



Information Technology Career Cluster

The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

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	- Cybersecurity Capstone - Independent Study In Technology Applications - Independent Study in Evolving/Emerging Technologies - Practicum in Information Technology - Practicum in Information Technology + Extended Practicum in Information Technology - Practicum in Science, Technology, Engineering, and Mathematics - Practicum in Science, Technology, Engineering, and Mathematics + Extended Practicum in Science, Technology, Engineering, and Mathematics - Career Preparation for Programs of Study - Career Preparation for Programs of Study + Extended Career Preparation - Career and Technical Education Project-Based Capstone

Aligned Advanced Academic Courses

AP or IB

AP Computer Science A
AP Computer Science Principles

Dual Credit

Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Intern at a local bank, hospital, or government office to develop skills in implementing security measures
- Interview an information security analyst to learn how they plan for, monitor, and upgrade security measures at their organization

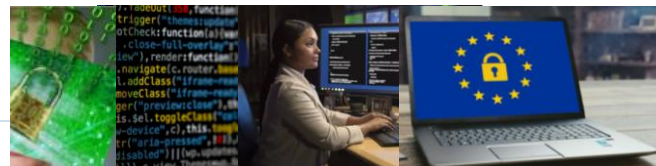
Expanded Learning Opportunities

- Participate in a Hackathon
- Participate in TSA or SkillsUSA

Aligned Industry-Based Certifications

- | | |
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| <ul style="list-style-type: none"> Cisco 100-490 RSTech Supporting Cisco Routing and Switching Network Devices Cisco 200-201 CBROPS - Understanding Cisco Cybersecurity Operations Fundamentals Cisco CCNA (200-301) Implementing and Administering Cisco Solutions CodeHS Cybersecurity Level 1 Certification CompTIA A+ Certification CompTIA IT Fundamentals+ CompTIA Network+ CompTIA Security+ Computer Networking Fundamentals - Job Ready | <ul style="list-style-type: none"> Cybersecurity Fundamentals Cybersecurity Fundamentals: An ISACA Certificate Information Technology Specialist: Networking Information Technology Specialist: Java Information Technology Specialist: JavaScript Microsoft 365 Fundamentals Microsoft Security, Compliance, and Identity Fundamentals Oracle Certified Associate Java SE 8 Programmer Cloud Essentials+ CompTIA Linux+ CompTIA Server+ |
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Successful completion of the Cybersecurity program of study will fulfill requirements of the STEM Endorsement if the math and science requirements are met or the Business and Industry endorsement.



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/Licensures

- Certified Ethical Hacker (CEH)



Example Aligned Occupations

Computer User Support Specialists

Median Wage: \$48,099
Annual Openings: 8,412
10-Year Growth: 26%

Software Developers

Median Wage: \$103,195
Annual Openings: 15,635
10-Year Growth: 55%

Information Security Analysts

Median Wage: \$100,592
Annual Openings: 2,215
10-Year Growth: 56%

Data Source: Lightcast™. (2022). Occupation Table. Retrieved 9/27/2022.



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



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Statewide Program of Study: Cybersecurity

Course Information

Level 1

Course	Prerequisites Corequisites	Career Clusters
Principles of Information Technology* 13027200 (1 credit)	Prerequisites: None Corequisites: None	
Fundamentals of Computer Science* 03580140 (1 credit)	Prerequisites: None Corequisites: None	
Foundations of Cybersecurity 03580850 (1 credit)	Prerequisites: None Corequisites: None	

Level 2

Course	Prerequisites Corequisites	Career Clusters
Computer Science I* 03580200 (1 credit)	Prerequisites: Algebra I or Corequisites: Algebra I	
Internetworking Technologies I (Cisco)* N1302803 (1 credit)	Prerequisites: None Corequisites: None	
Computer Maintenance* 13027300 (1 credit)	Prerequisites: None Corequisites: None	
Computer Maintenance + Computer Maintenance Lab* 13027310 (2 credits)	Prerequisites: None Corequisites: None	
AP Computer Science Principles* A3580300 (1 credit)	Prerequisites: None Corequisites: None	

Level 3

Course	Prerequisites Corequisites	Career Clusters
Engineering Applications of Computer Science Principles N1303772 (1 credit)	Prerequisites: Algebra I Corequisites: None	
Internetworking Technologies II (Cisco)* N1302804 (1 credit)	Prerequisites: Internetworking Technologies I Corequisites: None	
Advanced Cloud Computing* N1302813 (1 credit)	Prerequisites: None Corequisites: None	

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* Indicates course is included in more than one program of study.

For additional information on the **Information Technology Career Cluster**, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



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Course Information

Level 3

Course	Prerequisites Corequisites	Career Clusters
Digital Forensics 03580360 (1 credit)	Prerequisites: Foundations of Cybersecurity Corequisites: None	
Discrete Mathematics for Computer Science* 03580370 (1 credit)	Prerequisites: Algebra II Corequisites: None	
Networking* 13027400 (1 credit)	Prerequisites: None Corequisites: None	
Networking + Networking Lab* 13027410 (2 credits)	Prerequisites: None Corequisites: None	
AP Computer Science A A3580110 (1 math credit) A3580120 (1 LOTE credit)	Prerequisites: None Corequisites: None	
IB Computer Science Standard Level* I3580200 (2 credits)	Prerequisites: None Corequisites: None	
IB Computer Science Higher Level * I3580310 (1 math credit) I3580320 (1 LOTE credit)	Prerequisites: None Corequisites: None	

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Course Information

Level 4

Course	Prerequisites Corequisites	Career Clusters
Cybersecurity Capstone 03580855 (1 credit)	Prerequisites: Foundations of Cybersecurity Corequisites: None	
Independent Study In Technology Applications First Time Taken: 03580900 (1 credit)	Prerequisites: None Corequisites: None	
Independent Study in Evolving/Emerging Technologies First Time Taken: 03581500 (1 credit)	Prerequisites: None Corequisites: None	
Practicum in Information Technology* First Time Taken: 13028000 (2 credits) Second Time Taken: 13028010 (2 credits)	Prerequisites: A minimum of two high school information technology (IT) courses Corequisites: None	
Practicum in Information Technology + Extended Practicum in Information Technology* First Time Taken: 13028005 (3 credits) Second Time Taken: 13028015 (3 credits)	Prerequisites: Minimum of two high school information technology (IT) courses. Corequisites: Practicum in Information Technology	
Practicum in Science, Technology, Engineering, and Mathematics First Time Taken: 13037400 (2 credits) Second Time Taken: 13037410 (2 credits)	Prerequisites: Algebra I and Geometry Corequisites: None	

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Level 4

Course	Prerequisites Corequisites	Career Clusters
Practicum in Science, Technology, Engineering, and Mathematics + Extended Practicum in Science, Technology, Engineering, and Mathematics First Time Taken: 13037405 (3 credits) Second Time Taken: 13037415 (3 credits)	Prerequisites: Algebra I and Geometry Corequisites: Practicum in Science, Technology, Engineering, and Mathematics	   
Career Preparation for Programs of Study (2 credits)	Prerequisites: at least one Level 2 or higher Career and Technical Education course Corequisites: None	             
Career Preparation for Programs of Study + Extended Career Preparation (3 credits)	Prerequisites: at least one Level 2 or higher Career and Technical Education course Corequisites: None	             
Career and Technical Education Project-Based Capstone First Time Taken:	Prerequisites: None Corequisites: None	        

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