

CTE: THE KEY TO ECONOMIC DEVELOPMENT

Information Technology:

Accounts for
10.5%
of the U.S. economy¹

Includes about
585,000
tech businesses²

Pays almost **2x**
the median wage³

What is the pathway to these fulfilling and essential careers?

Career and Technical Education!



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Information Technology

At the forefront of American innovation, the IT sector:

- includes software and hardware development, cloud and mobile computing, cybersecurity, data management, and more
- relies on highly skilled employees
- improves productivity in the United States and worldwide

What jobs are available in IT?

Many daily activities in the professional and personal lives of Americans depend on information technology. This trend accelerated in 2020 as more jobs transitioned to remote work and schools to online learning. There are currently about 5.2 million jobs in IT with an expected increase of at least 15% over the 2020-2030 period – much faster growth than for other industries.⁴ Demands for new web applications and enhanced digital security will drive job growth for information security analysts, software and web developers, database administrators, IT support specialists, and software quality assurance analysts and testers.⁵ In particular, cybersecurity employment is expected to increase by 31% through the next decade.⁶

Moreover, information technology is one of the best-paying jobs. IT employees earn a median wage of almost \$86,900 per year, 89% higher than the national median wage.⁷ This is true even for middle-skill employees with less than a bachelor's degree. For instance, web developers and digital designers with an associate degree can earn \$77,200 annually, and computer network support specialists educated at the same level can earn about \$65,500.⁸

The majority of jobs in information technology will require some postsecondary education, and IT programs often provide students with opportunities to earn valuable industry certifications in addition to academic credentials. Occupations in IT require academic, technical and employability skills and are found in a broad range of industries, including health care, finance and media. In addition, there are many non-technical occupations within the sector, such as project managers. The following reflect just a few of the jobs available in IT:

- information systems managers
- network support technicians
- computer programmers
- software developers
- database administrators
- computer support specialists
- information security analysts
- web developers



Endnotes

1. CompTIA. (2021). *Cyberstates*. Retrieved from <https://www.cyberstates.org>
2. Ibid.
3. Ibid.
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How does CTE prepare the IT workforce?

Career and technical education prepares high school, postsecondary and adult students for careers in information technology through:

- the national Career Clusters® Framework—including Career Clusters and pathways in IT; arts, A/V technology and communications; and STEM—which outlines course progressions that help students explore career options and prepare for college and career success
- CTE courses in information support and services, computer maintenance, mobile applications, webpage design, network security, computer programming and more, all integrated with rigorous academics
- work-based learning experiences, such as the 12-week paid internship available as part of Midlands TechHire, a partnership between Midlands Technical College in Columbia, South Carolina, and 24 grant partners, which offers scholarships, training and job opportunities for the high-growth IT field⁹
- career and technical student organization experiences, such as SkillsUSA and Technology Student Association competitions in IT services, computer programming, web design and development, video game design and more¹⁰
- opportunities to earn stackable certificates and degrees as well as industry-recognized certifications through organizations such as Apple, Cisco, CompTIA, Oracle and Sun

What are promising programs in IT?

Through the **Cybersecurity Networking Academy** at the Applications and Research Laboratory — Howard County, Maryland's area CTE center — students learn to analyze and mitigate cyber threats related to hardware, software, operating systems and networking through Cisco-certified and National CyberWatch Center curricula. The program incorporates opportunities for students to participate in work-based learning and earn industry certifications such as CompTIA A+, CompTIA Security+, Cisco Certified Network Engineer Technician and Cisco Certified Network Administrator. In addition, students can gain college credits from Howard Community College, which is a National Center of Academic Excellence in Information Assurance with a curriculum that maps to National Security Agency and Department of Homeland Security standards.¹¹

Green River College in Auburn, Washington, is expanding access to education and careers in software development, cybersecurity, data science and networking to students in the region. Green River's IT education programs start in high school through dual enrollment and continue through certificate, associate degree and applied baccalaureate degree programs that use industry-relevant curriculum and tools as well as virtualization software for on-campus and at-home practice. The program is committed to equity through continuous analysis of program data and practices, flexible scheduling, and a partnership with Muckleshoot Tribal College to make more IT opportunities available to Native American students. The Green River College IT program boasts a diverse student population and won the 2021 Excellence and Equity in Community College STEM Award from the Siemens Technical Schools Program, a collaboration of the Aspen Institute College Excellence Program and the Siemens Foundation.¹²



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