

# Science, Technology, Engineering, and Mathematics Career Cluster

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

## Programming and Software Development Statewide Program of Study



The Programming and Software Development program of study explores the occupations and education opportunities associated with researching, designing, developing, and testing 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 may also include exploration into creating, modifying, and testing the codes, forms, and script that allow computer applications to run.

### Work-Based Learning and Expanded Learning Opportunities

#### Exploration Activities

- Join TSA
- Participate in coding club at school

#### Work-Based Learning Activities

- Obtain an industry-based certification

### Secondary Courses for High School Credit

#### Level 2

- Computer Science I

#### Level 3

- AP Computer Science A, MATH
- AP Computer Science A, LOTE

#### Level 4

- Independent Study in Technology Applications

### Industry-Based Certifications

- Certified Entry-Level Python Programmer (PCEP)
- Certified Professional Programmer

### Postsecondary Opportunities

#### Associates Degrees

- Computer Programming/Programmer General
- Computer Software Engineer
- Computer Science
- Certified Software Analyst

#### Bachelor's Degrees

- Management Information Systems, General
- Computer Software Engineer
- Computer Science
- Information Science/ Studies

#### Master's, Doctoral, and Professional Degrees

- Computer Software Engineer
- Computer Science
- Information Science/ Studies



### Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Software Developer, Systems Software	\$103,334	2,985	25%
Software Developers, Application	\$104,499	6,311	30%
Computer Programmers	\$79,893	1,454	9%

Successful completion of the Programming and Software Development program of study will fulfill requirements of the Business and Industry endorsement and STEM endorsement if the math and science requirements are met. Revised – August 2022

# Programming and Software Development Course Information

## Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Computer Science I	03580200 (1 credit)	Algebra I	None

## Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
AP Computer Science A, MATH, LOTE	A3580110 (1 credit) A3580120 (1 credit)	None	None

## Level 4

Course Name	Service ID	PREREQUISITES	COREQUISITES
Independent Study in Technology Applications	03580900 (1 credit)	None	None

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS CAREER CLUSTER,

PLEASE CONTACT: [CTE@tea.texas.gov](mailto:CTE@tea.texas.gov)  
<https://tea.texas.gov/cte>

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For inquiries regarding non-discrimination policies under Title VI, Title IX, and Section 504, contact Dr. Deana Steeber, Assistant Superintendent, via email at [deana.steeber@argyleisd.com](mailto:deana.steeber@argyleisd.com) or by phone at 940-464-7241. Dr. Steeber can also be reached at Argyle ISD's central offices, 6701 Canyon Falls Drive in Flower Mound, TX.

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Further nondiscrimination information can be found at [Notification of Nondiscrimination in Career and Technical Education Programs](#).