# Florida Department of Education

# Student Performance Standards

**Course Title: Advanced Information Technology**

**Course Number: 9007610**

**Course Credit: 1**

**Course Description:**

This course provides a basic overview of current business and information systems and their trends. Students gain fundamental knowledge and experience in computer technology that is required for today's business and academic environments. With the development of basic computer science knowledge and understanding, this course prepares students to be successful both personally and professionally in an information-based society. Advanced Information Technology includes industry-driven standards that allow student exploration of computers and their networks, as well as other emergent technology, hardware/software installation and functionality, web development practices, and the benefits and risks of using computers both locally and globally.

| **CTE Standards and Benchmarks** |
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| 1. Develop an awareness of microprocessors and digital computers. The student will be able to:
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| * 1. Explain the general architecture of a microcomputer system.
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| * 1. Explain the need for and use of peripherals (e.g., keyboards, sensory input, geospatial input).
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| * 1. Demonstrate proficiency using peripherals.
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| * 1. Differentiate between diagnosing and troubleshooting peripherals.
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| * 1. Describe the necessary components for data storage and memory, and how it affects programming (e.g., RAM, ROM).
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| * 1. Differentiate between multiple levels of hardware and software (e.g., CPU hardware, operating system, translation, interpretation) that support program execution.
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| * 1. Evaluate various forms of input and output (e.g., IO, storage devices, digital media).
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| 1. Demonstrate an understanding of computer operating systems. The student will be able to:
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| * 1. Identify various types of computer operating systems.
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| * 1. Compare and contrast various types of computer operating systems.
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| * 1. Describe the evolution of computer operating systems.
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| * 1. Compare and contrast different computer system viruses and how they affect various computer operating systems.
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| * 1. Understand the advantages and disadvantages of open-source computer operating systems.
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| 1. Demonstrate an understanding of global and local network systems. The student will be able to:
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| * 1. Identify types of networks and how they work.
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| * 1. Identify the role of servers and clients on a network.
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| * 1. Identify benefits and risks of networked computing.
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| * 1. Identify the relationship between computer networks and other communications networks (e.g., Wi-Fi, teleconference, telepresence).
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| * 1. Identify intranets, extranets and how they relate to the Internet.
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| * 1. Describe how the Internet facilitates global communication.
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| 1. Incorporate appropriate leadership and supervision techniques, customer service strategies, and standards of personal ethics to accomplish job objectives and enhance workplace performance. The student will be able to:
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| * 1. Demonstrate awareness of the following workplace essentials: quality customer service; business ethics; confidentiality of information; copyright violations; accepted workplace rules, regulations, policies, procedures, processes, and workplace safety, and appropriate attire and grooming.
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| * 1. Demonstrate ways of providing and accepting constructive criticism on collaborative projects within the workplace.
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| * 1. Apply appropriate collaborative skills to manage and resolve conflicts in work situations.
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| * 1. Demonstrate human relations, personal and interpersonal skills appropriate for the workplace, including responsibility, dependability, punctuality, integrity, positive attitude, initiative, respect for self and others, and professional dress.
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| * 1. Discuss and analyze the impact of values and points of view that are presented in media message (e.g., racial, gender, political, biases).
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| 1. Demonstrate competence using computer networks, internet and online databases to facilitate collaborative or individual learning and communication. The student will be able to:
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| * 1. Demonstrate how to connect to the Internet and use appropriate Internet protocol.
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| * 1. Identify and describe web terminology, addresses and how browsers work.
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| * 1. Describe appropriate browser security configurations.
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| * 1. Understand and apply level one Universal Resource Locator (URL) and associated protocols (e.g., com, org, edu, gov, net, mil).
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| * 1. Evaluate quality of digital resources for reliability (e.g., currency, relevancy, authority, accuracy, purpose of digital information).
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| * 1. Compare and contrast techniques for analyzing massive data collections.
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| 1. Develop an awareness of emerging technologies. The student will be able to:
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| * 1. Compare and contrast emerging technologies and describe how they impact business in the global marketplace (e.g., wireless network, tablets, cell phones, satellite technology, nanotechnology, smart devices, home networks, peer-to-peer).
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| * 1. Describe how digital tools and resources are used in today’s society (i.e., efficiency and effectiveness, individual and collaborative use).
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| * 1. Explain different file types used for various purposes based on file size and data input (e.g., word processing, images, music, three-dimensional drawings).
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| * 1. Develop criteria for selecting appropriate hardware and software when solving a specific real-world problem.
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| * 1. Define scale-ability as it relates to emerging technology.
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| 1. Develop awareness of web development. The student will be able to:
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| * 1. Define basic terminology used in web page development.
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| * 1. Create web pages using HTML tags (e.g., headings, character styles, paragraphs, text alignments, lists, images)
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| * 1. Describe the purpose of storyboarding techniques.
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| * 1. Describe the basic functions of WYSIWYG editors.
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| * 1. Create a simple example of wire framing with, at least, three web pages.
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| * 1. Explain the use of Cascading Style Sheets.
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| * 1. Apply the use of Cascading Style Sheets in a web page.
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| * 1. Test web pages for display, functionality, and accessibility before publishing a site to the Internet (i.e., validate web page code using W3C validation tool).
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| * 1. Discuss issues related to using music, videos, or images from the Internet on your website (e.g., ethical use, illegal use, Creative Commons).
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| 1. Demonstrate proficiency in physical computing with hardware devices or emulators. The student will be able to:
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| * 1. View hardware as an approachable and fun topic in computing. *Physical computing is meant to encourage interdisciplinary and entrepreneurial thinking and foster student creativity.*
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| * 1. Demonstrate the use of Physical computing, which is about the interaction between the person and the machine.
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| * 1. Use physical computing devices or emulators to solve problems.
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| * 1. Determine how computers sense and respond to their environment.
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| * 1. Determine the kind of information that can be communicated with hardware outputs.
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| * 1. Analyze how simple hardware can be used to develop innovative new products.
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| * 1. Define prototype in relation to digital design.
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| * 1. Create a prototype of an original game that can be played using a physical computing device.
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| * 1. Design a prototype of an original device that can be used to assist someone with a physical challenge.
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