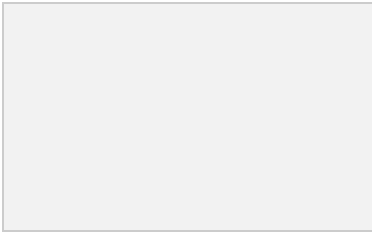


Cover Sheet



Dover Area School District Curriculum Cover Sheet

CIP Code: 15.1202

CIP Title: Computer Technology

Planned Hours: 1320

CIP Description:

A program that prepares individuals to apply basic engineering principles and technical skills in support of professionals who use computer systems. Includes instruction in basic computer design and architecture, programming, problems of specific computer applications, component and system maintenance and inspection procedures, hardware and software problem diagnosis and repair, and report preparation.

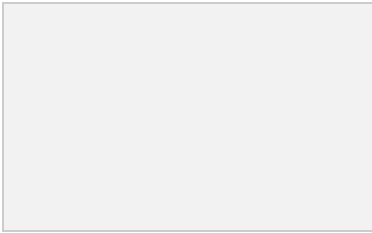
Component Courses:

660 - Microsoft Office (120 hours)

Microsoft Office is a comprehensive course designed to teach students intermediate-level software applications using Microsoft Office. This course includes Word, Excel, PowerPoint, and the Internet. In addition, students will complete integrated projects and internet research tasks. Students will have the opportunity to earn a Microsoft Office Specialist credential through Certiport. These software application skills benefit students in all areas of life.

662 - Advanced Microsoft Office (120 hours)

Advanced Microsoft Office is a comprehensive course designed to teach students *advanced-level* applications in *Microsoft Office*. Students will have the opportunity to utilize and develop broader skills learned in Microsoft Office. Emphasis is placed on the following advanced applications: Word, PowerPoint, and Excel. Internet search strategies will be used to gather/collect information from websites to create and enhance student projects. Priority will focus on the integration of software packages and student application projects. Skills learned in the advanced course will benefit students in their academic, personal, and business lives.



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665 - Web Page Design (120 hours)

In this course, students will gain a foundational knowledge of website creation and coding.. Students will be able to apply their knowledge for the planning, designing, and development of their own websites over the course of the semester. By the end of this course, students will be comfortable creating, coding, and posting basic HTML and CSS files to the Internet. Critical thinking will be encouraged through class interactions, assignments, and projects.

944 - Honors Introduction to Programming (120 hours)®™

Primarily using Python, this course aims to develop computational thinking, problem-solving methods, and algorithm development that will also transfer to learning other computer languages. The course includes procedural and data abstractions, program design, debugging, testing, and documentation. This course will generate an overall understanding of potential career paths that utilize computing and introduce professional tools that foster creativity and collaboration. Basic computer knowledge is required for this course.

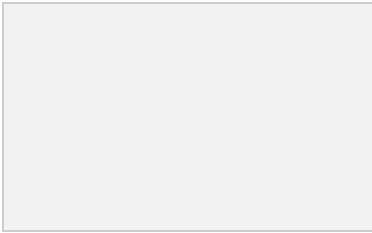
945 - IT Essentials I (120 hours)

IT Essentials I introduces students to core technology concepts and foundational digital skills while building confidence and curiosity about careers in computing. This course provides a broad survey of the major domains within the Computer Technology program and prepares students for success in advanced coursework. Students will explore productivity and collaboration software, computer hardware components and functions, operating systems and basic software management, digital citizenship, safe computing habits, and media literacy. In addition, students will learn keyboarding and essential workplace technology skills. The course will introduce basic networking principles, security and internet fundamentals, and software development concepts (languages, Data types, organization techniques). Hands-on activities and real-world scenarios help students develop troubleshooting skills and foundational IT knowledge. This course prepares students for the CompTIA Tech+ Certification exam, providing the essential baseline for entry-level IT competencies. This course is the entry point for all courses within the program.

947 - Honors Game Design and Simulation (120 hours)®™

REQUIRED: SUCCESSFUL COMPLETION OF HONORS INTRODUCTION TO PROGRAMMING

Students will understand historical elements of game design, genres, utilize documentation techniques, testing and produce basic games, and improve many iterations of developed games. Students will be using design thinking processes and critical problem-solving to obtain an overall view of the gameplay experience and how that is implemented with various design



Dover Area School District Curriculum Cover Sheet

components. Practical hands-on applications include using a game design environment to create and implement simple games. Basic computer knowledge is required for this course.

948 - IT Essentials II (120 hours)

REQUIRED: SUCCESSFUL COMPLETION OF IT ESSENTIALS I, ROUTING & SWITCHING, HONORS INTRO TO PROGRAMMING. MAY BE TAKEN CONCURRENTLY WITH INTRO TO CYBERSECURITY.

IT Essentials II provides the advanced computer hardware, software, operating system, and troubleshooting knowledge required for industry-aligned entry-level IT support roles. Through hands-on labs and scenario-based problem solving, students will deepen their understanding of how computers function internally and how IT professionals diagnose and resolve technical issues. Major topics include: PC hardware architecture, assembly, and component-level troubleshooting, operating system installation, configuration, and maintenance, storage technologies and file systems, system utilities and command-line tools, virtualization fundamentals, device drivers, peripherals, and compatibility considerations, preventative maintenance and documentation, and professional IT workflows and customer service best practices. This course directly aligns with the CompTIA A+ Certification, preparing students to meet the expectations of modern IT help desk and technical support roles. It builds on the networking and programming foundations established in prior coursework to provide a comprehensive, career-ready skill set.

949 - Introduction to Networks (120 hours)

REQUIRED: SUCCESSFUL COMPLETION OF IT ESSENTIALS I

Introduction to Networks curriculum is a gateway to entry-level networking jobs and IT careers. In this class, students will cover the fundamentals of networking including configuring network switches, understanding protocols, and the OSI Model. Topics include the TCP/IP suite, subnetting, and Cisco IOS. This course aligns with the CompTIA Network+ Certification. Basic computer knowledge is required for this course.

952 - Introduction to Cybersecurity (120 hours)

REQUIRED: SUCCESSFUL COMPLETION OF INTRODUCTION TO NETWORKS AND IT ESSENTIALS I

Introduction to Cybersecurity introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Students will explore and utilize cutting-edge tools for defending network resources. This course aligns with the CompTIA Security+ Certification.

954 - Routing & Switching Essentials (120 hours)

REQUIRED: SUCCESSFUL COMPLETION OF INTRODUCTION TO NETWORKS AND IT ESSENTIALS I

This course describes the architecture, components, and operations of routers and switches in a small network. Participants learn how to configure a router and a switch for basic functionality.



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This course aligns with the Cisco CCNA 200-301 Certification and prepares students to obtain their TestOut Routing and Switching Pro Certification.

Pacing Guide

PACING GUIDE

660 - Microsoft Office	Associated Tasks	120 Hours
Unit 1: Hardware & the Internet	115, 406, 501, 511, 512, 513	8 hours
Unit 2: Word - Flyers, Letters, and Reports	115, 601, 702, 708, 905, 1002, 1008	42 hours
Unit 3: Excel - Spreadsheets with Formulas and Charts	115, 601, 702, 708, 905, 1002, 1008	42 hours
Unit 4: PowerPoint - Presentations with Themes and Graphics	115, 601, 702, 708, 905, 1002, 1008	30 hours
Unit 5: Introduction to Simple Databases	115, 601, 702, 708, 905, 1002, 1008	8 hours

662 - Advanced Microsoft Office	Associated Tasks	120 Hours
Unit 1: Word - Watermarking, Forms, Merge, Templates	15, 601, 702, 708, 905, 1002, 1008	30 hours
Unit 2: Excel - Spreadsheets with Advanced Formulas	15, 601, 702, 708, 905, 1002, 1008	40 hours hours
Unit 3: PowerPoint - Presentations with Embedded Elements	15, 601, 702, 708, 905, 1002, 1008	25 hours
Unit 4: Databases & Forms	15, 601, 702, 708, 905, 1002, 1008	25 hours

PACING GUIDE

665 - Web Page Design	Associated Tasks	120 Hours
Internet & Web Basics (How the web works, browsers, files, URLs)	403, 405, 404	8 hours
HTML Page Structure (Tags, semantic structure, content elements)	405, 406, 1006	12 hours
Nesting & Page Organization (Containers, structure, valid HTML)	405, 1006	10 hours
CSS Selectors & Specificity (Classes, IDs, targeting, cascade)	405, 406	12 hours
Box Model & Visual Design (Spacing, color, typography, contrast)	404, 407	12 hours
Layout & Navigation (Multi-page sites, menus, consistency)	405, 406, 1006	14 hours
Design Review & Dev Tools (Debugging, accessibility, performance)	404, 405, 601	10 hours
Intro to JavaScript (Variables, functions, events, DOM basics)	406, 704, 712	12 hours
Forms & Validation (User input, feedback, basic validation)	404, 406, 901	10 hours
Final Web Project & Presentation (Full site build + presentation)	1001, 1002, 1003, 1006	20 hours

PACING GUIDE

944 - Honors Introduction to Programming I	Associated Tasks	120 Hours
Programming Foundations (Variables, I/O, Expressions)	403, 405, 701, 702	12 hours
Data Types, Operators & Expressions	701, 704, 709	10 hours
Program Design & Planning (Pseudocode, Problem Solving)	1001, 1002, 1006	8 hours
Decision Making (Conditionals & Boolean Logic)	701, 704, 705	12 hours
Debugging, Code Style & Documentation	601, 605, 1006	10 hours
Loops & Iteration (While, For, Control Structures)	701, 704, 705	14 hours
Libraries & Modular Code (Math, Random, Built-ins)	701, 710	8 hours
Intro to Object-Oriented Concepts (Classes & Objects)	712, 701	8 hours
Graphics Programming & Event Loops (Game Foundations)	702, 704, 712	12 hours
Animation & User Interaction (Input, Collision, Events)	704, 705, 801	10 hours
Game Development Project (Application of Concepts)	1001, 1002, 1003, 1006	10 hours
Programming Careers, Collaboration & Capstone Reflection	1001, 1002, 1003	6 hours

PACING GUIDE

9XX - Honors Introduction to Programming II	Associated Tasks	120 Hours
Review of Programming I Concepts & Transition	701, 704, 705	6 hours
Lists & Iteration (For-Each, Indexing, Operations)	701, 704	14 hours
Advanced List Operations & Algorithms	601, 704, 705	10 hours
Strings as Data Collections & Manipulation	701, 704	8 hours
Tuples, Dictionaries & Data Structures	701, 704, 710	14 hours
Nested Data & Complex Data Modeling	704, 705	10 hours
Web APIs & External Data Integration	405, 801, 803	10 hours
User-Defined Functions & Code Organization	701, 710	12 hours
Scope, Parameters & Advanced Function Design	601, 602, 605	8 hours
Software Development Practices (Docstrings, Code Review, Teamwork)	1001, 1003, 1006	8 hours
Final Game / Application Project (Capstone)	1001, 1002, 1003, 1006	12 hours

PACING GUIDE

945 - IT Essentials I	Associated Tasks	120 Hours
Tech+ Concepts, Safety & Troubleshooting Foundations	101, 102, 103, 104, 105, 106, 107, 108, 112, 114, 115, 601, 712	18 hours
Tech+ Infrastructure: Hardware, Devices & Peripherals	501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 514, 515, 516, 517, 518	28 hours
Tech+ Applications, Software & Operating Systems	403, 405, 406, 701, 702, 703, 706, 709, 710	22 hours
Tech+ Networking & Internet Fundamentals	403, 405, 518, 606, 801, 802, 803, 804, 805, 807, 808	18 hours
Tech+ Security, Data Privacy & Digital Responsibility	404, 407, 901, 902, 903, 904, 905, 906, 907, 1004, 1005, 1006	18 hours
Tech+ Professional Skills, Documentation & Review	601, 602, 605, 1001, 1002, 1003, 1004, 1006, 1007	16 hours

PACING GUIDE

947 - Honors Game Design and Simulation	Associated Tasks	120 Hours
Foundations of Game Design & Probability	405, 404, 901, 1001, 1010	20 hours
Game History & Analysis	406, 1001, 1002, 1006	10 hours
Dice Game Design Lab	601, 605, 1002, 1003	10 hours
Card Game Design Lab	406, 601, 1002, 1006	10 hours
Board Game Systems & Balance	601, 605, 1002, 1010	12 hours
Analog Game Design Project (Prototype → Iteration)	601, 605, 1003, 1006	14 hours
Programming Foundations for Games (Python)	702, 704, 709, 712	14 hours
Pygame Fundamentals (Digital Game Systems)	704, 705, 710, 712	12 hours
Capstone Digital Game Project	601, 605, 1002, 1006, 1007	12 hours
Presentation, Playtesting & Reflection	1001, 1002, 1005, 1006	6 hours

PACING GUIDE

948 - IT Essentials II	Associated Tasks	120 Hours
A+ Core 1: Mobile Devices	510, 517, 604	10 hours
A+ Core 1: Networking	518, 606, 607, 801, 802, 803, 804, 805, 806, 807, 808	18 hours
A+ Core 1: Hardware	501, 502, 503, 504, 505, 506, 507, 508, 509, 511, 513, 514, 515, 516, 1007	22 hours
A+ Core 1: Virtualization & Cloud Computing	711, 712	8 hours
A+ Core 1: Hardware & Network Troubleshooting	512, 601, 602, 603, 604, 605, 606, 607, 705, 806	17 hours
A+ Core 2: Operating Systems	701, 702, 703, 704, 705, 706, 708, 709, 710, 712	18 hours
A+ Core 2: Security	404, 407, 901, 902, 903, 904, 905, 906, 907, 908	15 hours
A+ Core 2: Software Troubleshooting	602, 705, 708, 710	6 hours
A+ Core 2: Operational Procedures & Professionalism	101, 102, 103, 104, 105, 106, 107, 108, 112, 114, 115, 1001, 1002, 1003, 1004, 1005, 1006	6 hours

PACING GUIDE

949 - Introduction to Networks	Associated Tasks	120 Hours
Course Orientation, Lab Safety, and Network Equipment Handling	101, 106, 108, 114, 115, 606, 1001	6 hours
Network Fundamentals: What Networks Do, Types of Networks, and Internet Connectivity	403, 405, 801, 802, 803	10 hours
Network Devices, Media, Topologies, Ports, and Protocols	518, 801, 803, 805, 808	12 hours
Internet Services, IP Addressing Basics, DHCP, DNS, URLs, and Common Protocols	403, 802, 803, 806, 808	12 hours
Packet Journey Foundations: OSI/TCP-IP Models, Encapsulation, Ethernet, MAC Addresses, ARP, and Routing Concepts	803, 805, 806, 1006	12 hours
Cabling, Connectors, Network Tools, and Physical Layer Lab Skills	804, 606, 607, 805	10 hours
Wireless and SOHO Networking Basics	801, 802, 803, 805, 806, 807	10 hours
Linux Command Line and Raspberry Pi Network Services	703, 704, 705, 709, 710, 712, 808	12 hours
Build a Raspberry Pi Fake ISP: DNS, Web Services, Addressing, and Client Testing	802, 803, 806, 808, 1006	14 hours
Build and Test a RaspAP Router and SOHO Network	801, 802, 803, 805, 806, 807, 808	14 hours
Network Troubleshooting, Documentation, Team Build Checkoff, and Final Reflection	601, 606, 705, 806, 1001, 1002, 1003, 1006, 1009, 1010	8 hours

PACING GUIDE

952 - Introduction to Cybersecurity	Associated Tasks	120 Hours
Cybersecurity Foundations (CIA Triad, Risk, Threat Landscape)	901, 906, 1006, 1010	12 hours
Digital Citizenship, Ethics & Legal Responsibilities	404, 407, 901, 906, 1005, 1008	10 hours
Networking Fundamentals for Cybersecurity (Attack Surface & Data Flow)	801, 802, 803, 805, 807	14 hours
Systems, Hardware & Endpoint Security Basics	501, 504, 510, 712	10 hours
Operating Systems & Security Configuration	701, 703, 704, 705, 708, 709	14 hours
Threats, Vulnerabilities & Malware	902, 904, 905	12 hours
Identity, Access Management & Authentication	903, 907	8 hours
Network Security & Wireless Protection	802, 803, 805, 806, 807	12 hours
Incident Response & Basic Digital Forensics	601, 602, 605, 908	10 hours
Disaster Recovery, Business Continuity & Risk Management	909, 1006, 1010	8 hours
Security Tools, Monitoring & Defensive Strategies	606, 805, 806, 902	10 hours
Cybersecurity Careers, Teamwork & Capstone Project	1001, 1002, 1003, 1006	10 hours

PACING GUIDE

954 - Routing & Switching Essentials	Associated Tasks	120 Hours
Course Orientation, Lab Safety, Enterprise Equipment Inventory, and Rack/Lab Procedures	101, 106, 108, 114, 115, 606, 1009	6 hours
Network+ Foundations Review: OSI Model, Ports, Protocols, Devices, Media, and Topologies	518, 801, 803, 805	10 hours
IPv4/IPv6 Addressing, Subnetting, CIDR, VLSM, DHCP, DNS, and Gateway Configuration	802, 803, 806, 808	12 hours
Cisco IOS and Device Management: Console Access, SSH, Basic Configuration, Passwords, and Config Backups	703, 704, 705, 709, 902, 903, 907, 1006	10 hours
Switching Essentials: VLANs, Trunks, Access Ports, STP Concepts, Layer 2 Design, and Switch Documentation	803, 805, 806, 807, 808, 1006	14 hours
Routing Essentials: Static Routes, Default Routes, Inter-VLAN Routing, Router-on-a-Stick, and Layer 3 Switching Concepts	802, 803, 806, 807, 808	14 hours
Wireless and PoE Implementation: Cisco Aironet APs, SSIDs, Channels, Encryption, and Client Connectivity	802, 805, 806, 807, 808, 902	8 hours
Network Services and Servers: Dell PowerEdge Lab Services, DHCP/DNS/File/Web Services, Virtualization, and Network Resources	711, 713, 808, 1007, 1009	8 hours
Network Security and Hardening: VLAN Segmentation, ACL Concepts, Device Hardening, Wireless Security, and Acceptable Use	901, 902, 903, 905, 907, 1008	10 hours
Network Operations: Physical/Logical Diagrams, Cable Maps, IP Address Plans, Configuration Baselines, Monitoring, and Asset Inventory	606, 806, 1006, 1009, 1010	8 hours
Troubleshooting Methodology and Tools: CLI Commands, Cable Testing, Interface Status, Wireshark, Logs, and Layered Troubleshooting	601, 606, 705, 806, 905	8 hours
Final Network Design/Build Capstone: Multi-VLAN Routed Network Using Cisco, Dell, Ubiquiti, Wireless, and Server Equipment	801, 802, 803, 804, 805, 806, 807, 808, 1001, 1002, 1003, 1006	12 hours

Task List (from KUD Spreadsheet)

Competency Task List – Secondary Component

Computer Technology/Computer Systems Technology CIP 15.1202

High School Graduation Years 2026, 2027, 2028

100 Personal and Environmental Safety

Secondary Course					Assessment	
Item	Task	Crosswalk	Know	Understand	Do	
101	Identify and prevent common causes of accidents and injuries in the workplace.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- The common causes of accidents and injuries in the workplace, such as slips, trips, falls, and manual handling. - The basic safety procedures and equipment for preventing accidents and injuries.	- The importance of identifying and preventing accidents and injuries to maintain a safe and healthy work environment. - How to assess the workplace and identify potential hazards.	- Regularly inspect the workplace for potential hazards, such as cluttered walkways, uneven flooring, and inadequate lighting. - Follow established safety procedures, such as wearing personal protective equipment and following manual handling guidelines. - Report any hazardous conditions or incidents to a supervisor. - Participate in safety training and updates.	
102	Wear personal protective equipment.	All Classes	- The different types of PPE, such as hard hats, safety glasses, and gloves. - The appropriate PPE for different tasks and hazards in the workplace.	- The importance of wearing PPE to protect against accidents and injuries in the workplace. - How to properly fit, use, and maintain PPE.	- Familiarize yourself with the PPE required for your job and tasks. - Properly fit and wear the required PPE at all times when performing hazardous tasks. - Regularly inspect and	

					replace PPE as needed. - Properly store PPE when not in use.	
103	Identify safety hazard symbols.	945 - IT Essentials I 948 - IT Essentials II	- The purpose of safety hazard symbols and the types of hazards they represent, such as toxic, flammable, and explosive. - The basic meanings and colors of common hazard symbols.	- The importance of recognizing and understanding safety hazard symbols to maintain a safe work environment. - How hazard symbols can be used to identify potential hazards and inform workers of safe handling and storage procedures.	- Regularly review and familiarize yourself with common hazard symbols and their meanings. - Look for and pay attention to hazard symbols in the workplace and on labels and containers. - Follow the procedures indicated by hazard symbols and obey warning signs.	
104	Follow Safety Data Sheets (SDS).	945 - IT Essentials I 948 - IT Essentials II	- What an SDS is and its purpose. - Where to find and access SDS for a specific chemical or product.	- The importance of following SDS for safe handling and use of chemicals or products. - The different hazards associated with a substance or product and how to recognize them.	- Read the SDS before using a new chemical or product. - Follow the instructions and precautions listed in the SDS. - Keep SDS in a accessible location for quick reference in case of emergency.	
105	Identify and select the type of fire extinguisher based on the type of fire.	945 - IT Essentials I 948 - IT Essentials II	- The different classes of fires and their causes. - The types of fire extinguishers and the fire class they are suitable for.	- The importance of using the correct type of fire extinguisher for each type of fire. - The potential dangers and risks of using the wrong type of fire extinguisher.	- Quickly identify the class of fire. - Select the appropriate type of fire extinguisher. - Use the fire extinguisher correctly and safely, following the manufacturer's instructions.	
106	Follow proper procedures when lifting and carrying heavy objects.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks	- The potential risks and hazards associated with lifting and carrying heavy objects. - The proper body mechanics for lifting and carrying heavy objects.	- The importance of following proper lifting and carrying procedures to prevent injury. - How to assess the weight and size of the object to determine the appropriate lifting technique.	- Plan and prepare before lifting, including clearing the path, using proper footwear, and asking for help if necessary. - Use the correct lifting technique, including keeping	

		954 - Routing & Switching Essentials				the object close to the body, using the legs to lift, and avoiding twisting and bending at the waist. - Ask for help if the object is too heavy or awkward to lift alone.	
107	Identify and implement proper disposal procedures based upon environmental impact and regulations.	945 - IT Essentials I 948 - IT Essentials II	- The different types of waste and their potential impact on the environment. - The local, state, and federal regulations for waste disposal.	- The importance of proper waste disposal to minimize environmental impact. - How to assess the type of waste and determine the appropriate disposal method based on regulations.	- Sort waste into categories, such as recyclables, hazardous waste, and general waste. - Research and follow the regulations for each type of waste. - Use appropriate disposal methods, such as recycling, safe disposal of hazardous waste, and properly disposing of general waste.		
108	Identify potential hazards when working with power supplies.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- The different types of power supplies and their potential hazards. - The basic safety precautions for working with power supplies.	- The dangers associated with electrical shock, fire, and other hazards. - The importance of following safety procedures when working with power supplies.	- Assess the power supply and identify potential hazards before use. - Follow the manufacturer's instructions and safety precautions. - Use proper protective equipment, such as insulated gloves and safety glasses. - Report any damaged or malfunctioning power supplies to a supervisor.		
	RESERVED (109-111)	-					

112	Configure a computer's power management settings to maximize energy efficiency.	945 - IT Essentials I 948 - IT Essentials II	- The different power management options available on a computer. - The impact of power management settings on energy consumption.	- The importance of maximizing energy efficiency to reduce costs and minimize environmental impact. - How to make changes to power management settings on a computer	- Open the power management settings on the computer. - Adjust settings such as screen timeout, sleep mode, and power plan to maximize energy efficiency. - Regularly review and adjust power management settings as needed. - Turn off the computer when not in use to minimize energy consumption.	
	RESERVED (113)	-				
114	Prevent electrostatic discharge conditions.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- The cause and potential consequences of ESD. - The basic safety procedures for preventing ESD.	- The importance of preventing ESD to protect sensitive electronic equipment. - How to reduce the risk of ESD by controlling the buildup of static electricity.	- Wear an ESD wrist strap or use ESD-safe handling techniques. - Work on an ESD-safe surface, such as a grounded mat. - Avoid activities that can generate static electricity, such as walking on carpet or wearing synthetic clothing. - Regularly check and replace ESD equipment as needed.	
115	Demonstrate proper ergonomic techniques.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- The basic principles of ergonomics, such as proper posture, positioning, and movements. - The common causes of ergonomic injuries, such as repetitive strain and awkward postures.	- The importance of ergonomics for preventing injury and promoting comfort and efficiency. - How to adjust workstations, tools, and techniques to reduce the risk of ergonomic injury.	- Assess the work environment and identify potential ergonomic hazards. - Adjust workstations and equipment, such as chairs, desks, keyboards, and mouse, to promote proper posture and positioning. - Use proper techniques, such as taking regular breaks	

						and alternating tasks, to reduce the risk of repetitive strain. - Pay attention to body mechanics, such as avoiding awkward postures and using proper lifting techniques.	
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200 Reserved

300 Reserved

400 Internet Applications

Secondary Course							Assessment
Item	Task	Crosswalk	Know	Understand	Do		
	RESERVED (401-402)	-					
403	Identify the components of a uniform resource locator (URL).	665 - Web Page Design 944 - Honors Introduction to Programming I 945 - IT Essentials I 949 - Introduction to Networks	- The basic structure and purpose of a URL. - The common components of a URL, such as the protocol, domain, path, and query parameters.	- How a URL is used to locate and access web resources on the internet. - The relationship between the components of a URL and how they determine the location of a specific web resource.	- Inspect and understand the structure of URLs when accessing web resources. - Use the components of a URL, such as the domain and path, to determine the location and access web resources. - Modify and construct URLs as needed to access specific web resources.		
404	Identify processes for addressing prohibited content/activity, and privacy, licensing, and policy concepts.	665 - Web Page Design 945 - IT Essentials I 947 - Honors Game Design and Simulation	- The types of prohibited content/activity, such as illegal or unethical behavior, hate speech, and personal data misuse. - The policies and laws governing privacy,	- The importance of adhering to policies and laws that protect privacy, intellectual property, and the rights of others. - The impact of prohibited content/activity on individuals,	- Familiarize yourself with the policies, laws, and codes of conduct that apply to your online activity. - Report prohibited content/activity to the appropriate authorities or		

		948 - IT Essentials II 952 - Introduction to Cybersecurity	licensing, and intellectual property	organizations, and communities.	platform administrators. - Respect the privacy and intellectual property of others by obtaining proper consent and licensing for use of content. - Make informed decisions about what you share online and protect your own personal data.	
405	Use web browsers to effectively search and access information on the Internet.	All Classes	- The purpose and function of web browsers. - The basic features and capabilities of common web browsers, such as Chrome, Firefox, and Safari.	- How web browsers interact with web servers to access and display web pages. - The role of search engines in finding and accessing information on the internet.	- Choose and effectively use a web browser to access the internet. - Use search engines, such as Google, Bing, or Yahoo, to search for information on the internet. - Evaluate and assess the credibility, relevance, and accuracy of information found on the internet. - Use advanced search features, such as site-specific search and filtering options, to improve search results.	
406	Use collaboration software.	All Classes	- The purpose and types of collaboration software, such as group chat, file sharing, and project management tools. - The basic features and capabilities of common collaboration software, such as Slack, Google Drive, and Asana.	- How collaboration software can facilitate communication and collaboration within teams and organizations. - The benefits and limitations of using collaboration software in different contexts.	- Choose and effectively use collaboration software for communication and collaboration within teams and organizations. - Use the features of collaboration software, such as file sharing, task management, and group chat, to improve team productivity and efficiency. - Manage and organize	

					collaboration data and files to ensure easy access and collaboration. - Collaborate with others to create and share documents, presentations, and other work products.	
407	Identify safe and appropriate manner and the implications of the digital footprint when using social media.	665 - Web Page Design 945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- The definition of digital footprint and how it is created. - The types of information that can be included in a digital footprint, such as posts, comments, images, and personal information.	- The implications of a digital footprint, both positive and negative, including privacy, reputation, and future opportunities. - The importance of being mindful of what is posted on social media and how it affects one's digital footprint.	- Assess and evaluate the privacy settings and security of social media accounts. - Use social media in a safe and appropriate manner, avoiding posting personal information, sensitive information, or content that could harm one's reputation or relationships. - Consider the long-term implications of posting on social media and think before sharing or posting content. - Regularly monitor and manage one's digital footprint by removing or correcting any negative content.	

500 Computer Hardware

Secondary Course Crosswalk				
Item	Task	Know	Understand	Do Assessment

501	Categorize storage devices and backup media.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- The types of storage devices and backup media available, such as hard drives, solid-state drives, USB drives, and cloud storage. - The basic differences between storage devices and backup media, including capacity, speed, and accessibility.	- The appropriate use cases for different types of storage devices and backup media. - The importance of backing up data to protect against data loss or corruption.	- Choose and use appropriate storage devices and backup media for different types of data and situations. - Regularly backup important data to protect against data loss or corruption. - Store backup media in a safe and secure location to ensure the integrity of the data. - Evaluate the need for multiple backup solutions and implement a backup strategy that meets the needs of the data.	
502	Select motherboard components based on types, and features.	945 - IT Essentials I 948 - IT Essentials II	- The different types of motherboard components, such as CPU, RAM, storage, and expansion slots. - The basic features and specifications of each component, including clock speed, capacity, and compatibility.	- How different components interact with one another to form a computer system. - The importance of compatibility and compatibility between components when selecting and building a computer system.	- Research and compare different motherboard components to determine the best options for a specific build. - Consider the intended use case for the computer system and select components that meet the needs and requirements. - Ensure compatibility between components and choose components that are compatible with the selected motherboard. - Consider the budget and select components that provide the best balance of performance, features, and	

503	Select power supplies based on system requirements.	945 - IT Essentials I 948 - IT Essentials II	- The basic specifications and features of power supplies, such as power output, efficiency, and compatibility. - The different types of power supplies and their intended use cases, such as ATX, SFX, and modular power supplies.	- The importance of selecting a power supply that is appropriate for the computer system and its components. - How the specifications and features of a power supply impact system performance and stability.	- Research and compare power supplies to determine the best options for a specific computer build. - Determine the system's power requirements by calculating the total power consumption of all components. - Select a power supply that is compatible with the selected motherboard and provides sufficient power output to support the system components. - Consider the budget and select a power supply that provides the best balance of performance, features, and value.	value.	
504	Define the purpose and characteristics of central processor units (CPUs) and their features.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- The basic definition and function of a CPU, including its role as the primary processing unit in a computer. - The different types of CPUs and their intended use cases, such as desktop, laptop, and server CPUs.	- The various components that make up a CPU, including the control unit, arithmetic logic unit, and register files. - The importance of selecting an appropriate CPU based on the intended use of the computer system and its components.	- Research and compare different CPU models to understand their specifications and features. - Determine the system's processing requirements by considering the intended use of the computer and the types of applications it will run. - Select a CPU that is compatible with the selected motherboard and provides sufficient processing power to support the system		

505	Select and install cooling methods and devices.	945 - IT Essentials I 948 - IT Essentials II	- The various cooling methods used in computer systems, including air cooling, liquid cooling, and thermal paste. - The different types of cooling devices, such as fans, heat sinks, and radiators.	- The importance of selecting appropriate cooling methods and devices to prevent overheating and damage to system components. - The thermal requirements of different system components and how to determine the cooling needs of a computer system.	- Research and compare different cooling methods and devices to understand their specifications and features. - Determine the cooling requirements of the computer system based on the intended use, number of components, and thermal design specifications of each component. - Select appropriate cooling methods and devices that provide sufficient cooling performance to meet the needs of the system components. - Properly install the selected cooling methods and devices following the manufacturer's instructions and recommended best practices.	components and intended use. - Consider the budget and select a CPU that provides the best balance of performance, features, and value.	
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506	Select and install memory based on type, characteristics, and their purpose.	945 - IT Essentials I 948 - IT Essentials II	- The different types of memory used in computer systems, including RAM (Random Access Memory), SRAM (Static RAM), and DRAM (Dynamic RAM). - The characteristics and purposes of each type of memory, such as data access time, storage capacity, and volatile/non-volatile storage.	- The importance of selecting appropriate memory to support the system's performance and functionality. - The memory requirements of different computer systems, including the number of memory modules and the capacity of each module.	- Research and compare different types of memory to understand their specifications and features. - Determine the memory requirements of the computer system based on the intended use, number of components, and the software programs to be installed. - Select appropriate memory modules that provide sufficient storage capacity and data access speed to meet the needs of the system. - Properly install the selected memory modules following the manufacturer's instructions and recommended best practices.	
507	Select and distinguish between different display devices and their characteristics.	945 - IT Essentials I 948 - IT Essentials II 947 - Honors Game Design and Simulation 665 - Web Page Design	- The different types of display devices, including CRT (Cathode Ray Tube), LCD (Liquid Crystal Display), OLED (Organic Light Emitting Diode), and LED (Light Emitting Diode) displays. - The characteristics and purposes of each type of display, such as resolution, refresh rate, color accuracy, and size.	- The importance of selecting appropriate display devices to support the system's performance and functionality. - The display requirements of different computer systems, including the type of display and its specifications, such as resolution and refresh rate.	- Research and compare different types of display devices to understand their specifications and features. - Determine the display requirements of the computer system based on the intended use, number of components, and the software programs to be installed. - Select appropriate display devices that provide sufficient resolution, color	

					accuracy, and size to meet the needs of the system. - Properly install and set up the selected display devices following the manufacturer's instructions and recommended best practices.	
508	Install and configure peripherals and input devices.	945 - IT Essentials I 948 - IT Essentials II	- The different types of peripherals and input devices, including keyboards, mice, printers, scanners, and others. - The basic functions and specifications of each type of peripheral and input device.	- The importance of selecting and installing appropriate peripherals and input devices to support the system's performance and functionality. - The requirements and compatibility of different computer systems for the peripheral and input devices.	- Research and compare different types of peripherals and input devices to understand their specifications and features. - Determine the peripheral and input device requirements of the computer system based on the intended use, number of components, and the software programs to be installed. - Select and purchase appropriate peripherals and input devices that meet the needs and requirements of the system. - Properly install and connect the selected peripherals and input devices to the computer system, following the manufacturer's instructions and recommended best practices.	
509	Summarize the function and types of adapter cards.	945 - IT Essentials I 948 - IT	- The purpose of adapter cards is to add new capabilities or to enhance	- Different types of adapter cards, such as sound cards, network cards, video cards,	- Select and install the appropriate adapter card based on your computer's	

		Essentials II	existing capabilities of a computer system.	etc., serve specific functions.	requirements and intended use, and properly configure it to work with the rest of the system.	
510	Configure and optimize portable devices, e.g., laptops, tablets, and smart devices.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- Portable devices such as laptops, tablets, and smartphones have various configuration options to improve their performance and functionality.	- How to optimize and adjust settings for device hardware, software, and network connections can improve device performance.	- Configure and optimize your portable device by adjusting settings, installing updates, and making changes as needed to ensure optimal performance and functionality.	
511	Install, configure, and maintain the components of a desktop computer.	945 - IT Essentials I 948 - IT Essentials II	- A desktop computer consists of multiple components that work together to provide computing capabilities.	- The components of a desktop computer need to be properly installed, configured, and maintained to ensure optimal performance and longevity.	- Install, configure, and maintain your desktop computer components by following manufacturer instructions, updating software and drivers, and regularly cleaning and checking components for wear and tear.	
512	Detect problems, troubleshoot, and repair and replace the components of a desktop and laptop computer components.	948 - IT Essentials II	- Computers may encounter problems that affect their performance, functionality, or stability.	- To repair and maintain computer components, it is necessary to identify the source of the problem and determine the most effective solution.	- Use troubleshooting techniques to isolate the issue, such as checking connections, resetting the computer, or using system diagnostic tools. If necessary, replace faulty components with properly compatible replacements, following manufacturer instructions and safety guidelines.	

513	Install, configure, and maintain printers.	948 - IT Essentials II	- The different types of printers (inkjet, laser, thermal, etc.) - The basic components of a printer (print head, ink cartridges, paper tray, etc.) - The requirements for setting up a printer (operating system, software, cables, etc.)	- The process of connecting a printer to a computer - The process of installing and configuring printer software - The steps for maintaining a printer (replacing ink cartridges, cleaning print heads, troubleshooting, etc.)	- Connect a printer to a computer - Install and configure printer software - Maintain a printer by replacing ink cartridges, cleaning print heads, and troubleshooting - Test the printer to verify that it is functioning correctly - Document the setup and maintenance process for future reference.	
514	Calculate voltage, wattage, and capacity of power supply.	945 - IT Essentials I 948 - IT Essentials II	- The basic components of a power supply (AC/DC adapter, transformer, rectifier, etc.) - The basic formulas for calculating voltage, wattage, and capacity - The units of measurement for voltage, wattage, and capacity (volts, watts, amp-hours, etc.)	- The relationship between voltage, wattage, and capacity - How to calculate voltage, wattage, and capacity using the appropriate formulas - How to read and interpret the specifications of a power supply	- Calculate voltage, wattage, and capacity using the appropriate formulas - Read and interpret the specifications of a power supply - Verify the calculations by comparing them to the specifications of the power supply - Document the calculations and their results for future reference.	
515	Categorize different case form factors, their fans, and air flow directions.	945 - IT Essentials I 948 - IT Essentials II	- The different case form factors (ATX, Micro-ATX, ITX, etc.) - The types of fans used in computer cases (axial, radial, blower, etc.) - The basic concepts of air flow in a computer case (positive pressure, negative pressure, etc.)	- The differences between the different case form factors and their compatibility with different components - The differences between the different types of fans and their functions - The importance of proper airflow in a computer case and how it affects	- Categorize different case form factors based on their size and compatibility with different components - Identify the type of fan used in a computer case based on its design and specifications - Determine the air flow direction in a computer case	

				performance and cooling	based on the arrangement of the fans and other components - Document the findings for future reference.	
516	Differentiate between and describe the characteristics of various types of printers.	945 - IT Essentials I 948 - IT Essentials II	- There are several types of printers, including inkjet, laser, thermal, and dot matrix printers. - Each type of printer uses a different technology to print images or text onto paper or other media. - Different types of printers have different strengths and weaknesses, depending on the intended use and printing requirements.	- Inkjet printers use ink cartridges to spray tiny droplets of ink onto paper, creating high-quality color prints with good detail. - Laser printers use toner cartridges and a laser beam to fuse toner onto paper, producing fast, high-quality prints that are more suited for text and black and white documents. - Thermal printers use heat to transfer ink from a ribbon onto paper, making them suitable for printing receipts, tickets, and labels. - Dot matrix printers use a series of pins to strike a ribbon and create a pattern of dots on paper, making them suited for printing multipart forms and other documents that require carbon copies.	- Research the various types of printers and their specific characteristics and use cases. - Practice maintaining and troubleshooting common issues with printers, such as paper jams, low ink or toner, and connectivity issues.	
517	Explain and categorize the capabilities and limitations of various portable devices.	945 - IT Essentials I 948 - IT Essentials II	- The different types of portable devices (smartphones, laptops, tablets, etc.) - The basic components of each type of portable device (processor, RAM, storage, battery, etc.)	- The differences between the various types of portable devices in terms of performance, capabilities, and limitations - How to evaluate the suitability of a portable device for a specific task or	- Explain the capabilities and limitations of each type of portable device - Categorize the various types of portable devices based on their characteristics (e.g. performance, battery life,	

			- The typical use cases for each type of portable device	- The trade-offs between the different types of portable devices (e.g. performance vs. battery life, weight vs. screen size, etc.)	- Evaluate the suitability of a portable device for a specific task or requirement - Document the findings for future reference.	- screen size, etc.)
518	Identify various computer port types and purpose.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- The different types of computer ports (USB, HDMI, Ethernet, etc.) - The physical appearance of each type of port - The basic functions of each type of port	- The differences between the various types of computer ports in terms of their capabilities and functions - The purpose of each type of port and the types of devices that are typically connected to it - How to identify a port based on its physical appearance and function	- Identify the different types of computer ports based on their physical appearance and function - Explain the purpose and capabilities of each type of port - Connect a device to the appropriate port based on its requirements - Document the findings for future reference.	

600 Troubleshooting, Repair and Maintenance

Secondary Course Crosswalk					
Item	Task	Know	Understand	Do	Assessment
601	Apply troubleshooting methodologies.	All Classes - The basic steps of the troubleshooting process (identifying the problem, gathering information, developing a hypothesis, testing the hypothesis, etc.) - Common troubleshooting methodologies (top-down, bottom-up, trial-and-error, etc.) - The importance of documenting the	- The different stages of the troubleshooting process and how they interact with each other - The strengths and weaknesses of different troubleshooting methodologies and when to use each - The importance of clear and thorough documentation in the troubleshooting process	- Apply the troubleshooting process to identify and resolve problems in various scenarios - Choose the appropriate troubleshooting methodology for a given scenario based on its requirements - Document the troubleshooting process and its results for future	

			troubleshooting process and its results		reference	
602	Troubleshoot and resolve common hardware and operating system symptoms and their causes.	9XX - Honors Introduction to Programming II 945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- Common hardware and operating system symptoms include error messages, slow performance, crashes, and hardware malfunctions.	- These symptoms can be caused by a variety of factors, such as outdated software or hardware, conflicts between programs, or malware infections.	- Troubleshoot and resolve common hardware and operating system symptoms by identifying the source of the problem, running diagnostic tools, checking for updates or patches, uninstalling conflicting software, or running virus scans.	- Evaluate the results of the troubleshooting process and make changes or modifications as necessary.
603	Use troubleshooting methods and tools for printers.	948 - IT Essentials II	- Common printer symptoms (e.g. paper jam, error messages, slow performance, etc.) - Basic troubleshooting methodologies (e.g. top-down, trial-and-error, etc.) - Basic printer troubleshooting tools (e.g. software diagnostics, control panels, etc.)	- How to diagnose the root cause of a printer symptom by considering different possible causes and ruling them out - The importance of proper documentation and tracking in the troubleshooting process - The strengths and weaknesses of different troubleshooting methods and tools for printers	- Troubleshoot and resolve common printer symptoms by following a systematic process - Evaluate and rule out different possible causes of a symptom - Use relevant troubleshooting methods and tools to diagnose and resolve the root cause of the symptom - Document the troubleshooting process and its results for future reference - Follow best practices and guidelines to prevent future problems.	

604	Troubleshoot mobile device issues.	948 - IT Essentials II	- Common mobile device symptoms (e.g. slow performance, battery life issues, software crashes, etc.) - Basic troubleshooting methodologies (e.g. top-down, trial-and-error, etc.) - Basic mobile device troubleshooting tools (e.g. software diagnostics, control panels, etc.)	- How to diagnose the root cause of a mobile device symptom by considering different possible causes and ruling them out - The importance of proper documentation and tracking in the troubleshooting process - The strengths and weaknesses of different troubleshooting methods and tools for mobile devices	- Troubleshoot and resolve common mobile device symptoms by following a systematic process - Evaluate and rule out different possible causes of a symptom - Use relevant troubleshooting methods and tools to diagnose and resolve the root cause of the symptom - Document the troubleshooting process and its results for future reference - Follow best practices and guidelines to prevent future problems.	
605	Integrate common preventative maintenance techniques for computers.	944 - Honors Introduction to Programming I 9XX - Honors Introduction to Programming II 945 - IT Essentials I 947 - Honors Game Design and Simulation 948 - IT Essentials II 952 - Introduction to Cybersecurity	- Common computer maintenance tasks (e.g. updating software, defragmenting hard drive, cleaning components, etc.) - Importance of preventative maintenance in maintaining computer health and performance - Best practices and guidelines for computer maintenance	- The impact of various maintenance tasks on computer health and performance - The interrelationship between different maintenance tasks and how they impact each other - The importance of following a regular maintenance schedule	- Integrate common preventative maintenance techniques into a regular maintenance schedule - Perform common computer maintenance tasks such as updating software, defragmenting hard drive, cleaning components, etc. - Follow best practices and guidelines to maintain computer health and performance - Document the maintenance process and its results for future reference	

					- Evaluate the results of the maintenance process and make changes or modifications as necessary.	
606	Identify basic computer and networking tools.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- Different categories of computer and networking tools (e.g. diagnostic, configuration, security, etc.) - Common examples of computer and networking tools (e.g. command prompt, IP scanner, antivirus software, etc.) - The purpose and function of different computer and networking tools	- The strengths and weaknesses of different computer and networking tools - The importance of choosing the right tool for a particular task - The impact of using the wrong tool for a task	- Identify basic computer and networking tools and categorize them based on their function - Evaluate different computer and networking tools to determine their strengths and weaknesses - Choose the appropriate tool for a particular task based on its function and suitability - Use the chosen tool effectively and efficiently to complete the task - Document the process and results of using computer and networking tools for future reference.	
607	Choose and utilize the appropriate hand tool for a given task.	948 - IT Essentials II 949 - Introduction to Networks				

700 Operating Systems and Software

Secondary Course Crosswalk					Assessment	
Item	Task	Know	Understand	Do		

701	Evaluate different operating systems by their features.	944 - Honors Introduction to Programming I 9XX - Honors Introduction to Programming II 945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- Types of operating systems, such as Windows, MacOS, and Linux - The features and capabilities of different operating systems - The strengths and weaknesses of each operating system	- The importance of choosing the right operating system based on the intended use - The compatibility of different operating systems with various hardware and software - The security and stability of different operating systems	- Research and compare different operating systems to determine which one best meets their needs - Install and configure the chosen operating system - Evaluate the performance, features, and stability of the operating system to ensure it meets their needs - Continuously monitor and update the operating system to maintain optimal performance and security.	
702	Use various user interfaces.	944 - Honors Introduction to Programming I 945 - IT Essentials I 947 - Honors Game Design and Simulation 948 - IT Essentials II 665 - Web Page Design	- Different types of operating systems and their user interfaces (e.g. Windows, MacOS, Linux) - Basic functions and features of operating system user interfaces - Basic navigation and control of the user interface	- The purpose of operating system user interfaces - How to access and use different parts of the user interface (e.g. start menu, desktop, file explorer) - How to customize the user interface to meet personal needs	- Install and set up an operating system with a chosen user interface - Navigate the user interface and access different parts and functions - Customize the user interface to meet personal needs - Troubleshoot basic user interface issues and problems.	
703	Install and configure an operating system.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing	- The different types of operating systems (Windows, MacOS, Linux, etc.) and their respective features - The requirements for installing the specific operating system chosen - The steps for installing the operating system and drivers	- The role of the operating system in controlling and managing the computer's hardware and software - The differences between a clean install and an upgrade - The importance of updating and patching the operating system regularly	- Gather the necessary information and tools before installing the operating system (product key, installation media, etc.) - Backup all important data before starting the installation process - Follow the steps to install the operating system, partition the hard drive, and	

		& Switching Essentials 665 - Web Page Design				format it - Test the operating system and make any necessary adjustments to ensure it is functioning properly.	
704	Select and use system utilities and tools and evaluate the results.	665 - Web Page Design 944 - Honors Introduction to Programming I 9XX - Honors Introduction to Programming II 947 - Honors Game Design and Simulation 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- Different types of system utilities and tools - Benefits and drawbacks of each tool - Purpose of each tool and its usage	- How each tool can be used to diagnose and resolve system issues - What information each tool provides and how it can be used to improve system performance	- Choose the appropriate system utilities and tools for a given situation - Evaluate the results of system tool usage to identify the root cause of a problem - Continuously learn about new system utilities and tools and incorporate them into daily workflow as necessary.		
705	Select the appropriate commands and options to troubleshoot and resolve problems.	944 - Honors Introduction to Programming I 9XX - Honors Introduction to Programming II 947 - Honors Game Design	- Available commands and options to troubleshoot and resolve problems - Common operating system and software issues	- The causes of common operating system and software issues - How to effectively use the available commands and options to troubleshoot and resolve problems	- Diagnose common operating system and software issues - Execute the appropriate commands and options to troubleshoot and resolve problems - Evaluate the effectiveness of the solution and make		

		and Simulation 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials			necessary adjustments	
706	Differentiate between various operating system directory structures.	945 - IT Essentials I 948 - IT Essentials II	- Types of operating systems (Windows, Mac OS, Linux) - The purpose of a directory structure in an operating system - Basic file and folder organization in a directory structure	- The difference between the directory structures of different operating systems - How the directory structure affects the organization and access to files and folders - The importance of a well-organized directory structure in terms of efficiency and ease of use	- Analyze the directory structure of a given operating system and explain its organization - Compare and contrast the directory structures of different operating systems - Evaluate the organization of a directory structure and make suggestions for improvement - Implement best practices for organizing and maintaining a well-structured directory structure.	
	RESERVED (707)	-				
708	Troubleshoot common operating system (OS) and software issues.	948 - IT Essentials II 952 - Introduction to Cybersecurity	- Basic knowledge of operating systems, including Windows, macOS, and Linux - Understanding of common operating system errors and software issues - Knowledge of the common	- How to diagnose the root cause of operating system and software issues - The importance of following best practices when troubleshooting operating systems and software - How to use the	- Perform basic troubleshooting techniques, such as updating software and restarting the computer - Use the command-line interface to resolve issues and run diagnostic tools - Follow best practices,	

			software and operating system tools used to troubleshoot issues.	command-line interface and other tools to resolve issues.	such as creating backups and researching solutions before implementing them. - Document the steps taken to resolve the issue and keep track of the solution for future reference.	
709	Use command-line interface.	944 - Honors Introduction to Programming I 945 - IT Essentials I 947 - Honors Game Design and Simulation 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials 665 - Web Page Design	- The basic syntax and commands of the command-line interface (CLI) - The purpose and functionality of the CLI - How to access the CLI on a computer	- The advantages of using the CLI over a graphical user interface (GUI) - The different modes of operation in the CLI, such as user mode and administrator mode - How to navigate the file system using the CLI - The common commands used for managing files and directories, such as 'cd', 'ls', and 'rm'	- Use the CLI to navigate and manipulate files and directories - Run commands to install, configure, and troubleshoot software issues - Use the CLI to access and configure network settings - Utilize the CLI to automate tasks using scripts and macros.	
710	Install, configure, and maintain application suite and system software.	944 - Honors Introduction to Programming I 9XX - Honors Introduction to Programming II 945 - IT Essentials I	- Understanding of different application suites and system software available in the market. - Knowledge of different operating systems and their system requirements. - Familiarity with software installation and	- Importance of regular software updates and maintenance. - Understanding of different compatibility issues and how to resolve them. - Awareness of the security risks associated with software and the importance of	- Select the appropriate application suite and system software for a specific situation based on the user's requirements. - Install the selected software according to the manufacturer's instructions. - Configure the software to	

		947 - Honors Game Design and Simulation 948 - IT Essentials II 949 - Introduction to Networks 665 - Web Page Design	configuration processes.	software firewalls.	meet the user's requirements. - Regularly check for software updates and install them as necessary. - Troubleshoot and resolve any software compatibility or security issues that arise. - Ensure that software firewalls are enabled and configured correctly.	
711	Implement virtualization technologies.	948 - IT Essentials II 954 - Routing & Switching Essentials	- Definition of client-side virtualization - Types of virtualization software and their differences - Purpose and benefits of client-side virtualization	- The relationship between hardware and software in client-side virtualization - The process of creating and managing virtual machines - The advantages and limitations of client-side virtualization	- Research and choose an appropriate virtualization software - Install the virtualization software and create virtual machines - Configure and test the virtual machines for performance and compatibility - Implement and manage virtual machines to optimize their performance and stability - Troubleshoot and resolve common issues in client-side virtualization, such as performance degradation and compatibility issues.	

712	Describe the interaction between software and hardware.	665 - Web Page Design 944 - Honors Introduction to Programming I 945 - IT Essentials I 947 - Honors Game Design and Simulation 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity	- Software and hardware are two essential components of a computer system. - Software is a set of programs and applications that run on a computer, while hardware refers to physical components such as the motherboard, processor, memory, and storage devices.	- The interaction between software and hardware is crucial for a computer to function properly. - The software communicates with the hardware to access and use the resources it needs to perform its tasks. - The hardware components are responsible for executing the instructions given by the software.	- Familiarize yourself with different types of software and hardware components. - Understand how to install, configure, and update software and hardware components. - Develop the ability to diagnose and troubleshoot issues that arise when software and hardware interact. - Practice using various software and hardware tools to monitor the performance of your computer system. - Continuously educate yourself on the latest technologies and advancements in software and hardware to stay up-to-date.	
713	Categorize technologies that support cloud computing.	954 - Routing & Switching Essentials				

800 Networking

Secondary Course Crosswalk					Assessment
Item	Task	Know	Understand	Do	

801	Recommend computer network type based on their scope of coverage.	944 - Honors Introduction to Programming I 9XX - Honors Introduction to Programming II 945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- Different types of computer networks: LAN, WAN, PAN, CAN, and MAN - Characteristics and benefits of each network type - Factors to consider when selecting a network type - The scope of coverage for each network type	- How to analyze the client's requirements and determine the appropriate network type - The impact of network type on data transfer speed, security, and cost	- Ask the client questions about their needs, budget, and goals for the network - Evaluate the client's requirements and determine the most appropriate network type - Provide a recommendation based on the client's needs, budget, and goals - Explain the benefits and limitations of the recommended network type to the client - Provide a detailed plan and timeline for implementing the recommended network type - Continuously monitor the network and make adjustments as needed to ensure optimal performance.	
802	Recommend internet technologies based on clients' requirements.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials 665 - Web Page Design	- The different internet technologies available, including broadband, fiber optic, satellite, and dial-up - The characteristics and limitations of each technology - The common uses for each technology	- How to assess the needs and requirements of clients, including the type of work they do, their location, and their budget - How to evaluate the suitability of each technology for the specific needs of each client	- Research and gather information on the different internet technologies available - Evaluate the needs and requirements of each client and make recommendations based on their specific situation - Explain the benefits and limitations of each technology to the client and provide a clear comparison between the different options - Provide support and assistance to the client	

					throughout the process of selecting and setting up the appropriate internet technology.	
803	Identify networking fundamentals, technologies, devices, and protocols.	9XX - Honors Introduction to Programming II 945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials 665 - Web Page Design	- Networking fundamentals such as LAN, WAN, and internet - Basic networking devices such as switches, routers, and firewalls - Network protocols such as TCP/IP, HTTP, FTP, DNS, and DHCP - Types of wired and wireless networks	- The purpose of each networking device - How each network protocol functions - The differences between different types of networks - The importance of network security	- Install and configure basic networking devices - Identify the appropriate network protocol for a specific situation - Implement basic network security measures - Troubleshoot network connectivity issues - Install and test network cables and connectors	
804	Fabricate and install test network cables, connectors, and basic network infrastructure.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- Types of network cables and connectors, including Cat5, Cat6, and fiber optic. - Types of network infrastructure, including switches, routers, and firewalls. - Basic fabrication techniques for network cables, such as crimping and punching down connectors.	- The differences and uses of each type of network cable and connector. - The purpose and function of each component of a network infrastructure. - How to properly terminate network cables and connectors.	- Choose the appropriate network cable and connector for a specific network installation. - Assemble a basic network infrastructure with switches, routers, and firewalls. - Fabricate and install network cables and connectors, ensuring proper termination and testing.	

805	Compare and contrast various types of wired and wireless networks.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- Types of wired networks: Ethernet, Token Ring, and FDDI - Types of wireless networks: Wi-Fi, Cellular, and Bluetooth	- The differences between wired and wireless networks in terms of speed, cost, and range - The advantages and disadvantages of each type of wired and wireless network	- Evaluate the needs of a specific situation to determine the best type of network to use - Compare and contrast different types of networks to determine the best fit for a specific scenario - Install and configure the appropriate type of network for a specific scenario, considering factors such as speed, cost, and range.	
806	Use computer tools to troubleshoot problems of network connectivity.	948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- Types of network tools such as ping, traceroute, and nslookup - Types of network connectivity issues such as IP address conflict, DNS resolution issues, and routing problems - Basic concepts of TCP/IP, DNS, and routing	- How to use network tools to diagnose network connectivity problems - How to interpret the results of network tools to determine the root cause of the problem - How to troubleshoot common network connectivity issues	- Use network tools to diagnose network connectivity problems - Interpreting the results of network tools to determine the root cause of the problem - Troubleshoot common network connectivity issues such as IP address conflict, DNS resolution issues, and routing problems - Configure network settings to resolve connectivity issues - Document the steps taken to resolve the problem for future reference and for sharing with others who may encounter similar issues.	

807	Install and configure a small office/home office (SOHO) network.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- Understanding of small office/home office network requirements and components, including routers, switches, firewalls, and access points. - Knowledge of IP addressing, subnetting, and DHCP configuration. - Familiarity with different types of SOHO networks, such as wired, wireless, and hybrid.	- The importance of security measures in SOHO networks, such as firewalls, password protection, and encryption. - The impact of network architecture on the speed and reliability of the network. - The significance of network monitoring and maintenance for ongoing performance and stability.	- Install and configure a router, switch, firewall, and access points for a SOHO network. - Allocate IP addresses and configure DHCP. - Set up security measures such as firewalls, password protection, and encryption. - Test the network and ensure it is operating as expected. - Perform regular monitoring and maintenance to ensure network stability and performance.	
808	Install and configure network resources.	945 - IT Essentials I 948 - IT Essentials II 949 - Introduction to Networks 954 - Routing & Switching Essentials	- Different types of network resources (printers, servers, switches, routers, etc.) - Network topologies (star, bus, ring, mesh) - Basic network protocols (TCP/IP, DNS, DHCP) - Network cabling (UTP, STP, Fiber) - Network security measures (firewall, encryption, access control)	- The purpose and function of each network resource - How each network resource is connected and communicates with other resources - How to plan and design a network based on the organization's needs and requirements - The importance of network security and how to implement it	- Install network resources such as printers, servers, switches, routers, etc. - Configure network resources such as IP addresses, subnets, gateways, etc. - Connect and test network devices to ensure proper communication - Implement security measures such as firewalls, access control, and encryption - Troubleshoot common network issues such as connectivity problems, IP conflicts, and security breaches.	

900 Security

Secondary Course					
Item	Task	Crosswalk	Know	Understand	Do
Assessment					
901	Follow the ethical, legal and security requirements related to handling data.	All Classes	- The importance of data protection and privacy - Ethical and legal requirements for handling data - Common security practices for protecting data	- The consequences of unethical or illegal handling of data - How to identify and protect sensitive information - The purpose and importance of data protection laws	- Implement data protection and security measures - Follow ethical and legal guidelines for handling data - Understand the confidentiality and privacy agreements when handling sensitive information - Ensure secure storage and transfer of data - Regularly update and maintain data protection measures.
902	Implement and identify security features including wireless encryption and malicious software protection.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- The basics of wireless encryption and how it works to secure data transmission over a wireless network. - Different types of malicious software (malware), their effects on a computer, and how to detect them.	- The importance of implementing security features to protect against potential threats to the network and its users. - The benefits and limitations of different types of wireless encryption and how to choose the most appropriate method for a given situation. - How to identify and prevent common methods used by malware to infect a computer, such as email attachments, infected websites, and software vulnerabilities.	- Implement wireless encryption on a wireless network, using methods such as WEP, WPA, and WPA2. - Use anti-malware software and update it regularly to protect against new threats. - Monitor the network and its users for signs of malware activity and take appropriate action to remove it if necessary. - Educate users on best practices for avoiding malware infections, such as not opening attachments from unknown sources and keeping software up-to-date.

903	Implement and identify security, password management, locking workstations, and biometrics.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- The importance of securing computer systems and data to prevent unauthorized access - The various security measures that can be used, including passwords, locking workstations, biometrics, and firewalls - The differences between strong and weak passwords, and how to create a secure password	- How to implement security measures to protect computer systems and data - The different types of biometric authentication, such as fingerprint recognition and facial recognition - The impact of weak passwords and unprotected systems on security and privacy	- Implement strong passwords and change them regularly - Lock the computer screen when leaving the workstation - Use biometric authentication where available to add an extra layer of security	
904	Troubleshoot, remove, and prevent viruses and malware.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity	- What viruses and malware are and how they can harm computer systems and networks - The different types of viruses and malware, including viruses, Trojans, spyware, and adware - The signs that a computer may be infected with a virus or malware	- How viruses and malware can spread and infect computer systems - The importance of regularly updating security software and systems to prevent infection - The impact of viruses and malware on computer systems and networks, including decreased performance and lost data	- Regularly update all security software and systems to stay protected from new threats - Avoid opening suspicious emails or downloading unknown files - Keep backup copies of important data in a secure location - Use antivirus and anti-malware software and keep it up to date - Scan the computer regularly for viruses and malware	
905	Implement security and troubleshoot common issues.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity 954 - Routing				

906	Address the ethical, security, and privacy issues involved in posting information about yourself and others on social networking sites, e.g., blogs.	& Switching Essentials 945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity 665 - Web Page Design	- The basics of online privacy, security, and ethics as it relates to social media and blogging - The different types of personal information that can be shared online, including name, address, phone number, and photos	- The consequences of posting personal information on social media and blogs, including identity theft, harassment, and cyberbullying - The importance of protecting personal information online and respecting the privacy of others - The ethical considerations involved in sharing personal information, including truthfulness, accuracy, and respect for others	- Evaluate the privacy settings on all social media and blogging accounts to ensure personal information is protected - Avoid sharing personal information that can be used to identify or locate an individual, such as home address or phone number - Think before posting, considering the potential impact of what is being shared - Report any instances of cyberbullying or harassment to the appropriate authorities	
907	Implement industry standard practices dealing with user account management.	945 - IT Essentials I 948 - IT Essentials II 952 - Introduction to Cybersecurity 954 - Routing & Switching Essentials	- The importance of user account management in ensuring the security of a computer system - The basic concepts of user account management, including password policies, user roles and permissions, and user authentication	- The role of user account management in preventing unauthorized access to a computer system - The different types of user accounts, including administrative, standard, and guest accounts - The significance of password policies in ensuring the security of user accounts - The importance of defining user roles and permissions to limit access to sensitive data and systems	- Implement strong password policies, including requirements for password length, complexity, and regular updates - Create user accounts for all users, assigning appropriate roles and permissions based on their job requirements - Enable two-factor authentication for all user accounts to increase security - Regularly monitor and audit user accounts to detect any unauthorized changes or activity	

					- Provide training to users on the importance of password security and safe computer usage practices	
908	Perform basic forensic concepts, e.g., incident response, chain of custody, and evidence preservation, and documentation.	948 - IT Essentials II 952 - Introduction to Cybersecurity	- The importance of forensic concepts in Cybersecurity - The basic steps involved in incident response, chain of custody, evidence preservation, and documentation - The types of evidence that can be used in Cybersecurity investigations	- The importance of incident response in mitigating the damage caused by a cyberattack - The significance of chain of custody in ensuring the integrity of evidence - The proper methods of preserving digital evidence to prevent contamination or alteration - The role of documentation in recording the details of an investigation and building a case	- Follow established incident response procedures to quickly contain and mitigate the damage caused by a cyberattack - Secure and preserve the evidence, maintaining a clear chain of custody - Document all steps taken during the investigation, including the collection, preservation, and analysis of evidence - Ensure that all evidence is collected in a manner that will withstand legal scrutiny - Follow established evidence preservation procedures to prevent contamination or alteration of evidence - Document the details of the investigation, including all relevant information such as date, time, and the actions taken - Ensure that all documentation is complete, accurate, and professional.	
909	Explain disaster recovery best practices and implementation.	roduction to Cybr				

1000 Communication and Professionalism

Secondary Course					
Item	Task	Crosswalk	Know	Understand	Do
Assessment					
1001	Use effective soft skills such as proper etiquette, active listening, and cultural sensitivity.	All Classes	- The importance of effective communication in customer service - The basic principles of effective communication - The role of active listening and empathy in communication with customers	- The impact of communication on customer satisfaction and loyalty - The importance of clear, concise, and professional communication - The impact of tone, body language, and nonverbal communication on customer interactions	- Listen actively to customers and their needs - Show empathy and understanding towards the customer's situation - Use clear, concise, and professional language in communication with customers - Pay attention to tone, body language, and nonverbal communication in customer interactions - Avoid using jargon or technical language that the customer may not understand - Respond promptly and professionally to customer inquiries and requests - Continuously improve communication skills through practice and feedback.

1002	Solve customer and client problems.	All Classes	- The importance of solving customer and client problems - The basic steps in the problem-solving process - The role of active listening and empathy in solving customer and client problems	- The impact of unresolved customer and client problems on business relationships - The importance of clear communication and active listening in problem-solving - The benefits of a systematic and proactive approach to problem-solving	- Listen actively to customer and client concerns and complaints - Show empathy and understanding towards the customer's or client's situation - Ask questions to clarify the nature of the problem - Identify and prioritize potential solutions to the problem - Evaluate the consequences and potential impact of different solutions - Implement the most appropriate solution and follow up with the customer or client - Document the problem and its resolution for future reference and to continuously improve the problem-solving process.	
1003	Utilize the team approach to deliver client service.	All Classes	- The importance of teamwork in client service - The role of different team members in delivering client service - The benefits of a team approach to client service	- The interdependence of team members in delivering client service - The impact of individual behavior on the team's ability to deliver client service - The importance of clear communication and collaboration in a team environment	- Participate actively and constructively in team meetings and discussions - Foster a positive and collaborative team dynamic - Communicate effectively and regularly with team members - Take ownership of individual tasks and responsibilities within the team - Provide constructive	

					feedback to team members - Support and help other team members as needed	
	RESERVED (1004)	-				
1005	Describe an appropriate professional social media and remote workplace presence.		- The purpose and benefits of professional social media presence - The importance of maintaining a professional online reputation - The consequences of unprofessional online behavior	- The relationship between professional social media presence and reputation - The impact of online behavior on personal and professional life - The need for a balanced and professional approach to social media presence	- Research and understand the guidelines and best practices for professional social media presence - Develop and maintain a professional online profile and presence on social media platforms - Avoid posting unprofessional or controversial content online - Interact with others in a respectful and professional manner online	
1006	Understand and create industry standard documentation, policies, procedures, and best practices.	All Classes	- The importance of standard documentation, policies, procedures, and best practices in the IT industry - Common formats and templates used for creating industry standard documentation, policies, procedures, and best practices - Key elements of standard documentation, policies, procedures, and best practices (e.g. purpose, scope, responsibilities, procedures, etc.)	- The relationship between standard documentation, policies, procedures, and best practices and the overall functioning and success of an IT organization - The impact of using inconsistent or outdated documentation, policies, procedures, and best practices - The need for regular review and updates to ensure documentation, policies, procedures, and best practices remain relevant and effective	- Create industry standard documentation, policies, procedures, and best practices using templates and established formats - Document the purpose, scope, responsibilities, and procedures for each element of standard documentation, policies, procedures, and best practices - Ensure documentation, policies, procedures, and best practices are consistent, accurate, and up-to-date - Regularly review and update documentation, policies, procedures, and	

					best practices as necessary to ensure they remain relevant and effective - Communicate and educate stakeholders on the importance and contents of standard documentation, policies, procedures, and best practices.	
1007	Identify appropriate computer equipment and peripheral for a specific situation and budget.	945 - IT Essentials I 947 - Honors Game Design and Simulation 948 - IT Essentials II 954 - Routing & Switching Essentials	- Different categories of computer equipment and peripherals (e.g. desktop computers, laptops, printers, monitors, etc.) - The various specifications and features of different computer equipment and peripherals (e.g. processing power, memory, storage, etc.) - The relationship between cost and performance of computer equipment and peripherals	- How to evaluate the specific needs and requirements of a situation to determine the appropriate computer equipment and peripheral - The impact of budget constraints on the selection of computer equipment and peripheral - The importance of balancing cost and performance in selecting computer equipment and peripherals	- Identify the specific needs and requirements of a situation to determine the appropriate computer equipment and peripheral - Evaluate the available options of computer equipment and peripherals based on their specifications, features, cost, and performance - Choose the appropriate computer equipment and peripheral that best fits the specific situation and budget - Document the process and results of selecting computer equipment and peripherals for future reference - Evaluate the chosen computer equipment and peripheral to ensure it meets the specific needs and requirements of the situation.	
1008	Implement and adhere to acceptable use policies.	All Classes				
1009	Maintain asset inventory.	Introduction to Net				

		ing & Switching					
1010	Evaluate the impact of new and emerging technologies.	All Classes					