

Information Technology Career Cluster

The Information Technology (IT) career cluster focuses on the design, development, support, and management of hardware, software, multimedia, and systems integration services. This career cluster includes occupations ranging from Software Developer and Programmer to Cybersecurity Specialists and Network Analysts.

Statewide Program of Study: Cybersecurity

The Cybersecurity program of study focuses on occupational and educational opportunities associated with planning, implementing, upgrading, or monitoring security measures for the protection of computer networks and information. This program of study includes responding to computer security breaches and viruses and administering network security measures.

Secondary Courses for High School Credit

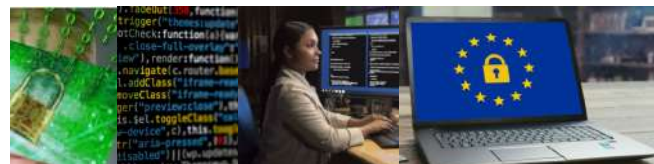
- Level 1**
 - Principles of Information Technology
 - Fundamentals of Computer Science
 - Foundations of Cybersecurity
- Level 2**
 - Computer Science I
 - Internetworking Technologies I (Cisco)
 - Computer Maintenance
 - Computer Maintenance + Computer Maintenance Lab
 - AP Computer Science Principles
- Level 3**
 - Engineering Applications of Computer Science Principles
 - Internetworking Technologies II (Cisco)
 - Advanced Cloud Computing
 - Digital Forensics
 - Discrete Mathematics for Computer Science
 - Networking
 - Networking + Networking Lab
 - AP Computer Science A
 - IB Computer Science Standard Level
 - IB Computer Science Higher Level
- Level 4**
 - Independent Study in Technology Applications
 - Independent Study in Evolving/Emerging Technologies
 - Cybersecurity Capstone
 - Career and Technical Education Project-Based Capstone
 - Practicum in Information Technology
 - Practicum in Information Technology + Extended Practicum in Information Technology
 - Practicum in Engineering
 - Practicum in Engineering + Extended Practicum in Engineering
 - Career Preparation for Programs of Study
 - Career Preparation for Programs of Study + Extended Career Preparation

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> • Intern at a local bank, hospital, or government office to develop skills in implementing security measures • Interview with an information security analyst to learn how they plan for, monitor, and upgrade security measures at their organization
Expanded Learning Opportunities	<ul style="list-style-type: none"> • Participate in a Hackathon • Participate in TSA or SkillsUSA

Aligned Industry-Based Certifications

- AWS Certified Cloud Practitioner
- AWS Certified Solutions Architect - Associate
- AWS Certified SysOps Administrator - Associate
- Cabling Specialist Fiber Optic Systems
- Certified Associate JavaScript Programmer
- Certified Entry-Level JavaScript Programmer
- Certified Ethical Hacker (CEH)
- Certified in Cybersecurity
- Certified Network Defender (CND)
- Cisco Certified Network Administrator (CCNA)
- Cisco Certified Network Associate (200-301 CCNA)
- Cisco Certified Support Technician Cybersecurity
- Cisco Certified Support Technician Networking
- CompTIA A+ Certification
- CompTIA Cybersecurity Analyst (CySA+)
- CompTIA Linux+
- CompTIA Network+
- CompTIA Security+
- CompTIA Server+
- CompTIA Tech+
- Computer Hacking Forensic Investigator (CHFI) Certification
- Computer Networking Fundamentals - Job Ready
- Cybersecurity Fundamentals
- CyberSecurity Fundamentals: An ISACA Certificate
- Digital Forensics Essentials (DFE)
- Ethical Hacking Essentials (EHE)
- Information Technology Specialist Cloud Computing
- Information Technology Specialist Cybersecurity
- Information Technology Specialist Network Security
- Information Technology Specialist: Java
- Information Technology Specialist: JavaScript
- Information Technology Specialist: Networking
- Knowledge Pillars: Cyber Defense Specialist (CDS)
- Knowledge Pillars: JavaScript Coding Specialist (JSCS)
- Microsoft 365: Fundamentals
- Microsoft Certified: Azure Administrator Associate
- Microsoft Certified: Azure Fundamentals
- Microsoft Certified: Azure Solutions Architect Expert
- Microsoft Security, Compliance, and Identity Fundamentals
- Network Cabling Specialist Copper-based Systems
- Network Defense Essentials (NDE)
- Oracle Certified Associate Java SE 8 Programmer
- Telecommunications Technologies
- Tosa JavaScript (Advanced or Expert)
- Understanding Cisco Cybersecurity Operations Fundamentals (200-201 CBROPS)



Examples Postsecondary Opportunities

Associate Degrees

- Computer and Information Systems Security
- Computer Programming

Bachelor's Degrees

- Computer Science
- Computer Software Engineering

Master's, Doctoral, and Professional Degrees

- Computer and Information Systems Security/Auditing/Information Assurance
- Computer Software Engineering

Additional Stackable IBCs/License

- Certified Ethical Hacker (CEH)



Example Aligned Occupations

Computer User Support Specialists

Median Wage: \$51,823
Annual Openings: 6,387
10-Year Growth: 21%

Software Developers

Median Wage: \$127,000
Annual Openings: 12,350
10-Year Growth: 36%

Information Security Analysts

Median Wage: \$115,042
Annual Openings: 1,760
10-Year Growth: 49%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/it-cybersecurity-extendedpptx.pdf>