



Department of Teaching & Learning
Parent/Student Course Information

Advanced Computer Information Systems
(BE 6615 and BE 6613)
One Credit, One Year
Grades 10 - 12

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

Students apply problem-solving skills to real-life situations through advanced integrated software applications, including printed, electronic and Web publications. Students work individually and in groups to explore advanced computer maintenance activities, Web site development, programming, networking, emerging technology and employability skills.

CERTIFICATION

Upon successful completion of practice exams, students who qualify may sit for the Microsoft Office Specialist and/or Adobe Certified Associate industry certifications. These certifications can be used for student-selected verified credit.

COOPERATIVE OFFICE EDUCATION (COE)

Cooperative Office Education (COE) is the supervised on-the-job instructional phase of an occupational preparation program. Students attend classes for all or part of the day and work in an approved business/office position part of the day. The teacher-coordinator and business training sponsor develop an individualized training plan that identifies learning experiences according to the student's career objective. Transportation is the responsibility of the student. Many Business & IT courses are eligible for the cooperative office education method of instruction. Participation in COE is optional for Business and Information Technology students.

STUDENT ORGANIZATION

FBLA – The Future Business Leaders of America 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

Computer Information Systems

OPTIONS FOR NEXT COURSE

None

REQUIRED STUDENT TEXTBOOK

None

COMPETENCIES FOR ADVANCED COMPUTER INFORMATION SYSTEMS

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.

Using Advanced Word Processing Functions

- 39 Compare advanced features of a word processing program to determine the best tools to use for a given task.
- 40 Create documents using advanced merge functions.
- 41 Produce documents incorporating tables, templates, autocorrect, styles, smart art graphics, and other advanced features.
- 42 Create a professional document (e.g., brochure, annual report, newsletter, catalog) demonstrating established principles of design in desktop publishing.
- 43 Import text and graphics from other sources (e.g., Internet, CD, DVD, scanner, digital camera, other files).
- 44 Integrate a variety of software applications into a word processing document.
- 45 Create an online form with a word processing program.

Using Advanced Spreadsheet Functions

- 46 Compare features and functions of various spreadsheet programs to determine the best software for an individual's or organization's needs.
- 47 Create a spreadsheet using advanced formatting features and graphics.
- 48 Use advanced formulas and functions (e.g., @PMT, @PV, @VLOOKUP, @HLOOKUP, @FV, @COUNT, @COUNTIF, @IF/THEN, relative and absolute referencing).
- 49 Use advanced tools (e.g., macros, scenarios, auditing, pivot tables and reports, object linking and embedding).
- 50 Create and reformat complex graphs.
- 51 Analyze, interpret, and present data.
- 52 Sort and filter spreadsheet data.
- 53 Import and export data to and from a spreadsheet.
- 54 Create templates.
- 55 Organize a large workbook with multiple worksheets.
- 56 Apply linear programming to optimize spreadsheet results.

Using Advanced Database Functions

- 57 Evaluate features of various database programs to determine the best software for an individual's or organization's needs.
- 58 Plan, design, and create a database file with advanced features.
- 59 Generate customized reports and forms, using advanced formatting features and graphics.
- 60 Create and conduct advanced queries to access information.
- 61 Import and export data to and from a database.

Enhancing Multimedia Presentations

- 62 Research and organize information to build a multimedia presentation with advanced features.
- 63 Plan and build multimedia presentations, using advanced features.
- 64 Utilize templates and master slides in the design of presentations.
- 65 "Enhance multimedia presentation layout, according to principles of effective design."
- 66 Enhance a multimedia presentation with advanced features (e.g., color, transitions, animations, timing, backgrounds, graphics, charts, graphs).
- 67 Incorporate visual elements (e.g., scanned images, digital photography, video images, streaming, downloadable images from the Internet).

- 68 Incorporate audio elements (e.g. music and voice recordings, digital audio [.wav] files, streaming, MIDI interface files).
- 69 Integrate a variety of software applications into a multimedia presentation.
- 70 Proofread and edit multimedia presentations.
- 71 Create handouts and other visuals (e.g., transparencies, speaker's notes, outline, CD/DVD, memory key).
- 72 Deliver a multimedia presentation, according to the principles of effective communication.
- 73 Critique the clarity and effectiveness of advanced multimedia presentations.

Producing Desktop Published Documents for Print and Electronic Distribution

- 74 Gather or create documents and graphics for use in various advanced desktop publishing products, such as flyers, brochures, and newsletters.
- 75 Determine appropriate desktop publishing products based upon the purpose of the publication, intended audience, output format, and time and cost constraints.
- 76 Apply principles of design, layout, and typography.
- 77 Design a layout for ease of readability and attractiveness (e.g., white space, column position and spacing, page margins, graphic text placements).
- 78 Enhance appearance of document using desktop features (e.g., graphic boxes, lines, illustrations, images).
- 79 Create templates or master pages.
- 80 Create a variety of multi-page and multi-column documents in a format appropriate for electronic distribution.
- 81 Demonstrate use of keyboard shortcuts.
- 82 Incorporate original/imported text, graphics, tables, charts, and audio/visual elements from a variety of sources.
- 83 Convert a document to electronic format (e.g., PDF files, XPS format, professional layout).

Designing and Producing Web Pages

- 84 Evaluate the various methods of Web page creation (e.g., integrated software packages, Web design software, Internet browsers, programming languages).
- 85 Research and organize information for a Web site.
- 86 Compare the features and functions associated with the Internet, intranets, and extranets.
- 87 Plan and create a Web site, applying design features (e.g., ruled lines, lists, headings, backgrounds, frames, tables).
- 88 Apply Web page design features (e.g., ruled lines, lists, headings, background, frames, tables).
- 89 Create hypertext links to other pages or sites.
- 90 Proofread, edit, and test a Web site for functionality.
- 91 Critique a Web site, according to accepted Web design principles.
- 92 Develop a plan for posting, updating, and maintaining a Web site.
- 93 Describe various methods of publicizing and promoting a new Web site.

Maintaining, Managing, and Troubleshooting Systems

- 94 Evaluate workstations, equipment, software, and supplies for design, layout, and purchase.
- 95 Maintain and upgrade workstations, equipment, software, and supplies.
- 96 Analyze software problems to obtain assistance via electronic and hard-copy references and documentation.
- 97 Troubleshoot hardware problems (e.g., proper connections, scanner, printer, speakers, auxiliary drives).
- 98 Explore tools (e.g., defragmenter, file compression, scan disk, diagnostic) to manage the operating system.
- 99 Demonstrate (or explain) how to install software and customize defaults.
- 100 Backup/restore programs and data files.

- 101 Investigate advanced desktop configuration techniques (e.g., control panel).
- 102 Scan storage devices and equipment for viruses and spyware and disinfect as needed.
- 103 Install peripherals (e.g., scanner, digital camera, fax machine, modem).
- 104 Comply with safety and ergonomic precautions associated with computer use.
- 105 Compare operating systems (e.g., Windows, Macintosh, Unix, Linux).
- 106 Investigate security issues related to Internet technology (e.g., viruses, firewalls, spam, system backup, passwords, wireless devices, data encryption).

Executing Networking Activities

- 107 Identify network types and topologies (e.g., LAN, WAN, bus, ring, star).
- 108 Identify components of a local area network.
- 109 Identify file structures on networks (e.g., folders, directories, subfolders).
- 110 Explain the steps to download software/files to a specific workstation.
- 111 Identify basic network protocols (e.g., TCP/IP, FTP, Voice over IP).
- 112 Explain the importance of network security (e.g., ethics, rights).
- 113 Troubleshoot network problems (e.g., understanding network diagnostic tools).

Implementing Programming Activities

- 114 Enter, run, and debug a program.
- 115 Code an application program using arithmetic functions.
- 116 Code an application program using embedded data.
- 117 Improve appearance of printed reports.
- 118 Design interactive programs.
- 119 Write programs to summarize data.
- 120 Write programs to subtotal and group print.
- 121 Write modular programs.
- 122 Write programs using controlled loops.
- 123 Implement tables.
- 124 Code an application program using sort routine.
- 125 Code an application program to display a graphic scene.
- 126 Explore the characteristics and uses of artificial intelligence and expert systems.

Exploring Legal and Ethical Issues

- 127 Comply with copyright and patent laws pertaining to scanned images and documents, electronic clip art, recorded sounds, recorded and scanned photography, trademarks, and other elements adapted for use in desktop publishing, multimedia, and Web documents.
- 128 Analyze situations where scanned/digitized audiovisual elements, documents, and electronic graphs may be used legally but are ethically questionable.
- 129 Comply with policies regarding acceptable use of technology.
- 130 Investigate computer crime and privacy issues related to Internet technology.
- 131 Apply concepts of security, integrity, courtesy, and confidentiality related to information and communication systems and intellectual property.
- 132 Investigate the design of Web sites for accessibility and accommodation of special needs (i.e., Americans with Disabilities Act, multilingual).

Preparing for Industry Certification

- 133 Describe the process and requirements for obtaining industry certifications related to the Advanced Computer Information Systems course.
- 134 Identify testing skills/strategies for a certification examination.
- 135 Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions like those on certification exams).

- 136 Successfully complete an industry certification examination representative of skills learned in this course (e.g., MOS, IC3, NOCTI).

Developing Employability Skills

- 137 Explore domestic and international job opportunities (using the Internet, newspapers, and other sources).
- 138 Update resume.
- 139 Add representative work samples to portfolio, including resume format suitable for online posting.
- 140 Use electronic sources to research a company in preparation for a job interview.
- 141 Participate in a mock interview.
- 142 Compose an interview follow-up letter.
- 143 Identify criteria for evaluating self-performance.
- 144 Prepare a letter of resignation.
- 145 Explore career and college options for lifelong learning.
- 146 Investigate new and emerging technological trends in the workplace (e.g., video/teleconferencing, workgroup computing, telecommuting, virtual office, voice recognition, electronic calendars and task lists).
- 147 Identify potential employment barriers for nontraditional groups and ways to overcome the barriers.

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Produced by the Department of Teaching and Learning.
For further information, please call (757) 263-1070.

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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