

Technical Support Student Learning Outcomes

	Knowledge	Student Learning Outcomes
K-9	Knowledge of interrelation between different organizational groups.	Describe a company's organizational structural, group roles and responsibilities, and internal and external communication processes.
K-10	Knowledge of organizational chart and roles/responsibilities of company personnel/departments.	
K-32	Knowledge of an organization's information classification program and procedures for information compromise.	
K-5	Knowledge of internal organizational communication processes.	
K-35	Knowledge of procedures used for documenting and querying reported incidents, problems, and events.	Understand the a company's business process for systems documentation. Describe business processes and issues for IT professionals including privacy laws, software licensing, ethical and professional behavior.
K-41	Knowledge of documentation processes and procedures.	
K-8	Knowledge of business issues regarding software licensing.	
K-2	Knowledge of computer networking concepts and protocols, and network security methodologies.	Explain the OSI model as it applies to various network environments. Identify and summarize techniques to secure network communication. Use operating system commands to manipulate files and directories and perform systems software troubleshooting. Explain various terminologies and technologies related to cloud-based systems. Identify differences and similarities between public, private and hybrid cloud-based environments. Describe the Voice over Internet Protocol (VoIP) telecommunications systems within the networking protocols.
K-20	Knowledge of systems administration concepts.	
K-28	Knowledge of remote access processes, tools, and capabilities related to customer support.	
K-19	Knowledge of measures or indicators of system performance and availability.	
K-24	Knowledge of Cloud-based technologies and concepts (e.g., IAAS, SAAS, PAAS, file/sync/share).	
K-44	Knowledge of VOIP telecommunication systems, both cloud based and on premise, as well as the OSI model and common networking protocols.	
K-45	Knowledge of what is cloud based and what is on premises as well as the different support models for each.	
K-21	Knowledge of physical computer components and architectures, including the functions of various components and peripherals .	
K-22	Knowledge of electronic devices (e.g., computer systems/components, access control devices, digital cameras, digital scanners, electronic organizers, hard drives, memory cards, modems, network components, networked appliances, networked home control devices, printers, removable storage devices, telephones, copiers, facsimile machines, etc.).	
K-34	Knowledge of IT system operation, maintenance, and security needed to keep equipment functioning properly.	
K-1	Knowledge of the basic operation of computers.	Identify and resolve common hardware faults and failures. Describe how to Install, configure, diagnose, and perform preventive maintenance on different hardware devices. Identify the components of integrating the TCP/IP protocol into the networking environment. Describe how to identify issues with software installation, configuration, permissions, and licensing restrictions. Describe how to assemble commonly required components in a standard desktop/laptop computers.
K-11	Knowledge of preventative maintenance procedures and processes.	
K-12	Knowledge of applicable backup and restoration procedures.	
K-13	Knowledge of system monitoring and diagnostic tools and processes.	
K-14	Knowledge of risk management processes (e.g., methods for assessing and mitigating risk).	Interpret the importance of Controlled Access to mitigate risk and vulnerabilities in all network environments. Explain crisis management processes and procedures.
K-52	Knowledge of crisis management processes and procedures.	
K-33	Knowledge of the operations and processes for incident, problem, and event management including escalation as needed.	Determine the best technologies to support and solve actual technical support problems. Identify the common troubleshooting methods to solve a customer problem. Describe how to troubleshoot and repair a non-functioning device of a customer.
K-36	Knowledge of successful capabilities to identify the solutions to less common and more complex system problems.	
K-46	Knowledge of when to escalate to vendor or providers and how to monitor progress through solution.	
K-26	Knowledge of industry best practices for service desk (e.g., Machine learning and AI).	
K-7	Knowledge of technical support operations, issues, and constraints.	
K-37	Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.	
K-39	Knowledge of troubleshooting methods.	
K-40	Knowledge of change control procedures.	
K-51	Knowledge of case management tools, processes and procedures.	
K-4	Knowledge of practices of internal, external, and global customers (as applicable).	
K-6	Knowledge of customer support processes and practices.	Describe different types of file extensions. Explain operating systems commands using the command line interface. Describe system administration concepts for various operating systems.
K-3	Knowledge of operating environments, organizational software and applications.	
K-23	Knowledge of file extensions (e.g., .dll, .bat, .zip, .pcap, .gzip).	
K-25	Knowledge of system administration concepts for operating systems such as but not limited to Unix/Linux, IOS, Android, and Windows operating systems.	Explain data privacy laws with respect to federal and state laws in the USA. Describe laws, regulations and ethical behavior for cybersecurity globally.
K-16	Knowledge of cybersecurity and privacy principles.	
K-15	Knowledge of laws, regulations, policies, and ethics as they relate to cybersecurity and privacy.	

K-18	Knowledge of specific operational impacts of cybersecurity lapses.	Describe the consequences of cybersecurity lapses to an organization in light of organizational security policies, including automated functions.
K-27	Knowledge of organizational security policies.	
K-47	Knowledge of cybersecurity trends & effect of changes due to Cybersecurity event.	
K-50	Knowledge of professional services automation and management (e.g., security patches that are automatically deployed).	
K-29	Knowledge of Personally Identifiable Information (PII) data security standards.	
K-30	Knowledge of Payment Card Industry (PCI) data security standards.	Discuss data security standards in depth as they pertain to different business and industry environments.
K-31	Knowledge of Personal Health Information (PHI) data security standards.	Describe how to assess network vulnerabilities and attacks.
K-17	Knowledge of cyber threats and vulnerabilities.	Identify hardware and software defenses needed to protect the infrastructure in both wired and wireless installations.
K-49	Knowledge of security threats.	
K-42	Knowledge of technical presentation tools.	Demonstrate effective oral, written, and presentation communication skills in the delivery of customer service, project planning and task completion in the technology support environment.
K-38	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.	
K-43	Knowledge of continuous quality improvement.	
K-48	Knowledge of change management approaches and communication.	Identify key organizational methods for continuous quality improvement and change management.
Skills		Student Learning Outcomes
S-12	Skill in monitoring workload, managing time, and prioritizing requests.	Demonstrate effective use of time and the ability to prioritize technical job requests. Configure network software and hardware equipment based on industry standards and specifications. Use appropriate hardware and software tools to solve a problem or repair a computer device. Conduct research to troubleshoot client-level problems. Apply troubleshooting skills to solve a technical support problem. Use appropriate network performance monitoring tools to identify and solve system issues. Adapt and implement any needed changes related to cybersecurity incidents or directives. Demonstrate ability to effectively respond to on premises or cloud based incidents. Demonstrate effective collaboration and communication skills to improve team productivity and customer support. Identify and interpret relevant technical information from multiple sources.
S-4	Skill in configuring and validating network workstations and peripherals in accordance with approved standards and/or specifications.	
S-2	Skill in using the appropriate tools for repairing software, hardware, and peripheral equipment of a system.	
S-3	Skill in conducting research for troubleshooting novel client-level problems.	
S-8	Skill in recognizing a problem and figuring out the best way to solve it.	
S-9	Skill in thinking about the pros and cons of different ways to solve a problem.	
S-1	Skill in identifying possible causes of degradation of system performance or availability as well as skill in initiating actions needed to mitigate this degradation.	
S-13	Skill in adapting to and implementing change as a result of cybersecurity incident or AI directive.	
S-5	Skill in incident response for on premises or cloud service models.	
S-6	Skill in communicating with others.	
S-7	Skill in listening to others, not interrupting, and asking good questions.	
S-10	Skill in writing for communicating with co-workers or customers.	
S-11	Skill in reading work-related technical information.	
Abilities		Student Learning Outcomes
A-2	Ability to accurately define incidents, problems, and events in the trouble ticketing system.	Diagnose and document responses to maintenance and trouble tickets by following SOP. Evaluate issues not addressed by the SOP, and update necessary steps and knowledge databases as needed. Follow the organization's Standard Operating Procedures (SOP) and develop, maintain and update as necessary.
A-3	Ability to follow, develop, update, and/or maintain standard operating procedures (SOPs).	
A-9	Ability to record data in knowledge bases using proper key words.	
A-14	Ability to use rules to solve problems.	
A-5	Ability to translate technical language into lay terminology when needed.	Effectively communicate technical jargon in simple terms to clients. Breakdown complex problems and refer to appropriate higher technical support levels.
A-7	Ability to communicate complex technical issues and business implications.	
A-4	Ability to find solutions to less common and more complex system problems including escalating problems when needed.	
A-13	Ability to make order out of ambiguity.	Detect and identify the customer issue, considering all details and addressing ambiguities. Manage the details of the customer troubleshooting issue.
A-1	Ability to analyze and interpret customer input for expressed and implied issues.	
A-11	Ability to recognize and understand details.	
A-6	Ability to communicate verbally, appropriately for different audiences and organizational levels.	Demonstrate competence in effective collaboration, communication (both oral and written), and listening skills to define and solve technical problems for a diverse audience. Identify, evaluate and suggest solutions to technical problems encountered.
A-10	Ability to listen and understand what people say.	
A-12	Ability to speak clearly.	
A-15	Ability to communicate by writing.	
A-16	Ability to create appropriate presentation visuals for technical material.	
A-8	Ability to read and interpret technical documents, diagrams, and decision trees.	Analyze and interpret technical documents and diagrams.
A-17	Ability to adjust to changing technology.	Effectively adapt and adjust to changing technology.