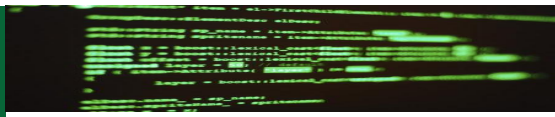# Science, Technology, Engineering, and Mathematics Career Cluster

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 & 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.

Secondary Courses for High School Credit

Level 1
- Computer Science I

Level 2
- Computer Science II

Level 3
- Computer Science III

Level 4
- Mobile App Development
- Practicum in Information Technology #

CTE Completer: 3 or more courses for 4 or more credits

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

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
• Participate in UIL competitions • Participate in independent study projects	• Obtain an industry-based certification

Industry-Based Certifications
- CodeHS Python Level 1 Certification
- Information Technology Specialist: Java
- Information Technology Specialist: JavaScript

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 1

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

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Computer Science II	03580300 (1 credit)	Algebra I, Computer Science I, or Fundamentals of Computer Science	None

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Computer Science III	03580350 (1 credit)	Computer Science II, AP Computer Science A	None

Level 4

Course Name	Service ID	PREREQUISITES	COREQUISITES
Practicum in Information Technology	13028000 (2 credits)	Two high school Information Technology courses	None
Mobile Application Development	03580390 (1 credit)	Algebra I	None

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING AND MATH CAREER CLUSTER, PLEASE CONTACT: CTE@tea.texas.gov or LISD CTE Director, Teri Hodges, HodgesTC@lisdeagles.net
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