



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.

CFISD Program of Study: Cybersecurity

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.

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.



Recommended Course Sequence (credits)(A=advanced)

Students wanting an endorsement in this area must select three (3) or more courses totaling four (4) or more credits with at least one being advanced.

Grade 9	<ul style="list-style-type: none"> Principles of Information Technology (1-middle school only) Networking (1)
Grade 10	<ul style="list-style-type: none"> AP Computer Science Principles (1-LOTE) OR Computer Science I K (1-LOTE) AND Internetworking Technologies I (Cisco) (1)
Grade 11	<ul style="list-style-type: none"> Internetworking Technologies II (Cisco) (1) (A)
Grade 12	<ul style="list-style-type: none"> Capstone – Cybersecurity (1) (A) AND/OR Practicum in Information Technology (2) (A)

Aligned Industry-Based Certifications Offered in CFISD

(course) (CCMR=impacts “career ready” status as outlined by the TEA Accountability System for College, Career or Military Readiness)

- Cisco CCNA (200-301) Implementing and Administering Cisco Solutions (Internetworking Technologies II) (CCMR)
- CompTIA A+ Certification (Networking) (CCMR)
- CompTIA Network+ (Internetworking Technologies I) (CCMR)
- CompTIA Server+ (Internetworking Technologies II) (CCMR)
- Information Technology Specialist: Networking (Internetworking Technologies I) (CCMR)
- Potential college credit via AP exams (AP Computer Science Principles)

Aligned Advanced Academic Courses

Workforce Dual Credit

See your counselor or dual credit materials for information on courses leading to a Networking/Cybersecurity Certificate/Degree.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Interview with an information security analyst to learn how they plan for, monitor, and upgrade security measures at their organization

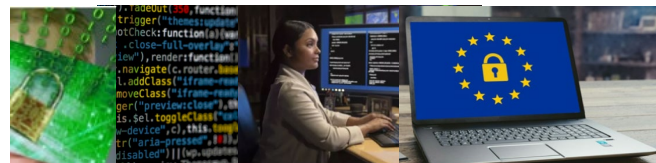
Expanded Learning Opportunities

- Participate in TSA or SkillsUSA



- Receive training on industry-standard material, software & equipment.
- Enhance your resume by earning recognized industry-based certifications.
- Get a jump-start by taking advantage of core curriculum dual credit, transferable to 2-yr and 4-yr degrees.

ALL AT A FRACTION OF THE COST!



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

Data Source: Texas Wages, Texas Workforce Commission. rev 3/8/2024

Computer User Support Specialists

Median Wage: \$51,411
Annual Openings: 5,757
10-Year Growth: 21%

Software Developers

Median Wage: \$111,705
Annual Openings: 15,324
10-Year Growth: 36%

Information Security Analysts

Median Wage: \$110,268
Annual Openings: 1,719
10-Year Growth: 49%



For more information on this and other CTE programs of study offered in CFISD, visit <https://www.cfisd.net/academics/career-technical-education/programs-of-study>

What's next? For more information on related programs available to continue your studies at Lone Star College, visit <https://www.lonestar.edu/programs-of-study>





Information Technology Career Cluster

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 Recommended Prerequisites: None Recommended Corequisites: None	
Fundamentals of Computer Science* 03580140 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Foundations of Cybersecurity 03580850 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

Level 2

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

* 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>



Information Technology Career Cluster

Statewide Program of Study: Cybersecurity

Course Information

Level 3

Course	Prerequisites Corequisites	Career Clusters
Engineering Applications of Computer Science Principles N1303772 (1 credit)	Prerequisites: Algebra I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Internetworking Technologies II (Cisco)* N1302804 (1 credit)	Prerequisites: Internetworking Technologies I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Advanced Cloud Computing* N1302813 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: At least one credit in a Level 2 or higher course in computer science, programming, software development, or networking systems Recommended Corequisites: None	
Digital Forensics 03580360 (1 credit)	Prerequisites: Foundations of Cybersecurity Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Discrete Mathematics for Computer Science* 03580370 (1 credit)	Prerequisites: Algebra II Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Networking* 13027400 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Information Technology, Computer Maintenance, and Computer Maintenance Lab Recommended Corequisites: None	
Networking + Networking Lab* 13027410 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Information Technology, Computer Maintenance, and Computer Maintenance Lab Recommended Corequisites: None	

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Course Information

Level 3

Course	Prerequisites Corequisites	Career Clusters
AP Computer Science A* A3580110 (1 math credit) A3580120 (1 LOTE credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Algebra I or a student should be comfortable with functions and the concepts found in the uses of functional notation such as $f(x) = x + 2$ and $f(x) = g(h(x))$ Recommended Corequisites: None	
IB Computer Science Standard Level* I3580200 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Computer Science I, Algebra II Recommended Corequisites: None	
IB Computer Science Higher Level* I3580310 (1 math credit) I3580320 (1 LOTE credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Computer Science I, Algebra II Recommended Corequisites: None	

Level 4

Course	Prerequisites Corequisites	Career Clusters
Independent Study in Technology Applications* First Time Taken: 03580900 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: A minimum of one credit from the courses in the Information Technology career cluster Recommended Corequisites: None	
Independent Study in Evolving/Emerging Technologies* First Time Taken: 03581500 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: A minimum of one credit from the courses in the Information Technology career cluster Recommended Corequisites: None	
Cybersecurity Capstone 03580855 (1 credit)	Prerequisites: Foundations of Cybersecurity Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Career and Technical Education Project-Based Capstone* First Time Taken: 12701101 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

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Information Technology Career Cluster

Statewide Program of Study: Cybersecurity

Course Information

Level 4

Course	Prerequisites Corequisites	Career Clusters
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 Recommended Prerequisites: None Recommended Corequisites: None	
Practicum in Information Technology + Extended Practicum in Information Technology* First Time Taken: 13028005 (3 credits) Second Time Taken: 13028015 (3 credits)	Prerequisites: A minimum of two high school information technology (IT) courses. Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
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 Recommended Prerequisites: None Recommended Corequisites: None	
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: None Recommended Prerequisites: None Recommended Corequisites: None	
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Level 4

Course	Prerequisites Corequisites	Career Clusters
Career Preparation for Programs of Study* First Time Taken: 12701121 (2 credits)	Prerequisites: At least one Level 2 or higher CTE course Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Career Preparation for Programs of Study + Extended Career Preparation* First Time Taken: 12701141 (3 credits)	Prerequisites: At least one Level 2 or higher CTE course Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

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