CODING

# Information Technology

*Level Four*

*Level Three*

*Level Two*

*Level One*

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| **Industry Certifications options include:**  CompTIA IT Fundamentals  Microsoft Technology Associate Developer Certificate (MTA) |

**ABOUT THE PROGRAM OF STUDY**

The *Coding* program is study is designed for students interested in computer programming. Students will develop standard programming techniques and learn the logic tools and methods typically used by programmers to create simple computer applications. Proficient students will be able to solve problems by planning multistep procedures; write, analyze, review, and revise programs, converting detailed information from workflow charts and diagrams into coded instructions in a computer language; and will be able to troubleshoot/debug programs and software applications to correct malfunctions and ensure their proper execution. This program of study also challenges students to develop advanced skills in problem analysis, construction of algorithms, and computer implementation of algorithms as they work on programming projects of increased complexity. In so doing, they develop key skills of discernment and judgment as they must choose from among many languages, development environments, and strategies for the program life cycle. Course content is reinforced through numerous short- and long-term programming projects, accomplished both individually and in small groups. Upon completion of this POS, proficient students will be prepared to pursue industry certification at a technology college or more advanced coursework at a two-year or four-year postsecondary institution. The **Mobile App Development** course in the *Coding* program of study is a new option for level three. *Mobile App Development* is a course intended to teach students the basic concepts and skills of mobile app design. Upon completion of this course, proficient students will be demonstrate and understanding of mobile app development concepts.

This is not an exhaustive list of all of the opportunities available in Tennessee.

**CAREER OPPORTUNITIES**

The *Coding* occupations group provide the conceptual design that is the foundation for a computer program. There are two types of software developers—the type that develops applications to do specific tasks on a computer or other device and the type that develops systems that run devices or control networks. Computer programmers use program designs that are developed by engineers and software developers to write instructions for computers to follow. This is also referred to as coding. Computer Systems Analysts evaluate an organization’s computer systems and procedures and provide design solutions that will improve operations.

**Employment Projections for *Coding* careers in Tennessee**

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**POSTSECONDARY OPTIONS**

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| --- | --- |
| **School** | **Degree Program** |
| Nashville State Community College | Computer Programmer |
| Tennessee State University | Software Developer |
| Middle Tennessee State University | Computer and Information Systems Manager |

For more college and career planning resources, visit <http://collegefortn.org>.

****Have you registered for the Tennessee Promise? Seniors enrolled in this program have the chance to attend a two-year program at a Tennessee College of Applied Technology (TCAT), community college, or some two-year university programs for free! To learn more, please see your school counselor or visit <http://www.tennesseepromise.gov> .

***Coding* Related Occupations with the most Annual Average Openings in Tennessee (2014-2024)**

|  |  |  |  |
| --- | --- | --- | --- |
| Occupation | 2014 Estimated Employment | 2024 Projected Employment | Total Percent Change |
| Computer Programmers | 5,320 | 6,120 | 15.00% |
| Software Developers (Systems) | 2,610 | 3,320 | 28.00% |
| Computer and Information Systems Managers | 5,460 | 6,710 | 23.00% |

Tennessee Department of Labor and Workforce Development, Job4TN Online. (2017). *Occupational Projections (Long-term)*. Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occproj>

Students in this program of study will be eligible to join TSA. In addition to school events, students will be able to compete at the regional, state, and national level. The Technology Student Association fosters personal growth, leadership, and opportunities in Science, Technology, Engineering, and Mathematics (STEM); members apply and integrate these concepts through co-curricular activities, competitions, and related programs. See your technology teacher to learn more about TSA or visit <http://www.tsaweb.org>.

**For more information, contact:**

**High School Name**

**County Name**

**CTE Director: Name**

**Email**

**Instructor: Name**

**Email**