

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: Programming and Software Development

The Programming and Software Development program of study focuses on occupational and educational opportunities associated with researching, designing, developing, testing, and operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computer applications. This program of study includes creating, modifying, and testing the codes, forms, and script that allow computer applications to run.

Secondary Courses for High School Credit



- Level 1**
 - Fundamentals of Computer Science
- Level 2**
 - Computer Science I
 - Game Programming and Design
- Level 3**
 - Computer Science II
 - AP Computer Science A
- Level 4**
 - Computer Science III
 - Practicum in Audio/Video Production
 - Career Preparation for Programs of Study



Example Postsecondary Opportunities

Apprenticeships

- Computer Programmer Apprenticeship



Associate Degrees

- Computer Programming
- Web Page, Digital/Multimedia and Information Resources Design

Bachelor's Degrees

- Data Science
- Computer Engineering

Master's, Doctoral, and Professional Degrees

- Management Science
- Computer Software Engineering

Additional Stackable IBCs/License

- AWS Certified Developer Associate

Aligned Advanced Academic Courses

AP or IB	AP Calculus AB AP Statistics IB Mathematics Applications and Interpretation SL
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Dual Credit	Dual credit offerings will vary by local education agency.
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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 IT company to develop skills in programming and coding • Shadow a software developer to learn how they create and improve software to support efficient processes at their company
Expanded Learning Opportunities	<ul style="list-style-type: none"> • Program and create a game • Participate in SkillsUSA or TSA

Aligned Industry-Based Certifications

- TBD



Example Aligned Occupations

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%

Computer Programmers

Median Wage: \$87,997
Annual Openings: 1,176
10-Year Growth: 4%

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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Statewide Program of Study: Programming and Software Development

Course Information

Level	Course	Prerequisites Corequisites	Career Clusters
Level 1	Fundamentals of Computer Science* 03580140 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
	Computer Science I* 03580200 (1 credit)	Prerequisites: Algebra I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Level 2	Game Programming and Design 03580380 (1 credit)	Prerequisites: Algebra I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
	Computer Science II 03580300 (1 credit)	Prerequisites: Algebra I and either Computer Science I or Fundamentals of Computer Science Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Level 3	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	
	Computer Science III 03580350 (1 credit)	Prerequisites: Computer Science II, Advanced Placement (AP) Computer Science A, or International Baccalaureate (IB) Computer Science Standard Level or IB Computer Science Higher Level Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Level 4	Practicum in Audio/Video Production First Time Taken: 13008700 (2 credits) Second Time Taken: 13008710 (2 credits)	Prerequisites: Audio/Video Production II and Audio/Video Production II Lab Corequisites: None Recommended Prerequisites: None 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>