

FUNDAMENTALS OF INFORMATION TECHNOLOGY

Pierce County Careers Connection Dual Credit Articulation Agreement

Upon completion of high school courses equivalent to the following competencies:

- Introduction to Computers
 - Explain the scope of computer understanding needed by someone living in an information society.
 - Describe the implications of computer networks on organizations and on society.
 - Distinguish between data and information.
 - Describe the fundamental components and the operational capabilities of a computer.
 - Identify and describe uses of the computer.
- Computer Systems: Micros to Supercomputers
 - Distinguish between microcomputers, workstations, minicomputers, mainframes, and supercomputers.
 - Illustrate typical hardware configurations for the various types of computers.
 - Describe different types of microcomputers.
 - Demonstrate awareness of the relative size, scope, characteristics, and variety of available computer systems.
 - Describe the functions and relationships of the various processors in a mainframe computer system.
- Interacting with Computers
 - Understand the scope of knowledge needed to interact effectively with a computer.
 - Distinguish between the three categories of software:
 - ~General-purpose
 - ~Applications
 - ~System software
 - Explain the difference between text-based and graphics-based software.
 - Describe the characteristics and functionality of a graphical user interface.
 - Describe various keyboard, mouse, and data entry conventions.
- Internal Workings of the Computer
 - Describe how data are stored in a computer system.
 - Demonstrate the relationships between bits, bytes, characters, and encoding systems.
 - Explain the translation of alphanumeric data into a format for internal computer representation.
 - Illustrate the principles of computer operations.
 - Identify and describe the relationships between the internal components of a computer.
 - Distinguish processors by their word length, speed, and memory capacity.
- Peripherals
 - Explain alternative approaches to data entry and list I/O devices.
 - Describe the operation and application of common output.
 - Describe the use and characteristics of the different types of terminals.
- Data Storage and Organization
 - Distinguish between primary and secondary storage.
 - Describe and illustrate the relationships between the levels of the hierarchy of data organization.
 - Describe how data are stored, retrieved, and manipulated in computer systems.
 - Demonstrate an understanding of the principles and use of sequential processing and random processing.
 - Distinguish between secondary storage devices and secondary storage media.
- Data Communications and Networking
 - Define the concept of connectivity.
 - Define the terminology of data communications and its applications.
 - List the function and operation of data communications hardware.
 - Determine the alternatives and sources of data transmission services.
 - Illustrate the various kinds of network topologies.
 - Describe a local area network and its associated hardware and software.
- System Software
 - Define common system software concepts.
 - Detail the purpose and objectives of an operating system.
 - Describe the function of program language compilers and interpreters.
 - Distinguish between common platforms available to microcomputer users.
 - Explain the concept of a common user interface and its advantage in learning a new application.
 - Describe the basic mouse operations; use a mouse and/or the equivalent keyboard shortcuts to select commands from a pull-down menu.
 - Discuss the function of a dialog box; describe the different types of dialog boxes and the various ways in which information is supplied.
 - Explain the functions of the minimize, maximize, or restore buttons.
 - Describe the use of the scroll bar and its associated scroll box.
 - Access the on-line help facility and explain its various capabilities.
- Programming Concepts and Languages
 - Discuss the terminology and concepts associated with programming languages and software.
 - Identify approaches to solving a programming problem.
 - Explain the concept of structured programming.
 - Identify the principles and use of flowcharting and other program design techniques.
 - List the steps and approaches to program development as part of the System Development Lifecycle Model.
 - Categorize programming languages by generation.
 - Describe the capabilities of application generators and natural languages.

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- Text and Image Processing Software
 - Describe the function and applications of word processing software.
 - Explain word processing concepts.
 - Describe add-on capabilities of word processing software packages.
 - Create, save, retrieve, edit, and print a simple document using word processing software.
 - Describe the function and applications of desktop publishing software.
 - Explain desktop publishing concepts.
- Multimedia Software
 - Describe the function and applications of different types of graphics software.
 - Explain graphics software concepts.
 - Load presentation software; open, modify, and view an existing presentation.
 - Describe the elements of the presentation software.
 - Use the AutoContent Wizard as the basis for developing an initial outline.
- Data Management Software
 - List the various applications-specific data management tools.
 - Describe the function and applications of spreadsheet software.
 - Discuss common spreadsheet concepts.
 - Open a spreadsheet workbook; add and delete rows and columns of a worksheet; save and print the modified worksheet.
 - Use the SUM, AVERAGE, MAX, MIN, and COUNT functions in a worksheet.
 - Define the terms field, record, table, and database.
 - Load database; describe the Database windows and the objects in a relational database.
 - Add, edit, and delete records to a table within a database.
 - Explain the principles and use of database management systems.
 - Discuss the differences between file-oriented organization and database organization.
- Data Security
 - Identify points of security vulnerability for the computer center and for information systems.
 - Describe some of the causes for lost or inaccurate data.
 - Discuss data security techniques.
- Internet
 - Describe how the Internet works.
 - Describe the services that you can access using a web browser.
 - Explain the following: URL, IP address, domain name, and email address.
- Computers in Society: Today and Tomorrow
 - Argue the pros and cons of society's dependence on computers.
 - Describe the functions, responsibilities, and organization of an information services department.
 - Identify computer specialist positions in information services departments and in user departments.
 - List job opportunities in organizations that provide computer-related products or services.
 - Explore ethical questions concerning the uses of computers.
 - Identify causes of illegal information processing activity such as license and copyright infringement
 - Identify ergonomic considerations in the design of the knowledge worker's work place.
 - List possible applications for the emerging information superhighway.

A student earning a "B" grade or better may earn college credit at one of the following colleges:

<u>College</u>	<u>Course</u>	<u>Credits</u>
Bates Technical College	INFO 102 (CIP Code: 110901)	4
Pierce College	CIS 121 (CIP Code: 110301)	5