguish between a broadcast domain and a collision domain.
	x			VIT.VISSN.2.I.07.05	State the function of routing and switching tables.
	x			VIT.VISSN.2.I.08	Identify and describe virtual network components.
	x			VIT.VISSN.2.I.08.01	Identify and describe virtual switches, virtual desktops, virtual servers, virtual private branch exchange (PBX).
	x			VIT.VISSN.2.I.08.02	Compare onsite vs. offsite virtualization.
	x			VIT.VISSN.2.I.08.03	Install a virtual network.
	x			VIT.VISSN.2.I.09	Compare and contrast wireless networking standards and encryption types.
	x			VIT.VISSN.2.I.09.01	Categorize wireless standards 802.11 a/b/g/n speeds, distances and frequencies.
	x			VIT.VISSN.2.I.09.02	Describe various wireless encryption types.
1	2	3	4	**Topic : J:Network Media and Topologies**	
		x		VIT.VISSN.2.J.01	Describe the characteristics of network cables and associated connectors; prepare and install network cabling.
		x		VIT.VISSN.2.J.01.01	Identify fiber cable and connector types.
		x		VIT.VISSN.2.J.01.02	Identify copper cable types (Twisted Pair and Coaxial) and associated connector types.
		x		VIT.VISSN.2.J.01.03	Compare the speed and transmission limitations of various network cables.
		x		VIT.VISSN.2.J.01.04	Describe plenum and non-plenum ratings and the use of broadband over power lines.
			x	VIT.VISSN.2.J.01.05	Install and terminate network cabling.
		x		VIT.VISSN.2.J.02	Identify components of wiring distribution and management.
x				VIT.VISSN.2.J.02.01	Define and describe IDF, MDF, Demarc and CSU/DSU.
		x		VIT.VISSN.2.J.02.02	Explain the purpose of cable management.
		x		VIT.VISSN.2.J.02.03	Explain the value of network maps and documented wiring schematics.

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	x			VIT.VISSN.2.J.03	Compare and contrast internet connection types and features.
	x			VIT.VISSN.2.J.03.01	Identify properties of common SOHO Internet connection types (Cable, DSL, Dial-up, Fiber, and Satellite).
x				VIT.VISSN.2.J.03.02	Identify properties of typical business Internet connection types (ISDN, Frame Relay, ATM, T1, T3, DS3, Sonnet Ocx).
		x		VIT.VISSN.2.J.03.03	Differentiate among wireless Internet connection types (Cellular/mobile hot spot, line of sight wireless internet service, WiMAX).
			x	VIT.VISSN.2.J.04	Categorize various network types and topologies.
			x	VIT.VISSN.2.J.04.01	Differentiate among LAN, WAN, PAN, MAN, WLAN, and WWAN.
		x		VIT.VISSN.2.J.04.02	Explain the Ethernet 802.3 standards.
	x			VIT.VISSN.2.J.04.03	Describe CSMA/CD and CSMA/CA.
		x		VIT.VISSN.2.J.04.04	Compare and contrast physical vs. logical topologies.
		x		VIT.VISSN.2.J.04.05	Describe ring, bus, star, extended star and mesh topologies.
		x		VIT.VISSN.2.J.04.06	Describe Peer-to-peer, Client-server, Hybrid, Point to point, Point to multipoint and MPLS topologies.
	x			VIT.VISSN.2.J.05	Compare and contrast network devices, their functions and their features.
		x		VIT.VISSN.2.J.05.01	Differentiate the functionality of hubs, switches, bridges, routers, access points, and modems.
	x			VIT.VISSN.2.J.05.02	Explain the function of firewalls, network access server (NAS) and Voice over Internet Protocol (VoIP) phones.
1	**2**	**3**	**4**	**Topic : K:Network Installation and Configuration**	
		x		VIT.VISSN.2.K.01	Install and configure network operating systems.
		x		VIT.VISSN.2.K.01.01	Identify common network operating systems.
		x		VIT.VISSN.2.K.01.02	Install a network operating system.
	x			VIT.VISSN.2.K.01.03	Configure a server.
x				VIT.VISSN.2.K.02	Plan a basic SOHO network.
	x			VIT.VISSN.2.K.02.01	Create a list of hardware, software and infrastructure requirements for implementation.
x				VIT.VISSN.2.K.02.02	Review environment and equipment limitations and system compatibility requirements.
	x			VIT.VISSN.2.K.02.03	Determine equipment placement.
	x			VIT.VISSN.2.K.02.04	Illustrate the network.
x				VIT.VISSN.2.K.03	Install, configure, and deploy a secure SOHO wireless/wired network using best practices.
x				VIT.VISSN.2.K.03.01	Access and configure wireless/wired ISR for a basic SOHO network.
	x			VIT.VISSN.2.K.03.02	Configure options for MAC filtering, port forwarding/triggering, Service Set Identifier (SSID) broadcast, and wireless encryption.
x				VIT.VISSN.2.K.03.03	Enable/disable services such as firewall, DHCP, DMZ, NAT, & WPS.
x				VIT.VISSN.2.K.03.04	Disable unused ports.
1	**2**	**3**	**4**	**Topic : L:Network Management**	
x				VIT.VISSN.2.L.01	Identify components of network management.
x				VIT.VISSN.2.L.01.01	Explain the purpose and features of various network appliances.
x				VIT.VISSN.2.L.01.02	Explain the different methods and rationales for network performance optimization.

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1	2	3	4		
x				VIT.VISSN.2.L.01.03	Explain the purpose of network monitoring resources to analyze traffic.
x				VIT.VISSN.2.L.01.04	Describe the purpose and benefit of configuration management documentation.
1	**2**	**3**	**4**	**Topic : M:Troubleshooting**	
x				VIT.VISSN.2.M.01	Explain the troubleshooting theory.
	x			VIT.VISSN.2.M.01.01	Identify the IT related problem.
	x			VIT.VISSN.2.M.01.02	Establish a theory of probable cause (question the obvious) using common symptoms.
		x		VIT.VISSN.2.M.01.03	Test the theory to determine cause using diagnostic tools.
		x		VIT.VISSN.2.M.01.04	Establish a plan of action to resolve the problem and implement the solution.
		x		VIT.VISSN.2.M.01.05	Verify full system functionality and, if applicable, implement preventive measures.
	x			VIT.VISSN.2.M.01.06	Document findings, actions and outcomes.
		x		VIT.VISSN.2.M.02	Troubleshoot common problems related to motherboards, RAM, CPU and power with appropriate tools.
x				VIT.VISSN.2.M.03	Troubleshoot hard drives and RAID arrays with appropriate tools.
	x			VIT.VISSN.2.M.04	Troubleshoot common video and display issues.
		x		VIT.VISSN.2.M.05	Troubleshoot operating system problems with appropriate tools.
		x		VIT.VISSN.2.M.06	Troubleshoot common local computer security issues with appropriate tools and best practices.
		x		VIT.VISSN.2.M.07	Troubleshoot and repair common laptop issues while adhering to the appropriate procedures.
x				VIT.VISSN.2.M.08	Troubleshoot printers with appropriate tools.
		x		VIT.VISSN.2.M.09	Troubleshoot wired and wireless networks with appropriate tools.
	x			VIT.VISSN.2.M.10	Troubleshoot common physical connectivity problems.
		x		VIT.VISSN.2.M.11	Identify and correct IP addressing issues.
x				VIT.VISSN.2.M.12	Select appropriate hardware tools to troubleshoot connectivity issues.
x				VIT.VISSN.2.M.13	Select appropriate software tools to troubleshoot connectivity issues.
x				VIT.VISSN.2.M.13.01	Install software and hardware tools, protocol analyzer, throughput testers and connectivity software.
x				VIT.VISSN.2.M.13.02	Demonstrate common troubleshooting command line tools (Ping, Tracert/traceroute, Dig, Ipconfig/Nslookup, ArpNbtstat, Netstat).
1	**2**	**3**	**4**	**Topic : N:Applications**	
x				VIT.VISSN.2.N.01	Identify the function of various local and network applications.
x				VIT.VISSN.2.N.01.01	Categorize applications by type and use.
	x			VIT.VISSN.2.N.02	Install applications.
	x			VIT.VISSN.2.N.02.01	Install, configure and test local and network applications.
	x			VIT.VISSN.2.N.02.02	Install, configure and test internet browser packages.
		x		VIT.VISSN.2.N.02.03	Uninstall applications.
	x			VIT.VISSN.2.N.02.04	Acquire and verify software licensure.
			x	VIT.VISSN.2.N.02.05	Identify steps to perform an upgrade and determine compatibility issues.

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1	2	3	4		
			x	VIT.VISSN.2.N.02.06	Retrieve, install and test application patches, updates and service packs.
1	**2**	**3**	**4**	**Topic : O:Multimedia and Graphic Tools**	
		x		VIT.VISSN.2.O.01	Utilize multimedia and graphic tools.
	x			VIT.VISSN.2.O.01.01	Describe various interactive media tools.
	x			VIT.VISSN.2.O.01.02	Create and manipulate images using a graphic drawing/editing program.
x				VIT.VISSN.2.O.01.03	Import and export graphics using external peripherals.
x				VIT.VISSN.2.O.01.04	Differentiate between digital image, audio and video file formats.
		x		VIT.VISSN.2.O.01.05	Open, run and create video clips.
			x	VIT.VISSN.2.O.01.06	Play and record sound clips.
1	**2**	**3**	**4**	**Topic : P:Programming Concepts**	
x				VIT.VISSN.2.P.01	Explain the purpose and functions of computer programming.
	x			VIT.VISSN.2.P.01.01	Describe what a computer program is and how it runs.
x				VIT.VISSN.2.P.01.02	Identify and list various types of current programming languages.
x				VIT.VISSN.2.P.01.03	Explain the steps in a program life cycle.
x				VIT.VISSN.2.P.01.04	Design a simple program for a specific application.
x				VIT.VISSN.2.P.01.05	Create, test functionality, debug and document a simple computer program.
x				VIT.VISSN.2.P.01.06	Describe and apply database concepts.
x				VIT.VISSN.2.P.01.07	Give examples of database queries and data reports.
x				VIT.VISSN.2.P.01.08	Create a custom database.
1	**2**	**3**	**4**	**Topic : Q:Web Page Development**	
	x			VIT.VISSN.2.Q.01	Explain the fundamentals of web page development.
	x			VIT.VISSN.2.Q.01.01	Describe the methods of creating web sites.
	x			VIT.VISSN.2.Q.01.02	Apply structural requirements (information architecture) for development of a web site.
	x			VIT.VISSN.2.Q.01.03	Create a web site, using web site design software or programming language.
	x			VIT.VISSN.2.Q.01.04	Apply web site design features.
	x			VIT.VISSN.2.Q.01.05	Create hyperlinks.
	x			VIT.VISSN.2.Q.01.06	Proofread, edit and test a web site.
	x			VIT.VISSN.2.Q.01.07	Explain and demonstrate publishing, updating and maintaining a web site.
	x			VIT.VISSN.2.Q.01.08	Describe methods for achieving web site recognition.
	x			VIT.VISSN.2.Q.01.09	Critique a web site according to accepted web site design principles.
1	**2**	**3**	**4**	**Topic : R:**Advanced** Advanced Routing and Switching**	
	x			VIT.VISSN.2.R.01	**Advanced** Implement a switched network.
	x			VIT.VISSN.2.R.01.01	**Advanced** Select the appropriate media, cables, ports, and connectors to connect switches to other network devices and hosts.
x				VIT.VISSN.2.R.01.02	**Advanced** Explain the technology and media access control method for Ethernet technologies.
	x			VIT.VISSN.2.R.01.03	**Advanced** Explain network segmentation and basic traffic management concepts.
x				VIT.VISSN.2.R.01.04	**Advanced** Explain the operation of network switches and basic switching concepts.

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x				VIT.VISSN.2.R.01.05	**Advanced** Perform, save and verify initial switch configuration tasks including remote access management.
x				VIT.VISSN.2.R.01.06	**Advanced** Verify network status and switch operation using basic utilities (including: ping, traceroute, telnet, SSH, arp, ipconfig), SHOW & DEBUG commands.
	x			VIT.VISSN.2.R.01.07	**Advanced** Implement and verify basic security for a switch (port security, deactivate ports).
x				VIT.VISSN.2.R.01.08	**Advanced** Identify, prescribe, and resolve common switched network media issues, configuration issues, auto-negotiation, and switch hardware failures.
	x			VIT.VISSN.2.R.02	**Advanced** Implement a routed network.
	x			VIT.VISSN.2.R.02.01	**Advanced** Describe basic routing concepts (including: packet forwarding, router lookup process).
	x			VIT.VISSN.2.R.02.02	**Advanced** Describe the operation of routers (including: router bootup process, POST, router components).
x				VIT.VISSN.2.R.02.03	**Advanced** Select the appropriate media, cables, ports, and connectors to connect routers to other network devices and hosts.
x				VIT.VISSN.2.R.02.04	**Advanced** Configure, verify, and troubleshoot RIPv2.
x				VIT.VISSN.2.R.02.05	**Advanced** Access and utilize the router command line interface (CLI) to set basic parameters.
x				VIT.VISSN.2.R.02.06	**Advanced** Connect, configure, and verify operation status of a device interface.
x				VIT.VISSN.2.R.02.07	**Advanced** Enable NAT for a small network with a single ISP and connection using SDM and verify operation using CLI and ping.
x				VIT.VISSN.2.R.02.08	**Advanced** Configure, verify and troubleshoot DHCP and DNS operation on a router (including: CLI/SDM).
x				VIT.VISSN.2.R.02.09	**Advanced** Perform and verify routing configuration tasks for a static or default route given specific routing requirements.
x				VIT.VISSN.2.R.02.10	**Advanced** Verify device configuration and network connectivity using common utilities.
x				VIT.VISSN.2.R.02.11	**Advanced** Manage router operating system configuration files (including save, edit, upgrade, restore).
x				VIT.VISSN.2.R.02.12	**Advanced** Implement password and physical security for a network router.
x				VIT.VISSN.2.R.02.13	**Advanced** Verify network status and router operation using basic utilities (including: ping, traceroute, telnet, SSH, arp, ipconfig), SHOW & DEBUG commands.
x				VIT.VISSN.2.R.03	**Advanced** Implement and verify WAN links.
x				VIT.VISSN.2.R.03.01	**Advanced** Describe different methods for connecting to a WAN.
x				VIT.VISSN.2.R.03.02	**Advanced** Configure and verify a basic WAN serial connection.
1	2	3	4	Topic : S:**Advanced** Server Management	
		x		VIT.VISSN.2.S.01	**Advanced** Install and manage servers.
		x		VIT.VISSN.2.S.01.01	**Advanced** Manage device drivers, including but not limited to, installation; removal; disabling; update/upgrade; rollback; troubleshooting; Plug & Play; IRQ; interrupts; driver signing.
	x			VIT.VISSN.2.S.01.02	**Advanced** Manage services including, but not limited to, what services are; which state a service can be in; startup types; recovery options; delayed startup; Run As settings for a service; stopping or pausing a service; service accounts, dependencies.

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1	2	3	4	Code	Description
	x			VIT.VISSN.2.S.01.03	**Advanced** Perform various server installations, including but not limited to, choosing correct OS version; partitioning; F8 options; server core vs. full; interactive install; unattended install; automated install using WDS; upgrade vs. clean install; firmware updates including BIOS
		x		VIT.VISSN.2.S.02	**Advanced** Implement server roles.
		x		VIT.VISSN.2.S.02.01	**Advanced** Prepare various types of application servers including, but not limited to, mail servers; database servers; collaboration servers; monitoring servers; threat management.
	x			VIT.VISSN.2.S.02.02	**Advanced** Configure web services, including but not limited to, IIS, WWW, FTP, separate worker processes, adding components, sites, ports, SSL and certificates.
	x			VIT.VISSN.2.S.02.03	**Advanced** Utilize remote access, including but not limited to, remote assistance, remote administration tools, remote desktop services, licensing, remote desktop gateway, VPN, application virtualization, multiple ports.
		x		VIT.VISSN.2.S.02.04	**Advanced** Configure file and print services, including but not limited to, printer pools; web printing; web management; driver deployment; file, folder and share permissions vs. rights; auditing; print job management.
x				VIT.VISSN.2.S.02.05	**Advanced** Describe server virtualization modes; VHDs; virtual memory; virtual networks; snapshots and saved states; physical to virtual; virtual to physical.
	x			VIT.VISSN.2.S.03	**Advanced** Manage active directory.
		x		VIT.VISSN.2.S.03.01	**Advanced** Create accounts and groups.
	x			VIT.VISSN.2.S.03.02	**Advanced** Structure organizational units and containers.
	x			VIT.VISSN.2.S.03.03	**Advanced** Describe active directory infrastructure including but not limited to domain controllers, forests, operation master roles, domain vs. workgroup, child domains, trusts, functional levels, namespace, sites, and replication.
	x			VIT.VISSN.2.S.03.04	**Advanced** Implement group policy.
		x		VIT.VISSN.2.S.04	**Advanced** Identify storage technologies.
x				VIT.VISSN.2.S.04.01	**Advanced** Indicate advantages and disadvantages of different storage technologies; local (SATA, SCSI, IDE); NAS; SAN; fiber channel; iSCSI; NFS; FC HBA and FC switches; iSCSI hardware.
x				VIT.VISSN.2.S.04.02	**Advanced** Classify RAID (RAID 0, RAID 1, RAID 5, RAID 10 and combinations; hardware and software RAID).
	x			VIT.VISSN.2.S.04.03	**Advanced** Identify disk types (ATA; basic disk; dynamic disk; mount points; file systems; mounting a virtual hard disk; distributed file systems; optical disks).
	x			VIT.VISSN.2.S.05	**Advanced** Manage server performance.
	x			VIT.VISSN.2.S.05.01	**Advanced** Distinguish among major server hardware components.
x				VIT.VISSN.2.S.05.02	**Advanced** Explain performance monitoring (methodology; procedures; effect of network, CPU memory and disk; creating a baseline; perfmon; resmon; task manager; performance counters).
x				VIT.VISSN.2.S.05.03	**Advanced** Explain logs and alerts.
		x		VIT.VISSN.2.S.06	**Advanced** Perform server maintenance.
	x			VIT.VISSN.2.S.06.01	**Advanced** Identify the steps in the server startup process.
	x			VIT.VISSN.2.S.06.02	**Advanced** Explain the value of business continuity (i.e., backup and restore, disaster recovery and data redundancy).

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1	2	3	4		
		x		VIT.VISSN.2.S.06.03	**Advanced** Manage server updates.
				Strand : 4:Employability Knowledge and Skills	
1	**2**	**3**	**4**	**Topic : A:Employability Knowledge and Skills**	
			x	VIT.VISSN.4.A.01	Develop a career plan and portfolio.
		x		VIT.VISSN.4.A.01.01	Develop and revise career plan annually based on workplace awareness and skill attainment.
		x		VIT.VISSN.4.A.01.02	Assess interest areas to determine potential career pathways, including career ladders.
		x		VIT.VISSN.4.A.01.03	Develop a career plan with alternatives.
			x	VIT.VISSN.4.A.01.04	Complete job applications and related employment documents (e.g. W-4).
			x	VIT.VISSN.4.A.01.05	Identify training and education requirements that lead to employment in chosen field(s) and demonstrate skills related to evaluating employment opportunities.
			x	VIT.VISSN.4.A.01.06	Apply job search skills to seek, evaluate, apply for, and accept employment.
		x		VIT.VISSN.4.A.01.07	Demonstrate good interviewing skills.
			x	VIT.VISSN.4.A.01.08	Demonstrate employability skills needed to get and keep a job.
			x	VIT.VISSN.4.A.01.09	Assess alternative occupational choices (e.g. working conditions, benefits, and opportunities to change).
		x		VIT.VISSN.4.A.02	Communicate in multiple modes to address needs within the career and technical field.
			x	VIT.VISSN.4.A.02.01	Conduct a job search and complete written and electronic job applications, resumes, cover letters and related correspondence for a chosen career path.
			x	VIT.VISSN.4.A.02.02	Explore and evaluate postsecondary job opportunities and career pathways specific to career technical areas.
			x	VIT.VISSN.4.A.02.03	Locate information from books, journals, magazines, and the Internet.
			x	VIT.VISSN.4.A.02.04	Demonstrate ability to use social media and networking to develop useful occupational contacts, job seeking and career development opportunities.
		x		VIT.VISSN.4.A.03	Demonstrate all phases of the job interview process.
			x	VIT.VISSN.4.A.03.01	Gather relevant information about potential employer(s) from multiple print and digital sources, assessing the credibility and accuracy of each source.
			x	VIT.VISSN.4.A.03.02	Identify employment eligibility criteria, such as drug/alcohol free status, clean driving record, etc.
		x		VIT.VISSN.4.A.03.03	Practice effective interviewing skills: appearance, inquiry and dialogue with interviewer, positive attitude and evidence of work ethic and skills.
		x		VIT.VISSN.4.A.03.04	Explain strategies used to formulate ideas, proposals and solutions to problems.
	x			VIT.VISSN.4.A.03.05	Select potential solutions based on reasoned criteria.
		x		VIT.VISSN.4.A.03.06	Implement and evaluate solution(s).
			x	VIT.VISSN.4.A.04	Demonstrate positive work behaviors.
			x	VIT.VISSN.4.A.04.01	Identify time management and task prioritization skills.
			x	VIT.VISSN.4.A.04.02	Explain the importance of following workplace etiquette/protocol.
		x		VIT.VISSN.4.A.04.03	Demonstrate willingness to learn and further develop skills.
		x		VIT.VISSN.4.A.04.04	Demonstrate self-management skills.

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		x		VIT.VISSN.4.A.04.05	List causes of stress and effective stress management techniques.
			x	VIT.VISSN.4.A.04.06	Describe the importance of having a positive attitude and techniques that boost morale.
			x	VIT.VISSN.4.A.04.07	Show initiative by coming up with unique solutions and taking on extra responsibilities.
			x	VIT.VISSN.4.A.04.08	Explain the importance of setting goals and demonstrate the ability to set, reach, and evaluate goals.
			x	VIT.VISSN.4.A.04.09	Explain the importance of taking pride in work accomplished and extrinsic and intrinsic motivators that can be used to increase pride.
		x		VIT.VISSN.4.A.04.10	Value the importance of professionalism, including reliability, honesty, responsibility, and ethics.
		x		VIT.VISSN.4.A.04.11	Demonstrate a respect for diversity and its benefit to the workplace.
1	2	3	4	Topic : B Communication in the Workplace	
		x		4.B.01.01	Communicate effectively using the language and vocabulary appropriate to a variety of audiences within the workplace including coworkers, supervisors and customers.
			x	4.B.01.02	Read technical and work-related documents and demonstrate understanding in oral discussion and written exercise.
		x		4.B.01.03	Demonstrate professional writing skills in work-related materials and communications (e.g., letters, memoranda, instructions and directions, reports, summaries, notes and/or outlines).
		x		4.B.01.04	Use a variety of writing/publishing/presentation applications to create and present information in the workplace.
		x		4.B.01.05	Identify, locate, evaluate and use print and electronic resources to resolve issues or problems in the workplace.
		x		4.B.01.06	Use a variety of financial and data analysis tools to analyze and interpret information in the workplace.
		x		4.B.01.07	Orally present technical and work-related information to a variety of audiences.
			x	4.B.01.08	Identify and demonstrate professional non-verbal communication.
			x	4.B.02	Demonstrate active listening skills.
			x	4.B.02.01	Listen attentively and respectfully to others.
			x	4.B.02.02	Focus attentively, make eye contact or other affirming gestures, confirm understanding and follow directions.
		x		4.B.02.03	Show initiative in improving communication skills by asking follow-up questions of speaker in order to confirm understanding.
1	2	3	4	Topic: C : Work Ethic and Professionalism	
			x	4.C.01	Demonstrate attendance and punctuality.
			x	4.C.02	Demonstrate proper workplace appearance.
			x	4.C.02.01	Identify and practice professional appearance specific to the workplace.
			x	4.C.02.02	Identify and practice personal hygiene appropriate for duties specific to the workplace.
		x		4.C.02.03	Identify and wear required safety gear specific to the workplace.
			x	4.C.03	Accepts direction and constructive criticism.

			x	4.C.03.01	Demonstrate ability (both verbally and non-verbally) to accept direction and constructive criticism and to implement solutions to change behaviors.
			x	4.A.03.02	Ask appropriate questions to clarify understanding of feedback.
		x		4.C.03.03	Analyze own learning style and seek instructions in a preferred format that works best for their understanding (such as oral, written or visual instruction).
		x		4.C.04	Demonstrate motivation and initiative.
		x		4.C.04.01	Evaluate assigned tasks for time to completion and prioritization.
		x		4.C.04.02	Demonstrate motivation through enthusiasm, engagement, accurate completion of tasks and activities.
	x			4.C.04.03	Demonstrate initiative by requesting new assignments and challenges.
		x		4.C.04.04	Explain proposed solutions to challenges observed in the workplace.
		x		4.C.04.05	Demonstrate the ability to evaluate multiple solutions to problems and challenges using critical reasoning and workplace/industry knowledge and select the best solution to the problem.
		x		4.C.04.06	Implement solution(s) to challenges and/or problem(s) observed in the workplace.
		x		4.C.04.07	See projects through completion and check work for quality and accuracy.
			x	4.C.05	Demonstrate awareness of workplace culture and policy.
			x	4.C.05.01	Display ethical behavior in use of time, resources, computers and information.
			x	4.C.05.02	Identify the mission of the organization and/or department.
			x	4.C.05.03	Explain the benefits of a diverse workplace.
			x	4.C.05.04	Demonstrate a respect for diversity and its benefit to the workplace.
		x		4.C.06	Interact appropriately with coworkers.
		x		4.C.06.01	Work productively with individuals and in teams.
			x	4.C.06.02	Develop positive mentoring and collaborative relationships within work environment.
			x	4.C.06.03	Show respect and collegiality, both formally and informally.
			x	4.C.06.04	Explain and follow workplace policy on the use of cell phones and other forms of social media.
		x		4.C.06.05	Maintain focus on tasks and avoid negative topics or excessive personal conversations in the workplace.
			x	4.C.06.06	Negotiate solutions to interpersonal and workplace conflicts.
				Strand : 5:Management and Entrepreneurship Knowledge and Skills	
1	2	3	4	**Topic : A:Management and Entrepreneurship Knowledge and Skills**	
			x	VIT.VISSN.5.A.01	Analyze basic business practices required to start and run a company/organization.
			x	VIT.VISSN.5.A.01.01	Define entrepreneurship.
		x		VIT.VISSN.5.A.01.02	Compare and contrast types of business ownership (i.e., sole proprietorships, franchises, partnerships, corporations).
			x	VIT.VISSN.5.A.01.03	Identify and explain the purpose and contents of a business plan.

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			x	VIT.VISSN.5.A.01.04	Describe practices that ensure quality customer service.
1	**2**	**3**	**4**	**Topic :B: Managing a business**	
	x			5.B.01	Demonstrate an understanding of managing a business.
		x		5.B.01.01	Formulate short- and long-term business goals.
		x		5.B.01.02	Demonstrate effective verbal, written and visual communication skills.
			x	5.B.01.03	Utilize a decision-making process to make effective business decisions.
		x		5.B.01.04	Identify a business's chain of command and define its organizational structure.
		x		5.B.01.05	Identify and apply effective customer service skills and practices.
		x		5.B.01.06	Identify, interpret and develop written operating procedures and policies.
			x	5.B.01.07	Track inventory, productivity and labor cost.
			x	5.B.01.08	Demonstrate business meeting skills.
			x	5.B.01.09	Identify professional organizations and explore their benefits.
1	**2**	**3**	**4**	**Topic :C: Managing a business**	
		x		5.C.01	Demonstrate an understanding of marketing and promoting a business.
	x			5.C.01.01	Explain the role of business in the economy.
		x		5.C.01.02	Describe the relationship between business and community.
x				5.C.01.03	Describe methods of market research and identifying target markets.
x				5.C.01.04	Describe and apply the concepts of a marketing mix (the 4Ps of marketing: product, price, place and promotion).
	x			5.C.01.05	Compare and contrast the promotional tools and techniques used to sell products, services, images and ideas.
		x		5.C.01.06	Describe the impact of supply and demand on a product or business.
		x		5.C.01.07	Identify direct and indirect competition on a business.
	x			5.C.01.08	Identify and use sales techniques to meet client needs and wants.
	x			5.C.01.09	Discuss strategies to acquire and retain a customer base.
1	**2**	**3**	**4**	**Topic :D: Managing a business**	
	x			5.D.01	Demonstrate an understanding of financial concepts and applications.
	x			5.D.01.01	Identify essential financial reports and understand their purpose (i.e., budget, balance sheet and income statement).
		x		5.D.01.02	Describe payroll practices (i.e., deductions – federal, FICA and state taxes and insurances).
		x		5.D.01.03	Identify the importance of maintaining accurate records.
			x	5.D.01.04	Apply practices related to pricing, purchasing and billing.
			x	5.D.01.05	Maintain and reconcile a checking account.
			x	5.D.01.06	Identify the options for funding a business.
1	**2**	**3**	**4**	**Topic :E :Legal/Ethical/Social Responsibilities**	
		x		5.E.01	Demonstrate an understanding of legal, ethical and social responsibility for businesses.
		x		5.E.01.01	Identify state and federal laws and regulations related to managing a business.
			x	5.E.01.02	Describe and identify ethical business practices.

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		x		5.E.01.03	Demonstrate an understanding of business contracts.
			x	5.E.01.04	Explain the role of diversity in the workplace.
			x	5.E.01.05	Explain the role of labor organizations.
			x	5.E.01.06	Identify practices that support clean energy technologies and encourage environmental sustainability.
		x		5.E.01.07	Demonstrate an understanding of how technology advancements impact business practices.
				Strand : 6:Technology Literacy Knowledge and Skills	
1	**2**	**3**	**4**	**Topic : A:Technology Literacy Knowledge and Skills (Grades 9 through 12)**	
			x	VIT.VISSN.6.A.01	Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity.
		x		VIT.VISSN.6.A.01.01	Use online help and other support to learn about features of hardware and software, as well as to assess and resolve problems.
			x	VIT.VISSN.6.A.01.02	Install and uninstall software; compress and expand files (if the district allows it).
			x	VIT.VISSN.6.A.01.03	Explain effective backup and recovery strategies.
			x	VIT.VISSN.6.A.01.04	Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, and styles) to improve the appearance of documents and materials.
			x	VIT.VISSN.6.A.01.05	Use editing features appropriately (e.g., track changes, insert comments).
			x	VIT.VISSN.6.A.01.06	Identify the use of word processing and desktop publishing skills in various careers.
			x	VIT.VISSN.6.A.01.07	Identify the use of database skills in various careers.
			x	VIT.VISSN.6.A.01.08	Define and use functions of a spreadsheet application (e.g., sort, filter, find).
		x		VIT.VISSN.6.A.01.09	Explain how various formatting options are used to convey information in charts or graphs.
			x	VIT.VISSN.6.A.01.10	Identify the use of spreadsheet skills in various careers.
			x	VIT.VISSN.6.A.01.11	Use search engines and online directories.
		x		VIT.VISSN.6.A.01.12	Explain the differences among various search engines and how they rank results.
			x	VIT.VISSN.6.A.01.13	Explain and demonstrate effective search strategies for locating and retrieving electronic information (e.g., using syntax and Boolean logic operators).
			x	VIT.VISSN.6.A.01.14	Describe good practices for password protection and authentication.
		x		VIT.VISSN.6.A.02	Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school, and in society.
			x	VIT.VISSN.6.A.02.01	Demonstrate compliance with the school's Acceptable Use Policy.
			x	VIT.VISSN.6.A.02.02	Explain issues related to the responsible use of technology (e.g., privacy, security).
			x	VIT.VISSN.6.A.02.03	Explain laws restricting the use of copyrighted materials.
			x	VIT.VISSN.6.A.02.04	Identify examples of plagiarism, and discuss the possible consequences of plagiarizing the work of others.
		x		VIT.VISSN.6.A.03	Design and implement a personal learning plan that includes the use of technology to support lifelong learning goals.

			x	VIT.VISSN.6.A.03.01	Evaluate the authenticity, accuracy, appropriateness, and bias of electronic resources, including Web sites.
			x	VIT.VISSN.6.A.03.02	Analyze the values and points of view that are presented in media messages.
			x	VIT.VISSN.6.A.03.03	Describe devices, applications, and operating system features that offer accessibility for people with disabilities.
			x	VIT.VISSN.6.A.03.04	Evaluate school and work environments in terms of ergonomic practices.
			x	VIT.VISSN.6.A.03.05	Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, social networking sites).
			x	VIT.VISSN.6.A.03.06	Explain and use practices to protect one's personal safety online (e.g., not sharing personal information with strangers, being alert for online predators, reporting suspicious activities).
			x	VIT.VISSN.6.A.03.07	Explain ways individuals can protect their technology systems and information from unethical users.
		x		VIT.VISSN.6.A.04	Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, communication, collaboration, creativity, and innovation.
	x			VIT.VISSN.6.A.04.01	Devise and demonstrate strategies for efficiently collecting and organizing information from electronic sources.
	x			VIT.VISSN.6.A.04.02	Compare, evaluate, and select appropriate electronic resources to locate specific information
		x		VIT.VISSN.6.A.04.03	Select the most appropriate search engines and directories for specific research tasks.
			x	VIT.VISSN.6.A.04.04	Use a variety of media to present information for specific purposes (e.g., reports, research papers, presentations, newsletters, Web sites, podcasts, blogs), citing sources.
			x	VIT.VISSN.6.A.04.05	Demonstrate how the use of various techniques and effects (e.g., editing, music, color, rhetorical devices) can be used to convey meaning in media.
		x		VIT.VISSN.6.A.04.06	Use online communication tools to collaborate with peers, community members, and field experts as appropriate (e.g., bulletin boards, discussion forums, listserve, Web conferencing.
			x	VIT.VISSN.6.A.04.07	Plan and implement a collaborative project with students in other classrooms and schools using telecommunications tools (e.g., e-mail, discussion forums, groupware, interactive Web sites, video conferencing).

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