



Department of Teaching & Learning
Parent/Student Course Information

Cybersecurity Systems Technology I
(AT8685)
Three Credits, One Year
Grades 9 - 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

We use technology on a daily basis, but has it ever crossed your mind how it all works? This course focuses on the hardware and software of computing devices with an overview of cybersecurity. Here you will learn how to build, repair, and secure desktop computers, servers, laptops, and networks, as well as install, configure, troubleshoot, and secure various operating systems all through hands-on labs. While in this program you will have the opportunity to earn certifications like the Computing Technology Industry Association (CompTIA) A+ (1st year), Server + (2nd year), and Microsoft Technology Associate (MTA) which are highly desired in the IT and Cybersecurity job market. A+ certified second-year students will have the opportunity to participate in internships.

CERTIFICATION

CompTIA A+ Certification Exam
Server + (2nd year)
Microsoft Technology Associate (MTA)

STUDENT ORGANIZATION

SkillsUSA is a co-curricular organization for all students enrolled in trade and industrial education programs. SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. SkillsUSA helps students excel by providing educational programs, events and competitions that support career and technical education (CTE) in the nation's classrooms. Students are highly encouraged to participate.

PREREQUISITE

None

OPTIONS FOR NEXT COURSE

Cybersecurity Systems Technology II

REQUIRED STUDENT TEXTBOOK

None

COMPETENCIES FOR CYBERSECURITY SYSTEMS TECHNOLOGY I

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.

Demonstrating Ethical Behavior with Computer Systems Technology

39 Identify security issues related to computer hardware, software, and data.

40 Identify concepts related to copyright, public domain, copy protection, intellectual property, and licensing agreements.

41 Identify concepts of cybersecurity, honesty, courtesy, and confidentiality related to information and email systems and social networking (e.g., spam, viruses, and etiquette).

42 Investigate Internet privacy issues and computer crimes, including identity theft.

43 Comply with copyright and patent laws.

44 Comply with policies regarding acceptable use of technology.

Exploring Hardware

45 Configure settings using Basic Input-Output System/Unified Extensible Firmware Interface (BIOS/UEFI) tools on a personal computer (PC).

46 Describe the purposes and properties of motherboard components.

47 Compare various RAM types and their features.

48 Install PC expansion cards.

49 Install various types of CPUs.

50 Describe the characteristics and purposes of various PC connection interfaces.

51 Install a power supply.

52 Select appropriate components for a custom PC configuration to meet customer specifications or needs.

53 Install storage devices.

54 Compare types of displays.

55 Identify common PC connector types and associated cables.

56 Install common peripheral devices.

57 Install Small Office, Home Office (SOHO) multifunction device/printers.

58 Compare differences between the various print technologies and the associated imaging process.

59 Perform appropriate printer maintenance.

Exploring Networking

60 Identify the various types of network cables and connectors.

61 Compare the characteristics of connectors and cabling.

62 Explain the properties and characteristics of Transmission Control Protocol/Internet Protocol (TCP/IP).

63 Explain common TCP and User Datagram Protocol (UDP) ports, protocols and their purpose.

64 Compare various Wireless Fidelity (WiFi) networking standards and encryption types.

65 Install SOHO wireless/wired router.

66 Compare Internet connection types, network types, and their features.

67 Compare network architecture devices, their functions and features.

68 Use networking tools.

Exploring Mobile Devices

69 Install laptop hardware and components.

70 Describe the function of components within the display of a laptop.

71 Demonstrate various laptop features.

72 Explain the characteristics of various types of mobile devices.

73 Compare accessories and ports of other mobile devices.

Troubleshooting Hardware and Networking

74 Troubleshoot common problems related to motherboards, RAM, CPU, and power.

75 Troubleshoot hard drives and RAID arrays.

76 Troubleshoot common video, projector, and display issues.

- 77 Troubleshoot wired and wireless networks.
- 78 Troubleshoot common mobile devices.
- 79 Troubleshoot printers.

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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 Brandon.Martin@vbschools.com.

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