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 Personal Qualities and Abilities
1   Demonstrate creativity and innovation.
2   Demonstrate critical thinking and problem solving.
3   Demonstrate initiative and self-direction.
4   Demonstrate integrity.
5   Demonstrate work ethic.

Demonstrating Interpersonal Skills
6   Demonstrate conflict-resolution skills.
7   Demonstrate listening and speaking skills.
8   Demonstrate respect for diversity.
9   Demonstrate customer service skills.
10   Collaborate with team members.

Demonstrating Professional Competencies
11   Demonstrate big-picture thinking.
12   Demonstrate career- and life-management skills.
13   Demonstrate continuous learning and adaptability.
14   Manage time and resources.
15   Demonstrate information-literacy skills.
16   Demonstrate an understanding of information security.
17   Maintain working knowledge of current information-technology (IT) systems.
18   Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.
19   Apply mathematical skills to job-specific tasks.
20   Demonstrate professionalism.
21   Demonstrate reading and writing skills.
22   Demonstrate workplace safety.

Examining All Aspects of an Industry
23   Examine aspects of planning within an industry/organization.
24   Examine aspects of management within an industry/organization.
25   Examine aspects of financial responsibility within an industry/organization.
26   Examine technical and production skills required of workers within an industry/organization.
27   Examine principles of technology that underlie an industry/organization.
28   Examine labor issues related to an industry/organization.
29   Examine community issues related to an industry/organization.
30   Examine health, safety, and environmental issues related to an industry/organization.

Addressing Elements of Student Life
31   Identify the purposes and goals of the student organization.
32   Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.
33   Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.
34   Identify Internet safety issues and procedures for complying with acceptable use standards.

Exploring Work-Based Learning
35   Identify the types of work-based learning (WBL) opportunities.
36   Reflect on lessons learned during the WBL experience.

| 37 | Explore career opportunities related to the WBL experience. |
| 38 | Participate in a WBL experience, when appropriate. |

Mastering Digital Technology Basics
39	Investigate the history and emerging advances of digital technology.
40	Describe the effect of digital technology on business and society.
41	Describe software associated with information systems.
42	Explore binary concepts and their operations in the digital technology world.
43	Describe the evolution of the Internet and how it works.
44	Investigate emerging technologies as they relate to the future of the Internet.
45	Investigate trends in digital technology.
46	Examine social, ethical, and legal issues associated with digital technology.
47	Debate an ethical issue related to using computer and Internet technology.

Using Digital Applications
48	Create documents related to real-world business situations.
49	Create a relational database for a real-world business situation.
50	Create spreadsheets for a real-world business situation.
51	Create presentations related to a real-world business situation.

Investigating Computer Fundamentals
52	Identify the parts of a computer system and the relationships among its components.
53	Describe characteristics and functions of CPUs.
54	Explain the functions and characteristics of system expansion devices.
55	Demonstrate the use of connectivity devices and peripheral equipment.
56	Perform basic operations in an operating system environment.
57	Manage various file types.
58	Describe the computer start-up sequence.
59	Compare operating systems.
60	Investigate needs affecting system purchases and upgrade decisions.
61	Investigate the building stages of a computer.

Maintaining, Upgrading, and Troubleshooting Computers
62	Describe the importance of system maintenance and preventive measures.
63	Install hardware in a computer system.
64	Install software programs.
65	Explain the purpose of anti-X software.
66	Identify problems associated with computer hardware, operating systems, and application software.
67	Describe risk-mitigation techniques.
68	Identify security risks inherent to computer hardware and software.
69	Describe security best practices for businesses.
70	Describe the importance of data backup media and strategies.
71	Back up files.
72	Evaluate remote connection troubleshooting.

Exploring Network Fundamentals
73	Investigate networks and their evolution.
74	Explain networking concepts and different network structures.
75	Compare peer-to-peer and client-server networks.
76	Describe the differences between analog and digital technologies.
77	Identify the necessary elements that are required to connect to the Internet.

78	Describe the concept of IP addresses and the Domain Name System (DNS).
79	Explain the delivery methods of ISPs.
80	Compare the types and features of various web browsers.
81	Explain file transfer mechanisms.
82	Exhibit principles of digital citizenship.
83	Identify criteria for conducting searches on the Internet.
84	Assess the effect and value of available firewalls and intrusion detection systems (IDS).

Exploring Programming
85	Explain the purpose and functions of computer programming.
86	Identify the types of programming languages.
87	Explain the steps in a program life cycle.
88	Design a simple program for a specific application.
89	Create a simple computer program.
90	Execute a simple program.
91	Document a simple program.

Exploring Web Page Design
92	Investigate design elements of professionally developed websites.
93	Analyze the navigation of a website for ease of use.
94	Create a website.
95	Investigate publishing a website.

Exploring Graphics and Interactive Media
96	Identify hardware required for multimedia and entertainment presentations.
97	Identify software programs associated with graphics and interactive media.
98	Explore the components of multimedia design and their applications.
99	Explore digital technology as it relates to game design and development.
100	Create an interactive multimedia presentation.

Preparing for Industry Certification
101	Describe the process and requirements for obtaining industry certifications related to the IT Fundamentals course.
102	Identify testing skills/strategies for a certification examination.
103	Demonstrate ability to successfully complete selected practice examinations.
104	Complete an industry certification examination representative of skills learned in this course.

Developing Career Exploration and Employability Skills
105	Complete self-assessments to help determine career development goals.
106	Investigate careers, educational requirements, and certifications in the IT career pathways.
107	Demonstrate project-management skills.
108	Create manual and online employment-related correspondence.
109	Create an electronic and/or hard-copy portfolio.

Notice of Non-Discrimination Policy

Virginia Beach City Public Schools does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation/gender identity, pregnancy, childbirth or related medical condition, disability, marital status, age, genetic information or veteran status in its programs, activities, employment, or enrollment, and provides equal access to the Boy Scouts and other designated youth groups. School Board policies and regulations (including, but not limited to, Policies 2-33, 4-4, 5-7, 5-19, 5-20, 5-44, 6-33, 6-7, 7-48, 7-49, 7-57 and Regulations 4-4.1, 4-4.2, 5-44.1, 7-11.1, 7-17.1 and 7-57.1) provide equal access to courses, programs, enrollment, counseling services, physical education and athletic, vocational education, instructional materials, extracurricular activities and employment.

Title IX Notice: Complaints or concerns regarding discrimination on the basis of sex or sexual harassment should be addressed to the Title IX Coordinator, at the VBCPS Office of Student Leadership, 641 Carriage Hill Road, Suite 200, Virginia Beach, 23452, (757) 263-2020, Mary.Dees@vbschools.com (student complaints) or the VBCPS Department of School Leadership, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (757) 263-1088, Elizabeth.Bryant@vbschools.com (employee complaints). Additional information regarding Virginia Beach City Public Schools' policies regarding discrimination on the basis of sex and sexual harassment, as well as the procedures for filing a formal complaint and related grievance processes, can be found in School Board Policy 5-44 and School Board Regulations 5-44.1 (students), School Board Policy 4-4 and School Board Regulation 4-4.3 (employees), and on the School Division's website at Diversity, Equity and Inclusion/Title IX. Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student's school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Plaza Annex/Family and Community Engagement Center, 641 Carriage Hill Road, Suite 200, Virginia Beach, VA 23452.

The School Division is committed to providing educational environments that are free of discrimination, harassment, and bullying. Students, staff, parents/guardians who have concerns about discrimination, harassment, or bullying should contact the school administration at their school. Promptly reporting concerns will allow the school to take appropriate actions to investigate and resolve issues. School Board Policy 5-7 addresses non-discrimination and anti-harassment, Policy 5-44 addresses sexual harassment and discrimination based on sex or gender. Policy 5-36 and its supporting regulations address other forms of harassment.

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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**VIRGINIA BEACH
CITY PUBLIC SCHOOLS**
CHARTING THE COURSE

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