



Department of Teaching & Learning
Parent/Student Course Information

Information Technology Fundamentals
(BE 6670)
One Credit, One Year
Grades 9 - 10

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION

Information Technology (IT) Fundamentals introduces the essential technical and professional skills required for students to pursue programs leading to professional careers and IT certifications. Students investigate career opportunities and technologies in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development and Interactive Media. Students will evaluate the impact of IT on other career clusters. The focus of the IT Fundamentals course is the introduction of skills related to information technology basics, Internet fundamentals, network systems, computer maintenance/upgrading/troubleshooting, computer applications, programming, graphics, Web page design and interactive media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employability.

CERTIFICATION

Students who qualify are eligible to sit for the IC3 industry certification exams which can be used for student-selected verified credit.

STUDENT ORGANIZATION

The Future Business Leaders of America (FBLA) is the co-curricular organization for secondary Business and Information Technology students. The organization enhances occupational preparation for students by helping them attain the following goals: leadership skills; knowledge of the American enterprise system; self-confidence; improvement of home, business, and community; scholarship; citizenship; and career goals.

PREREQUISITE

None

OPTIONS FOR NEXT COURSE

None

REQUIRED STUDENT TEXTBOOK

None

COMPETENCIES FOR INFORMATION TECHNOLOGY FUNDAMENTALS

Demonstrating Workplace Readiness Skills: Personal Qualities and People Skills

- 001 Demonstrate positive work ethic.
- 002 Demonstrate integrity.
- 003 Demonstrate teamwork skills.
- 004 Demonstrate self-representation skills.
- 005 Demonstrate diversity awareness.
- 006 Demonstrate conflict-resolution skills.
- 007 Demonstrate creativity and resourcefulness.

Demonstrating Workplace Readiness Skills: Professional Knowledge and Skills

- 008 Demonstrate effective speaking and listening skills.
- 009 Demonstrate effective reading and writing skills.
- 010 Demonstrate critical-thinking and problem-solving skills.
- 011 Demonstrate healthy behaviors and safety skills.
- 012 Demonstrate an understanding of workplace organizations, systems and climates.
- 013 Demonstrate lifelong-learning skills.
- 014 Demonstrate job-acquisition and advancement skills.
- 015 Demonstrate time-, task- and resource-management skills.
- 016 Demonstrate job-specific mathematics skills.
- 017 Demonstrate customer-service skills.

Demonstrating Workplace Readiness Skills: Technology Knowledge and Skills

- 018 Demonstrate proficiency with technologies common to a specific occupation.
- 019 Demonstrate information technology skills.
- 020 Demonstrate an understanding of Internet use and security issues.
- 021 Demonstrate telecommunications skills.

Examining All Aspects of an Industry

- 022 Examine aspects of planning within an industry/organization.
- 023 Examine aspects of management within an industry/organization.
- 024 Examine aspects of financial responsibility within an industry/organization.
- 025 Examine technical and production skills required of workers within an industry/organization.
- 026 Examine principles of technology that underlie an industry/organization.
- 027 Examine labor issues related to an industry/organization.
- 028 Examine community issues related to an industry/organization.
- 029 Examine health, safety and environmental issues related to an industry/organization.

Addressing Elements of Student Life

- 030 Identify the purposes and goals of the student organization.
- 031 Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.
- 032 Demonstrate leadership skills through participation in student organization activities, such as meetings, programs and projects.
- 033 Identify Internet safety issues and procedures for complying with acceptable use standards.

Mastering Information Technology Basics

- 034 Investigate the history and emerging advances of information technology.
- 035 Describe the impact of information technology on business and society.
- 036 Identify the classes of software associated with information systems.

- 037 Explore basic binary concepts and their applications in the information technology world.
- 038 Describe the evolution of the Internet and how it works.
- 039 Describe emerging technologies as they relate to the future of the Internet.
- 040 Investigate current and future trends in information technology.
- 041 Examine social, ethical, and legal issues associated with information technology.
- 042 Debate an ethical issue related to using computer and Internet technology.

Using Computer Applications

- 043 Create documents related to information technology using word processing/publishing software.
- 044 Create a relational database.
- 045 Create spreadsheets for real-world business problems.
- 046 Create presentations, using presentation software.

Investigating Computer Fundamentals

- 047 Identify the basic parts of a computer system and the relationships among components.
- 048 Describe characteristics and functions of CPUs, motherboards, random access memory (RAM), expansion connections, hard drives, and CD-ROM drives.
- 049 Explain the functions and characteristics of system expansion devices (e.g., graphics cards, sound cards and modems).
- 050 Demonstrate the use of connectivity devices and peripheral equipment (e.g., portable storage devices, printers, cable modem and wireless technologies).
- 051 Perform basic operations in an operating system environment.
- 052 Manage various file types.
- 053 Describe the basic computer start-up sequence.
- 054 Compare and contrast the basic differences among operating systems.
- 055 Investigate basic issues affecting system purchase and upgrade decisions.
- 056 Investigate the building stages of a computer.

Maintaining, Upgrading, and Troubleshooting Computers

- 057 Describe the importance of system maintenance and preventive measures, including the consequences of not taking preventive measures.
- 058 Install and configure hardware in a computer system.
- 059 Install software programs.
- 060 Perform basic software configuration operations.
- 061 Install and configure anti-X software (e.g., anti-virus, anti-spyware and anti-spam).
- 062 Identify basic problems associated with computer hardware, operating system and application software.
- 063 Describe risk-mitigation techniques (e.g., policies, procedures, hardware and software).
- 064 Identify basic security risks inherent to computer hardware and software.
- 065 Describe security best practices for businesses.
- 066 Describe the importance of data backup media and strategies.
- 067 Back up files.
- 068 Perform basic remote connection troubleshooting.

Exploring Network Fundamentals

- 069 Investigate networks and their evolution.
- 070 Explain basic networking concepts and different network structures.
- 071 Compare and contrast peer-to-peer and client/server networks.
- 072 Describe the differences between analog and digital technology.

Exploring Internet Fundamentals

- 073 Identify the elements that are required to connect to the Internet.
- 074 Describe the concept of IP addresses and the Domain Name System (DNS).
- 075 Explain the delivery methods of Internet Service Providers (ISPs).
- 076 Explore the types and features of various Web browsers.
- 077 Explain file transfer mechanisms.
- 078 Research principles of Internet communication etiquette.
- 079 Identify criteria for conducting searches on the Internet.
- 080 Assess the impact and value of available firewalls and intrusion detection systems (IDS).

Exploring Programming Basics

- 081 Explain the purpose and functions of computer programming.
- 082 Identify the types of programming languages.
- 083 Explain the steps in a program life cycle.
- 084 Design a simple program for a specific application.
- 085 Create a simple computer program.
- 086 Test and debug the program.
- 087 Document the program.

Exploring the Basics of Web Page Design

- 088 Investigate design elements of professionally developed Web sites.
- 089 Analyze the navigation of a Web site for ease of use.
- 090 Create a Web page.
- 091 Investigate posting/publishing a Web site.

Exploring Graphics and Interactive Media

- 092 Identify hardware required for multimedia and entertainment presentations.
- 093 Identify software programs associated with graphics and interactive media.
- 094 Explore the components of multimedia design and their applications.
- 095 Explore information technology as it relates to the game programming industry.
- 096 Create an interactive multimedia presentation.

Preparing for Industry Certification

- 097 Describe the process and requirements for obtaining industry certifications related to the Information Technology (IT) Fundamentals course.
- 098 Identify testing skills/strategies for a certification examination.
- 099 Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions similar to those on certification exams).
- 100 Successfully complete an industry certification examination representative of skills learned in this course (e.g., MOS, IC3, NOCTI).

Developing Career Exploration and Employability Skills

- 101 Complete self-assessments to help determine career development goals.
- 102 Investigate careers, educational requirements and certifications in the five information technology career pathways.
- 103 Demonstrate project-management skills.
- 104 Create manual and online employment-related correspondence.
- 105 Assemble a professional portfolio, including selected samples of best work produced.

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For further information please call (757) 263-1070.

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Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email at Theresa.Dougherty@vbschools.com.

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CHARTING THE COURSE

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