Great Oaks IT Systems and Cybersecurity Essential Skills Profile

This profile provides an outline of the skills required for successful completion of this career program. Additional information is located on the Great Oaks website at http://hs.greatoaks.com/essential-skills-high-school-programs/ and selecting the corresponding career program.

Recommended WorkKeys® Scores for IT Systems and Cybersecurity

Applied Mathematics-5	Graphic Literacy-4
Workplace Documents-5	

*Practice tests and more information at www.act.org/workkeys

Essential Skills Needed to Successfully Complete the Program			
Rating Key:	**Low = Slightly Essential**	**Medium = Essential**	**High = Very Essential**

Key Vocational Factors		**Rating**
Visual Acuity	The ability to detect differences/details visually	High
Depth Perception	The ability to detect the physical distance/depth of objects in space and time	High
Oral Communication	The ability to express/explain ideas	High
Oral Expression	The ability to verbally explain and express self in an intelligible manner so others will understand	High
Written Communication	The ability to communicate in a written format and record information accurately	Medium
Physical Mobility/Strength	Extended standing, bending, stooping, and lifting/moving computers, sitting for extended times	Medium
Eye-hand Coordination	The ability to use tools	High
Auditory Acuity	The ability to detect differences in pitch and sound	Medium
Clerical Perception	Ability to perceive pertinent detail in verbal and tabular material	High

Worker Trait Skills	**Rating**
Ability to get along with others	Medium
Ability to work independently, without close supervision	Medium
Ability to work toward work including tasks of minimal interest	Medium
Ability to work accurately, recheck and correct work, to an industry standard	High
Ability to follow and retain:	
Multistep oral instructions	Medium
Written instructions/technical manuals - multistep	Medium
Simple to complex diagram instructions	Medium
Visual models or demonstrated instructions	Medium
Ability to use tools of trade (computer, screwdriver, soldering iron, etc.)	High
Ability to use numerical data (count, measure, compute, etc.) in applied setting	Medium

Ability to discriminate between objects of similar:	
Size	Medium
Shape	Medium
Color	Medium
Spatial relationship	Medium
Ability to organize work process/follow defined procedures	High
Ability to refer to charts for troubleshooting and specifications	High
Able to sequence events or follow a sequence as necessary	High
Active Listening: Give full attention to what other people are saying, taking time to understand the points being made, asking appropriate questions and not interrupting	High
Reading Comprehension: Understanding written sentences and paragraphs in work related documents	High
Speaking: Talking to others to convey information effectively	High
Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems	High

Reading Skills *See Recommended WorkKeys® Scores Above	
Math Skills *See Recommended WorkKeys® Scores Above	
Counting, recording, comparing, calculating	Whole numbers and decimals
Calculating fractions, decimals, ratios, order of operations	Geometry
Ratio, Algebra, Formulas, Square Roots	Advanced Algebra
	*Solid Higher-Level Math with Minimum of Algebra

Additional Abilities Required

Oral Comprehension	The ability to listen to and understand information and ideas presented through spoken words and sentences.
Oral Expression	The ability to communicate information and ideas in speaking so others will understand.
Written Comprehension	The ability to read and understand information and ideas presented in writing.

Knowledge Required in IT Systems and Cybersecurity Field

English Language	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
Computers and Electronics	Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
Customer and Personal Service	Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

IT Systems and Cybersecurity Work Activities

Networking activities, program activities, web design, activities	Microsoft Office activities
Oversee the daily performance of computer systems.	Answer user inquiries regarding computer software or hardware operation to resolve problems.
Enter commands and observe system functioning to verify correct operations and detect errors.	Set up equipment for employee use, performing or ensuring proper installation of cables, operating systems, or appropriate software.
Install and perform minor repairs to hardware, software, or peripheral equipment, following design or installation specifications.	Maintain records of daily data communication transactions, problems and remedial actions taken, or installation activities.
Read technical manuals, confer with users, or conduct computer diagnostics to investigate and resolve problems or to provide technical assistance and support.	Refer major hardware or software problems or defective products to vendors or technicians for service.
Develop training materials and procedures, or train users in the proper use of hardware or software.	Confer with staff, users, and management to establish requirements for new systems or modifications.
Prepare evaluations of software or hardware, and recommend improvements or upgrades.	Hire, supervise, and direct workers engaged in special project work, problem solving, monitoring, and installing data communication equipment and software.
Inspect equipment and read order sheets to prepare for delivery to users.	Read trade magazines and technical manuals, or attend conferences and seminars to maintain knowledge of hardware and software.
Modify and customize commercial programs for internal needs.	Conduct office automation feasibility studies, including workflow analysis, space design, or cost comparison analysis.

Back up network data.	Configure security settings or access permissions for groups or individuals.
Configure wide area network (WAN) or local area network (LAN) routers or related equipment.	Install network software, including security or firewall software.
Evaluate local area network (LAN) or wide area network (WAN) performance data to ensure sufficient availability or speed, to identify network problems, or for disaster recovery purposes.	Monitor industry websites or publications for information about patches, releases, viruses, or potential problem identification
Install and configure wireless networking equipment.	Create or revise user instructions, procedures, or manuals.
Run monthly network reports.	Document network support activities.

Technology

Web platform development software	Operating system software
Enterprise resource planning ERP software	Development environment software
Database user interface and query software	

Available Certifications

Microsoft Technology Associate Database (6 Points)	CompTIA A+ (6 Points)
Microsoft Technology Associate IT Infrastructure (6 Points)	Microsoft Technology Associate Developer (6 Points)
CPR/First Aid Certification (1 Point)	IC3 Digital Literacy (2 Points)
Networking Fundamentals	Software Testing Fundamentals
Window Server Administration Fundamentals	Database Fundamentals
Software Development Fundamentals	HTML5 App Development Fundamentals

Possible College Credits

College Credit Plus in English, Math, Social Studies, or Science	Must be preapproved. Must pass a college course at an Ohio college or College Credit Plus class at Great Oaks.
Articulated Credit	Great Oaks has agreements with certain colleges that may give you credits for a specific degree. Possible agreements are: • Cincinnati State Technical and Community College (PC Support and Administration, up to 9 credit hours possible • Hocking College (Computer Programming, up to 4 credit hours possible; Network Systems, up to 4 credit hours possible) • Southern State Community College (Computer Technology/networking, up to 12 credit hours possible, Management Information Systems, up to 14 credit hours possible; Computer Technology, up to 12 credit hours possible) • Chatfield College (Liberal Arts, up to 9 credit hours possible)
Career Technical Credit Transfer	The Ohio Transfer to Degree Guarantee helps career and technical students transfer credits earned in high school to community college or four-year degree programs. The credit can be used at any Ohio public college or university: • If you successfully completed your Career-Technical program and passed certain required assessments. • If you attend a similar program at a public Ohio college or university. For more information, go to www.transfercredit.ohio.gov

*Additional college or post-secondary education may be required in this field

Possible Career Pathways

Computer Repair Technician	Cable installer
Network Administrator	Web Designer/Developer
Applications Specialist	Programmer
IT Manager	