CompuScholar, Inc.

Alignment to South Carolina **IT Fundamentals (5025)**

South Carolina Course Details:

Course Title:	5025 - IT Fundamentals
Grade Level:	7th - 10th
Standards Link:	IT Fundamentals (April 2023 Version)

CompuScholar Course Details:

Course Title:	CompuScholar: Digital Savvy
Course ISBN:	978-0-9887070-8-5
Course Year:	2024

Note 1: Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

Note 2: Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course, unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or reinforce the main lesson concepts, and the Lesson Text contains full details.

Note 3: "Supplemental" or "Suppl." citation(s) refer to Supplemental chapters included at the end of the course.

Course Description

The IT Fundamentals course is designed to prepare the student to take the CompTIA IT Fundamentals (ITF+ Exam FC0-U61) certification exam. Instruction includes IT concepts and terminology, infrastructure, applications and software, software development Concepts, Database Fundamentals, Security, emerging technologies, computational thinking, and career development.

Course Standards

A. SAFETY	CITATION(S)
1. Identify major causes of work-related accidents in offices.	Chapter 24, Lesson 3
2. Demonstrate appropriate ergonomic practices.	Chapter 24, Lesson 3 Suppl. Chapter 3, Lesson 1
3. Describe the threats to a computer network, methods of avoiding attacks, and options in dealing with virus attacks.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
4. Identify potential abuse and unethical uses of computers and networks.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2

5. Explain the consequences of illegal, social, and unethical uses of information technologies (e.g., piracy; illegal downloading; licensing infringement; and inappropriate uses of software, hardware, and mobile devices).	Chapter 8 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
6. Differentiate between freeware, shareware, and public domain software copyrights.	Chapter 8, Lesson 5
7. Discuss computer crimes, terms of use, and legal issues such as copyright laws, fair use laws, and ethics pertaining to scanned and downloaded clip art images, Creative Commons, photographs, documents, video, recorded sounds and music, trademarks, and other elements for use in Web publications.	Chapter 8, Lessons 2, 4, 5
8. Identify netiquette including the use of email, social networking, blogs, texting, and chatting.	Chapter 8, Lesson 4 Chapter 16, Lessons 1, 2 Chapters 17, 18
9. Describe ethical and legal practices in business professions such as safeguarding the confidentiality of business-related information.	Chapter 8, Lessons 2, 3, 4
10. Discuss the importance of cyber safety and the impact of cyber bullying.	Chapter 8, Lessons 1, 4 Chapter 17, Lesson 1 Chapter 18, Lesson 4

B. STUDENT ORGANIZATIONS	CITATION(S)
1. Identify the purpose and goals of a Career and Technology Student Organization (CTSO).	Suppl. Chapter 3, Lesson 2
2. Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.	Suppl. Chapter 3, Lesson 2
3. Explain the benefits and responsibilities of being a member of a CTSO.	Suppl. Chapter 3, Lesson 2
4. List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.	Suppl. Chapter 3, Lesson 2
5. Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.	Suppl. Chapter 3, Lesson 2

C. TECHNOLOGY KNOWLEDGE	CITATION(S)
1. Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation.	Chapters 7, 9, 10, 11, 15, 16 (Common workplace apps)
2. Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.	Chapter 8, Lesson 4 Chapter 16, Lessons 1, 2 Chapters 17, 18
3. Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2

4. Explain the consequences of social, illegal, and unethical uses of technology (e.g., piracy; illegal downloading; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).	Chapter 8 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
5. Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, and other elements for personal use.	Chapter 8, Lessons 2, 4, 5
6. Describe ethical and legal practices of safeguarding the confidentiality of business-related information.	Chapter 8, Lessons 2, 3, 4
7. Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2

D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS	CITATION(S)
1. Demonstrate creativity and innovation.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
2. Demonstrate critical thinking and problem-solving skills.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
3. Demonstrate initiative and self-direction.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
4. Demonstrate integrity.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
5. Demonstrate work ethic.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
6. Demonstrate conflict resolution skills.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
7. Demonstrate listening and speaking skills.	Many opportunities throughout the course, e.g.: Chapter 11, Lesson 6 Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
8. Demonstrate respect for diversity.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects) Suppl. Chapter 1, Lessons 1, 3

9. Demonstrate customer service orientation.	Chapter 24, Lesson 2
10. Demonstrate teamwork.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)

E. PROFESSIONAL KNOWLEDGE	CITATION(S)
1. Demonstrate global or "big picture" thinking.	Chapter 13, Lesson 2 Chapters 14 & 25, Activity 1 Suppl. Chapter 1, Lesson 1
2. Demonstrate career and life management skills and goal-making.	Chapter 13, Lesson 2 Chapter 14, Activity 1 Chapter 25, Activity 1
3. Demonstrate continuous learning and adaptability skills to changing job requirements.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 1 Chapters 14, 25 (Team Projects)
4. Demonstrate time and resource management skills.	Chapter 13, Lesson 2 Chapter 24, Lesson 2 Chapters 14, 25
5. Demonstrates information literacy skills.	Chapters 7, 10, 12
6. Demonstrates information security skills.	Chapter 8, Lessons 1 - 4 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
7. Demonstrates information technology skills.	Throughout the course, e.g. Chapters 3, 4, 5, 6
8. Demonstrates knowledge and use of job-specific tools and technologies.	Chapters 7, 9, 10, 11, 15, 16 (Common workplace apps)
9. Demonstrate job-specific mathematics skills.	Chapter 10, Lesson 6 Chapter 10, Activity 2 Chapter 23, Lessons 1, 2 Chapter 23 Activity Suppl. Chapter 2, Lessons 1, 3
10. Demonstrates professionalism in the workplace.	Chapter 13, Lessons 1, 3 Chapter 24, Lesson 2 Chapters 14, 25 (Team Projects)
11. Demonstrate reading and writing skills.	Many opportunities, e.g. Chapter 2, Lesson 5 Chapter 7 Activity Chapter 14, Activity 1
12. Demonstrates workplace safety.	Chapter 8, Lesson 1 Chapter 18, Lesson 4 Chapter 24, Lesson 3

F. IT CONCEPTS AND TERMINOLOGY	CITATION(S)
1. Compare and contrast notational systems (e.g., binary, hexadecimal, ASCII, unicode).	Suppl. Chapter 2, Lessons 1, 3
2. Compare and contrast fundamental data types and their characteristics.	Chapter 23, Lesson 1 Suppl. Chapter 2, Lesson 1
3. Illustrate the basics of computing and processing.	Chapter 1, Lesson 2 Chapters 22, 23 Suppl. Chapter 2, Lessons 1 - 4
4. Explain the value of data and information.	Chapter 8, Lessons 2, 5 Chapter 10, Lessons 5, 6 Chapter 12, Lesson 5 Chapter 23, Lesson 1
5. Compare and contrast common units of measure (e.g., bit/byte, KB, MB, GB).	Suppl. Chapter 2, Lesson 1
6. Explain the troubleshooting methodology.	Chapter 5, Lesson 3

G. INFRASTRUCTURE	CITATION(S)
1. Classify common types of input/output device interfaces (e.g., networking, peripheral device, graphic device).	Chapter 1, Lesson 2, 3
2. Design efficient device placement to create optimum airflow, humidity, temperature, and dust accumulation.	Chapter 5, Lesson 1
3. Differentiate various computer connector/ports, (e.g., video, eSATA, thunderbolt, USB, HDMI, ethernet, RJ-45, RJ-11, audio, and power).	Chapter 1, Lesson 3 Chapter 6, Lesson 1
4. Set up and install peripheral devices to a laptop or PC.	Chapter 1, Lesson 3 & Activity
5. Identify the primary causes of electrostatic discharge and ways to mitigate the effects of ESD on electronic devices.	Chapter 5, Lesson 1
6. Identify situations where various power peripherals should be used (e.g., UPS, surge protector, power strip).	Chapter 5, Lesson 1
7. Explain the purpose of common internal computing components (e.g., motherboard/system board, RAM, CPU, storage, NIC).	Chapter 1, Lesson 2 Chapter 6, Lesson 1
8. Compare and contrast common Internet service types (e.g., fiber optic, cable, DSL).	Chapter 6, Lesson 1
9. Compare and contrast storage types (e.g., volatile vs. non-volatile, local storage types, local network storage types, cloud storage).	Chapter 1, Lesson 2 Chapter 4, Lessons 1, 4
10. Compare and contrast common computing devices and their purposes (e.g., mobile phones. gaming consoles, IoT (internet of things), security systems, IP (internet protocol) camera).	Chapter 1, Lessons 1, 2
11. Explain basic networking concepts (e.g., DNS, LAN vs WAN, IP address, HTTP/S, POP, IMAP, SMTP, modem, switch, firewall, VOIP).	Chapter 6

12. Explain the basic features and functions of wireless devices (e.g., airdrop, unlocking/security, bluetooth pairing, wireless connection setup, mail configuration, airplane mode).	Chapter 1, Lesson 1
13. Configure and secure a basic wireless network.	Suppl. Chapter 3, Lesson 5
14. Describe Material Safety Data Sheets (MSDS).	Chapter 24, Lesson 3

H. APPLICATIONS AND SOFTWARE	CITATION(S)
1. Explain the purpose of operating systems.	Chapter 2, Lesson 1 Chapter 3, Lesson 1
2. Compare and contrast common mobile and desktop operating systems and their functions and features for Android, Linux, iOS, Windows, and Chrome OS.	Chapter 3, Lesson 1
3. Compare and contrast components of an operating system (e.g., File systems and features, File management, Services, Processes, Drivers, Utilities, Interfaces).	Chapter 2, Lessons 2, 4 Chapters 3, 4
4. Explain the purpose and proper use of software (e.g., Productivity software, Collaboration Software, Business software, virtualization, open source).	Chapters 2, 9, 10, 11, 15, 16
5. Describe software compatibility in relationship to operating systems.	Chapter 2, Lesson 4
6. Identify common file types and their extensions (e.g., documents, audio, images, video, executables, and compression formats).	Chapter 4, Lessons 1, 3
7. Explain methods of application architecture and delivery models (e.g., Application delivery methods, Network required, Application architecture).	Chapter 3, Lesson 3
8. Given a scenario, configure and use web browsers.	Chapter 2, Lesson 3 Chapter 7, Lesson 1
9. Compare and contrast general application concepts and uses.	Chapter 2, Lessons 1, 2, 3

I. SOFTWARE DEVELOPMENT CONCEPTS	CITATION(S)
1. Compare and contrast programming language categories.	Chapter 22, Lesson 1
2. Use programing organizational techniques and interpret logic.	Chapter 22, Lesson 3 Chapter 23
3. Explain the purpose and use of programming concepts.	Chapters 22, 23

J. DATABASE FUNDAMENTALS	CITATION(S)
1. Explain database concepts and the purpose of a database.	Chapter 12, Lessons 1, 2
2. Compare and contrast various database structures (e.g., structured vs. semi-structured vs. non-structured, relational databases, non-relational databases).	Chapter 12, Lesson 1
3. Summarize methods used to interface with databases (e.g., relational methods such as data manipulation or data definition, database access methods, export/import).	Chapter 12, Lessons 3, 4, 5

K. SECURITY	CITATION(S)
1. Research and discuss common security threats found in IT.	Chapter 8, Lessons 1, 2, 3 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
2. Summarize confidentiality, integrity and availability concerns (e.g., confidentiality, integrity, availability concerns).	Chapter 8, Lesson 2
3. Explain methods to secure devices and best practices (e.g., antivirus software, enabling passwords, validating legitimate sources, removal of malicious software).	Chapter 8, Lessons 1, 2, 3 Chapter 18, Lesson 4 Suppl. Chapter 1, Lesson 2
4. Summarize methods and concepts used in IT behavioral security concepts.	Chapter 8, Lessons 2, 3
a. Expectations of privacy when using various computing applications or devices	Chapter 8, Lesson 1 Chapter 17, Lesson 1 Chapter 18, Lesson 4
b. Acceptable Use Policy and Procedures	Chapter 8, Lesson 4
c. Handlings of confidential information	Chapter 8, Lessons 2, 4
5. Compare and contrast authentication, non-repudiation, authorization, and accounting concepts (e.g., biometrics, video, digital signatures).	Chapter 8, Lesson 2
6. Explain password best practices (e.g., length, complexity).	Chapter 8, Lessons 1, 3
7. Explain common uses of encryption (e.g., HTTPS, VPN).	Chapter 6, Lessons 2, 6 Chapter 8, Lesson 3 Suppl. Chapter 2, Lesson 3
8. Explain business continuity concepts (e.g., disaster recovery, redundancy, data backup, contingency plans).	Chapter 5, Lesson 2 Chapter 8, Lesson 2

L. EMERGING TECHNOLOGIES (OPTIONAL)	CITATION(S)
1. Research the field of emerging technologies.	Chapter 2, Lesson 5 Suppl. Chapter 1, Lesson 4
2. Identify the following emerging technologies and their purpose (e.g., AR/VR, Artificial Intelligence, blockchain, chatbots, cloud computing, dynamic network analysis, gesture- based interaction, marketing automation, podcasting, predictive analytic, predictive sales, streaming media (audio/video), telepresence).	Chapter 2, Lesson 5
3. Research and present an emerging technology to solve a real-world problem.	Chapter 2, Lesson 5 Suppl. Chapter 1, Lesson 4

M. COMPUTATIONAL THINKING	CITATION(S)
1. Apply strategies for identifying routine hardware and software problems current to everyday life.	Chapter 5, Lesson 3 Chapter 6, Lesson 4
2. Identify compatibility issues and describe operational problems caused by hardware errors.	Chapter 5, Lesson 3 & Activity
3. Explain how technology can be used to solve problems.	Chapter 5, Lesson 3 & Activity
4. Explain the software development process used to solve problems.	Suppl. Chapter 2, Lesson 6
5. Explore commonly used documentation tools for design specifications (e.g., flowcharts, visual and textual storyboards).	Chapter 22, Lesson 3 Chapter 25, Activity 1

N. CAREER DEVELOPMENT	CITATION(S)
1. Compare and contrast careers in IT/IS with their education, training requirements, industry certifications and salary ranges.	Chapter 24, Lesson 1 Chapter 24 Activity
2. Describe how computing enhances other career fields.	Chapter 24 Activity Suppl. Chapter 2, Lesson 5 Suppl. Chapter 3, Lessons 3, 4
3. Connect with colleges and companies by using various networking platforms	Chapter 18, Lesson 3 Chapter 24, Lesson 1 Chapter 24 Activity Suppl. Chapter 3, Lesson 2