ENGINEERING

# STEM

*Level Four*

*Level One*

*Level Two*

*Level Three*

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| --- |
| **Industry Certifications options include:**Certified Solidworks Associate (CWSA) AcademicAutodesk inventor Certified User |

**ABOUT THE PROGRAM OF STUDY**

The *Engineering* program of study designed for students interested in the various disciplines of engineering and engineering technology. Course content is arranged around four sequenced, progressive courses that provide students with the opportunity to develop critical thinking skills and understanding of engineering concepts. Students then apply these skills in conjunction with the multi-step engineering design process to solve real-world problems. The capstone Engineering Practicum course places students with industry partners to complete a design project, report the results, and present their project before an audience. Students have the option to complete AP Physics as an alternative to the Engineering Practicum course. Upon completion of this POS, students will be prepared to pursue engineering studies at postsecondary institutions.

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

**CAREER OPPORTUNITIES**

As Tennessee strives to maintain and advance its economic stability and workforce, we must make it our goal to increase the number of students who come through and out of K–16 education prepared for these high-demand STEM-related careers. Unfortunately, students who choose to pursue these careers are often inadequately prepared to take on the challenges these positions demand. Secondary and postsecondary students are often lacking critical thinking, problem solving, and collaborative skills that are imperative for success. This too often affects their on the job performance. Students often struggle not only with academic knowledge when applying for a job, but they also face challenges involving real world applications like problem solving, conducting independent research, and proactively seeking solutions.

**Employment Projections for *STEM* careers in Tennessee**



**POSTSECONDARY OPTIONS**

|  |  |
| --- | --- |
| **School** | **Degree Program** |
| Roane State Community College | Geographic Information Systems Technologist  |
| Nashville State Community College | Electrical Engineering Technician |
| Tennessee Tech University | Civil Engineer |

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> .

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

|  |  |  |  |
| --- | --- | --- | --- |
| Occupation | 2014 Estimated Employment | 2024 Projected Employment | Total Percent Change |
| Software Developer Applications | 4,840 | 6,160 | 27.00% |
| Mechanical Engineer | 4,660 | 5,030 | 8.00% |
| Geospatial Information Scientists and Technologists | 2,130 | 2,160 | 2.00% |

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 SkillsUSA and TSA. SkillsUSA improves the quality of America’s skilled workforce through a structured program of citizenship, leadership, employability, technical and professional skills training. Visit <http://www.skillsusa.org>. 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.

**For more information, contact:**

**High School Name**

**County Name**

**CTE Director: Name**

**Email**

**Instructor: Name**

**Email**