Introduction to Computer Technology Resources

UNIT/ Weeks	Timeline/Topics	Essential Questions
1	Computer Literacy and You • What a Computer Is • Computer Literacy • Information Processing Cycle • Computer Components, • Advantages and Disadvantages of Using Computers • Computer Software • Computer Usage • Computers in Society and How They Affect Employment • Being a Responsible Computer User	• Why is computer literacy an important aspect of understanding the machine, the software, and appropriate usage? • How do computers impact people at home and in the workplace?
4	Windows • Windows Desktop • Windows Control Panel • Windows Display Properties • Windows File Management • Windows Applications • Windows Help	• How is Windows control panel used to monitor and maintain your computer? • What is the hierarchy of the Windows file system and what steps should you take to organize and maintain it? • What are the Windows application programs and for what purposes can they be used?
2	Internet and the World Wide Web • How Internet Works • Difference Between Internet and World Wide Web • Accessing the Internet • Hypertext and Hyperlinks • Web Browsers and Web Servers • URL's • Search Engines • Information Reliability and Accuracy • Internet Services • Netiquette	• What is the Internet and how is it different from the World Wide Web? • How do you access the Internet? • How do you find information on the Internet and the World Wide Web? • How do you determine if the information you find on the Internet and World Wide Web is reliable and accurate? • What are the rules of netiquette that everyone should follow online?
2	Application Software • System Software and Application Software • Most Used Types of General-purpose Applications • Standalone and Integrated Programs & Software Suites • Packaged, Custom, Open Source, and Public-domain Software, Shareware, Freeware • Web Applications and File Compatibility	• How are system and application software different? • What applications are used most often on the computer? • What are the advantages and disadvantages of using standalone or integrated programs, and software suites? • How do packaged, custom, and public-domain software, shareware, and freeware differ? • How do web applications work and why is file compatibility important?

	• Skills Needed to Used Application Software • Software Versions and Software Upgrades	• What are essential skills needed to use application software? • What are software versions and software upgrades?
2	Systems Software and Operating Systems • Components of System Software • Functions of Operating System • Types of Interfaces • Computer Boot Process • System Utilities • Data Backup Procedures • Troubleshooting Tips and Possible Solutions to Computer Problems	• What are the two main components of system software and what is the importance of the operating system? • What system utilities are crucial to maintaining a computer? • Why is data backup essential? • What are troubleshooting tips and possible solutions to computer problems?
2	System Unit • Components of the System Unit • Components of the Motherboard • How Data is Represented on the Computer • Data Transfer Rates and Data Storage Capacity • CPU - Control Unit, Arithmetic Logic Unit, Machine Cycle, Registers, System Clock • Processor's Performance • Types of Memory and Their Functions • External Ports and Connectors	• What are the components of the system unit and the CPU? • How is data represented on the computer and how is it processed? • What types of memory are used and what are their functions? • What kind of external ports and connectors are found on the system unit?
1.5	Storage Systems • Storage vs. Memory • Storage Devices and Storage Media • Characteristics of an Internal Hard Disk and How They Affect the Disk's Performance • How Data is Stored on Hard Disks and Other Storage Media	• How is storage different from memory? • What are storage devices? • What are the different types of storage media used on computers? • How is data stored on hard disks and other storage media?
3	Word Processing • Creating Documents • Editing and Formatting Documents • Saving and Retrieving Documents • Printing Documents	• What are the steps to create documents in Microsoft Word? • How can documents be edited using various text formatting options? • How are documents saved and retrieved in Microsoft Word using various file type options? • What are the steps to print documents in Microsoft Word?
2	Input and Output • Input Devices • Input Devices for Physically Challenged Users • Output Devices	• What devices and methods are used to input data into the computer? • What are alternative devices and methods employed by physically challenged users to input data into the computer?

	• Output Devices for Physically Challenged Users	• What devices and methods are used to output information from the computer? • What are alternative devices and methods employed by physically challenged users to output information from the computer?
1.5	Connectivity • Bandwidth • Communications Devices - Converting Digital Signals to Analog Signals • Transmission Media and Transmission Methods • Communications Over the Telephone Network • Convergence of Communications Devices • Uses of Computer Communications - Wired and Wireless Applications • Networks	• What are the purposes of the components required for successful communications? • What are commonly used sending and receiving devices? • How are computer communications used? • What are the advantages and disadvantages of networks?
3	Spreadsheets • Creating Spreadsheets • Entering Data Labels and Values • Using Formulas and Functions • Format Spreadsheets • Saving and Retrieving Spreadsheet Files • Printing Spreadsheets • Creating Charts • Entering Information for Title, X- and Y-axis and Legends • Printing Charts	• How are simple spreadsheets created, saved, and retrieved? • What methods are used to enter and edit data on a spreadsheet or chart? • What options are available for formatting a spreadsheet or chart? • How are spreadsheets and charts printed?
3	Databases • Creating and Editing Simple Databases • Sorting and Printing Simple Databases, Lists, and Mailing Labels • File Management Programs and Relational Database Management Systems • Components and Functions of an Information System	• What is a database and how is it used? • What are the components of a database and how are simple databases created? • What methods are used to edit a simple database? • How is information from a database printed? • What is the difference between a file management program and a relational database management system? • What are the components and functions of an information systems?
1	Computer Security and Safety, Ethics, and Privacy • Technology Developments and Decreasing Privacy and Anonymity • Types of Computer and Cyber Crime, Computer Criminals, and Computer System Security Risks	• How are technological developments decreasing privacy and anonymity? • What are the types of computer and cybercrime, computer criminals, and computer system security risks?

	Methods for Protecting Your Computer and Yourself • Encryption	• How can you protect your computer system and yourself? • What is encryption and how is it used?
2	Systems Analysis and Design • Systems Analysts • System and Its Life Cycle • System Development Guidelines • Five Phases of the SDLC.	• What are systems analysts and what are their job responsibilities? • What is a system and what is its life cycle? • Why is the SDLC (systems development life cycle) so widely used? • What are the activities in each of the five phases of the SDLC?
3	BASIC Programming • Machine and Assembly Languages • Advantages and Disadvantages of High-level Programming Languages. • Object-oriented Languages • Phases of the Program Development Life Cycle (PDLC) • Top-down Program Design • Control Structures • Syntax and Logic Errors	• What is a programming language? • What are the differences between machine and assembly languages? • What are object-oriented languages and how do they alleviate the limitations of earlier languages? • What are the phases of the PDLC (program development life cycle)? • How does the top-down program design make it easier to debug and maintain programs? • What are control structures and their advantages? • What is the difference between syntax and logic errors?
1	Enterprise Computing • Enterprise Computing • Business Processes • Centralized and Distributed Technology Management • Enterprise Storage Systems • Electronic Data Interchange • Teleconferencing • Telecommuting and Workgroup Commuting	• What is enterprise computing and how is it different from personal computing? • How are business processes used within an organization? • What is the difference between centralized and distributed technology management? • What are enterprise storage systems? • What is electronic data interchange and how is it used? • How are teleconferencing, telecommuting, and workgroup computing used by employees?
2	Careers and Certification • IT Career Paths • Computer-related College Majors • Jobs in IT • Business Skills Needed by IT Workers • Certification	• What jobs and career paths are available in IT? • What are computer-related majors for today's college students? • What business skills are needed by IT workers? • How is certification beneficial for employers, employees, and vendors?