

# 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.

### Keene High School Programming Courses

#### Level 2

- Computer Science I

#### Level 3

- Computer Science II

#### Level 4

- Computer Science III
- Practicum in Science, Technology, Engineering, and Mathematics (2 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
<ul style="list-style-type: none"><li>• Join TSA</li><li>• Participate in coding club at school</li></ul>	<ul style="list-style-type: none"><li>• Obtain an industry-based certification</li></ul>

### Industry-Based Certifications

- Apple App Development with Swift
- C++ Certified Associate Programmer
- Certified Entry-Level Python Programmer (PCEP)
- Certified Professional Programmer
- Certified User: Programmer
- CodeHS Python Level 1 Certification
- CompTIA Linux+
- Information Technology Specialist: Java
- Information Technology Specialist: JavaScript
- Microsoft Azure AI Fundamentals
- Microsoft Azure Data Fundamentals
- Oracle Certified Associate Java SE 8 Programmer
- Oracle Database SQL Certified Associate



### 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%

