ADVANCED STEM APPLICATIONS

# STEM

*Level Four*

*Level One*

*Level Two*

*Level Three*

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

**ABOUT THE PROGRAM OF STUDY**

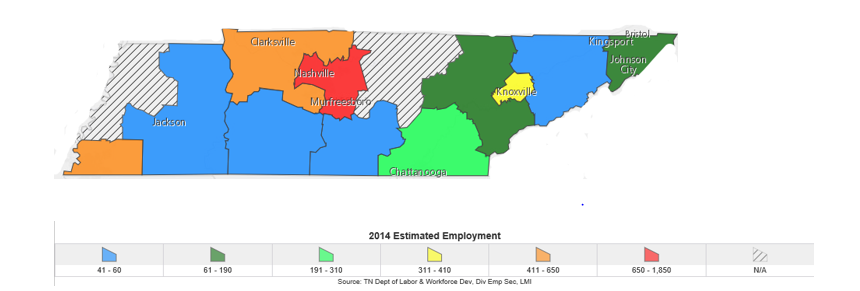
The *Advanced STEM Applications* program of study designed for students interested in the exciting careers available in the high-demand fields of science, technology, engineering, and mathematics. This program of study is uniquely structured to offer students an overview of STEM fields, occupations, and applications in the first year, followed by more specialized study of the scientific inquiry or engineering design process in subsequent years, culminating in a portfolio and internship experience. Upon completion of these POS, students will be prepared to pursue engineering studies or an advanced study in the STEM field of their choice at a variety of 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.

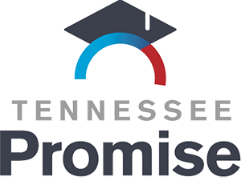
**Employment Projections for *STEM* careers in Tennessee**



**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**