Information Technology Career Cluster
Information Technology Essentials
Course Number: 11.41400

Course Description:

Can you fix it? What is wrong with it? Students taking this course will develop a skill set to solve computer problems, perform preventive maintenance, and explain functions of purposes of computer elements. Existing in a world full of computer technology, students will gain practical experience in assembling a computer system, installing an operating system, troubleshooting computers and peripherals, and using system tools and diagnostic software.

Various forms of technologies will be used to expose students to resources, software, and applications of computer repair. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organizations are integral components of both the employability skills standards and content standards for this course.

Information Technology (IT) Essentials is the second course in the Information Support and Services pathway in the Information Technology cluster. Students enrolled in this course should have successfully completed Introduction to Hardware Technology.

Course Standard 1

IT-ITE-1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

1.1   Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Georgia Department of Education

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and Mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem-solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

1.4   Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5   Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply teamwork skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6   Present a professional image through appearance, behavior, and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism

International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

Course Standard 2

IT-ITE-2
Review and update personal online career portfolio.
- 2.1 Review and update résumé to reflect new knowledge and skills mastery and additional work experience.
- 2.2 Compose an additional cover letter seeking employment for a position representative of new skills, knowledge, and work experience.
- 2.3 Replace outdated transcripts to reflect current courses successfully completed.
- 2.4 Review and revise existing artifacts to bring them up to date with new skills mastered, as necessary.
- 2.5 Identify and upload additional industry-appropriate artifacts reflective of mastered skills throughout this course. Write and include a reflective entry for each artifact discussing steps taken, problems encountered and how they were overcome, and other pertinent information about the learning.

Course Standard 3

IT-ITE-3
Work safely with a variety of workplace technologies to solve problems and operate an efficient workplace.
- 3.1 Utilize multiple troubleshooting methods (remote and on-site) to identify problems, refine hypotheses, and repair computer systems.
- 3.2 Operate and maintain computer workstations in a computer repair lab.
- 3.3 Safely use diagnostic equipment in the computer repair lab.
- 3.4 Identify reference material appropriate to the computer industry that can serve as a resource for troubleshooting and using workplace technologies for productivity.
- 3.5 Apply appropriate troubleshooting techniques to identify hardware and software computer problems.
- 3.6 Research past, present, and future computer related technologies.
- 3.7 Utilize appropriate hardware and software troubleshooting tools to identify and isolate computer problems.
- 3.8 Understand appropriate record keeping for repair tracking and analysis of historical troubleshooting methodologies.
- 3.9 Develop a critical mindset towards lifecycle management of hardware, software, and associative tools.

Course Standard 4

IT-ITE-4
Identify the fundamental principles of personal computers by examining the hardware components and the interactions with component.
- 4.1 Identify the names, describe the purpose of and with other computer hardware components, explain the function, and summarize the characteristics of storage devices, motherboards, power supplies, processor/ tablets/ CPUs, memory, display devices, input devices, adapter cards, ports and cables, and cooling systems.

4.2 Describe the different peripherals currently available as well as the installation and configured process to operate them.

Course Standard 5

IT-ITE-5
Install, configure, optimize, and upgrade personal computer components.
5.1 Add, remove, and configure internal and external storage devices.
5.2 Recognize data integrity requirements for storage devices including both legal and historical record keeping purposes.
5.3 Describe how to preserve data from storage devices including long term storage and appropriate instances for reusing of storage media.
5.4 Drive preparation of internal storage devices including format/file systems and imaging technology.
5.5 Install display devices.
5.6 Add, remove, and configure basic input and multimedia devices.
5.7 Recognize and isolate issues with display, power, basic input devices, storage, memory, thermal, and POST errors (e.g., Basic Input/Output System (BIOS), hardware).
5.8 Apply basic troubleshooting techniques, remote and on-site, to check for problems (e.g., thermal issues, error codes, power connections including cables and/or pins, compatibility, functionality, software/drivers) with components.
5.9 Develop an understanding of remote support software and remote troubleshooting.

Course Standard 6

IT-ITE-6
Use tools, diagnostic procedures and troubleshooting techniques for personal computer (PC) and laptop components.
6.1 Recognize the basic aspects of troubleshooting theory.
6.2 Identify and apply basic diagnostic procedures and troubleshooting techniques.
6.3 Recognize and isolate issues with display, power, basic input devices, storage, memory, thermal, and POST errors (e.g., Basic Input/Output System (BIOS), hardware) to determine whether it is more advantageous to repair or replace.
6.4 Apply basic troubleshooting techniques to check for problems (e.g., thermal issues, error codes, power connections including cables and/or pins, compatibility, functionality, software/drivers) with components to determine whether it is more advantageous to repair or replace.
6.5 Recognize the names, purposes, characteristics, and appropriate application of tools.
6.6 Develop an understanding of troubleshooting tiers and be able to describe the differentiation between the levels of troubleshooting such as Help Desk and Deskside Technicians.
6.7 Use procedures and techniques to diagnose power conditions, video, keyboard, pointer, and wireless card issues.

Course Standard 7

IT-ITE-7
Perform preventive maintenance on personal computer components.
7.1 Apply basic aspects of preventive maintenance theory.

7.2　Apply common preventive maintenance techniques to computer components.

7.3　Develop an understanding of software preventative maintenance cycles such as operating system (OS) patching, application patching, and security system patching.

Course Standard 8

IT-ITE-8
Install, configure, optimize, and upgrade laptops and portable devices.

8.1　Identify names, purposes, and characteristics of laptop-specific hardware.

8.2　Distinguish between mobile and desktop motherboards and processors including throttling, power management, and Wi-Fi.

8.3　Configure power management and the cooling of portable devices.

8.4　Demonstrate safe removal of laptop-specific hardware such as peripherals, hot-swappable external devices, and internal components.

Course Standard 9

IT-ITE-9
Install, configure, and upgrade operating systems.

9.1　Explain the differences between operating systems (e.g. Mac, Windows, Linux) and describe operating system revision levels, including graphical user interface (GUI), system requirements, application, and hardware compatibility.

9.2　Identify names, purposes, and characteristics of the primary operating system components including registry, virtual memory, and file system.

9.3　Describe features of operating system interfaces.

9.4　Identify the names, locations, purposes, and characteristics of operating system files.

9.5　Identify concepts and procedures for creating, viewing, managing disks, directories, and files in operating systems.

9.6　State the functions of an operating system.

9.7　Apply procedures for upgrading and installing operating systems by installing and adding devices including loading device drivers and required software.

Course Standard 10

IT-ITE-10
Identify tools, diagnostic procedures, and troubleshooting techniques for operating systems.

10.1　State and apply basic boot sequences, methods, and utilities for recovering operating systems.

10.2　Apply diagnostic procedures and troubleshooting techniques.

10.3　Resolve common operational issues such as blue screen, system lock-up, and Windows-specific printing problems (e.g., print spool stalled, incorrect/incompatible driver for print).

10.4　Explain common error messages and codes.

10.5　Identify the names, locations, purposes, and characteristics of operating system utilities.

10.6　Explain and identify ways to research online trouble shooting techniques.

10.7　Perform preventive maintenance for operating systems using utilities for performing preventive maintenance on operating systems: for example, software and Windows updates (e.g., service packs), scheduled backups/restore, and restore points.

Course Standard 11

IT-ITE-11
Explore how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects, entrepreneurship development, and competitive events.

11.1 Explain the goals, mission, and objectives of Future Business Leaders of America (FBLA) and/or Technology Student Association (TSA) and/or SkillsUSA.

11.2 Explore the impact and opportunities a student organization (FBLA, TSA, SkillsUSA) can develop to bring business and education together in a positive working relationship through innovative leadership and career development programs.

11.3 Explore the local, state, and national opportunities available to students through participation in related student organizations (FBLA, TSA, SkillsUSA) including but not limited to conferences, competitions, community service, philanthropy, and other student organization activities.

11.4 Explain how participation in career and technology education student organizations can promote lifelong responsibility for community service and professional development.

11.5 Explore the competitive events related to the content of this course and the required competencies, skills, and knowledge for each related event for individual, team, and chapter competitions.