



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: Networking Systems

The Networking Systems program of study focuses on occupations and educational opportunities associated with designing and implementing computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. This program of study includes analysis of data processing challenges to implementing and improving computer systems.



Secondary Courses for High School Credit

Level 1	<ul style="list-style-type: none"> Principles of Information Technology Fundamentals of Computer Science
Level 2	<ul style="list-style-type: none"> Computer Science I Internetworking Technologies I (Cisco) Computer Maintenance Computer Maintenance + Computer Maintenance Lab AP Computer Science Principles Entrepreneurship I
Level 3	<ul style="list-style-type: none"> Internetworking Technologies II (Cisco) Advanced Cloud Computing Networking Networking + Networking Lab
Level 4	<ul style="list-style-type: none"> Independent Study in Technology Applications Independent Study in Evolving/Emerging Technologies Career and Technical Education Project-Based Capstone Practicum in Information Technology Practicum in Information Technology + Extended Practicum in Information Technology Practicum in Entrepreneurship Practicum in Entrepreneurship + Extended Practicum in Entrepreneurship Career Preparation for Programs of Study Career Preparation for Programs of Study + Extended Career Preparation

Aligned Advanced Academic Courses

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	<ul style="list-style-type: none"> Intern at a local education, public service, or technology organization to develop skills in installing hardware and software Interview a network administrator to learn about their career path and what credentials they earned to be successful in their role
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in a Hackathon Participate in SkillsUSA or TSA

Aligned Industry-Based Certifications

- Cisco 100-490 RSTECH Supporting Cisco Routing and Switching Network Devices
- Cisco CCNA (200-301) Implementing and Administering Cisco Solutions
- CompTIA A+ Certification
- CompTIA IT Fundamentals+
- CompTIA Network+
- CompTIA Server+
- Computer Networking Fundamentals - Job Ready
- Google Cloud Certified Professional - Cloud Architect
- Information Technology Specialist: Networking
- Microsoft 365 Fundamentals
- Microsoft Azure Data Fundamentals
- Microsoft Security, Compliance, and Identity Fundamentals
- Cloud Essentials+
- CompTIA Linux+
- Cybersecurity Fundamentals

Successful completion of the Networking Systems program of study will fulfill requirements of the Business and Industry endorsement.



Example Postsecondary Opportunities

Apprenticeships

- Network Engineer Apprenticeship

Associate Degrees

- Computer Systems Networking and Telecommunications
- Network and System Administration

Bachelor's Degrees

- Computer and Information Sciences
- Information Technology

Master's, Doctoral, and Professional Degrees

- Computer Science
- Information Technology

Additional Stackable IBCs/License

- Aruba Certified Mobility Associate (ACMA)



Example Aligned Occupations

Computer Network Support Specialists

Median Wage: \$65,646
Annual Openings: 1,634
10-Year Growth: 19%

Computer Systems Analysts

Median Wage: \$101,716
Annual Openings: 4,985
10-Year Growth: 19%

Network and Computer Systems Administrators

Median Wage: \$85,375
Annual Openings: 2,900
10-Year Growth: 20%

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/programs-of-study-additional-resources>



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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	

Level 2

Course	Prerequisites Corequisites	Career Clusters
Computer Science I* 03580200 (1 credit)	Prerequisites: Algebra I Corequisites: None 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	
Entrepreneurship I* 13011101 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Business, Marketing, and Finance 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>



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Course Information

Level 3

Course	Prerequisites Corequisites	Career Clusters
Internetworking Technologies II (Cisco)* N1302804 (1 credit)	Prerequisites: None 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	
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	

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	

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Level 4

Course	Prerequisites Corequisites	Career Clusters
Career and Technical Education Project-Based Capstone* First Time Taken: 12701101 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended 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 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 Entrepreneurship* First Time Taken: 13011111 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a CTE program of study Recommended Corequisites: None	
Practicum in Entrepreneurship + Extended Practicum in Entrepreneurship* First Time Taken: 13011121 (3 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a CTE program of study 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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