

# Science, Technology, Engineering, and Mathematics (STEM) Career Cluster/Pathways

If you're eager to be at the vanguard of 21<sup>st</sup>-century technology innovation and problem-solving, you will find plenty to keep you captivated in the Science, Technology, Engineering, and Mathematics (STEM) Career Cluster.

This career cluster is organized into two career pathways:

- Engineering and technology
- Science and math

## Careers

Students in STEM classes learn and practice skills that prepare them for diverse post-high school education and training opportunities, from apprenticeships and two-year college programs to four-year college and graduate programs.

CTE classes in this cluster will introduce you to a variety of interesting careers including:

- Biologist or microbiologist
- Chemist
- Biochemist or biophysicist
- Mathematician
- Statistician
- Engineer: Aerospace, industrial, biotechnology, chemical, marine, materials, civil, petroleum
- Engineering manager
- Atmospheric or space scientist
- Geoscientist or materials scientist
- Surveying and mapping technician
- Hydrologist
- Architect
- Naval architect
- Architectural or civil drafter
- Materials lab and supply technician
- Quality technician
- Nuclear equipment operation or monitoring technicians
- Technical writer
- Post-secondary education vocational teacher

*Note: Each school and school district has different CTE options. Not every district has classes in every cluster, nor does every district offer CTE dual credit and Advanced Placement options.*

## Career and Technical Student Organizations

Career and technical student organizations provide opportunities for hands-on learning, and for applying career, leadership, and personal skills in real-world environments. Participants build their skills by developing projects, attending events, and competing regionally and nationally. The student organizations for science, technology, engineering, and math are:

- [Washington Technology Student Association](#)



## Education After High School

It is fact that young people who have at least one year of post-high school education earn thousands of dollars more a year. So, if you spend even one year at a two- or four-year college, in a certificate program at a technical school, or in an apprenticeship after you graduate from high school, you will very likely earn higher wages all your life. By furthering your education, you will be better prepared to successfully navigate the world of work.

After taking CTE classes in science, technology, engineering and math, you could pursue any number of opportunities including:

- A two-year college degree in pre-engineering, integrated mathematics, integrated technology or integrated science
- A four-year college degree in engineering, microbiology, biotechnology, bio-engineering, applied technology, architecture, civil engineering, applied mathematics or other integrated subjects

## Student Resources

### Middle and High School

For information about your district's CTE offerings and how to move forward with planning for your future, contact or visit:

- [Preparing for your future: Why CTE?](#)
- Your school career or guidance counselor
- Your principal or school district Career and Technical Education office
- [Career and Technical Education](#) - Washington  
(360) 725-6245

### Apprenticeship and College

More than 1,000 jobs in Washington are connected to an active, registered apprenticeship program. For more information about apprenticeships and colleges, visit:

- [How to become an apprentice: Five steps to getting started](#)
- [Washington State Board for Community and Technical Colleges](#)
- [Checkoutcollege.com](#)
- [Washington Career Bridge](#)
- [University of Washington College of Engineering](#)
- [Washington State University College of Engineering and Architecture](#)
- [Central Washington University Teach STEM program](#)

## Additional Resources

- [U.S. Department of Energy: Science and Technology](#) - Oversees and is the principal federal funding agency of the nation's research programs in high-energy physics, nuclear physics and fusion energy sciences
- [Washington STEM](#) - Here in Washington, our education, business, political leaders, and communities have come together to make STEM education a priority.
- [Washington Technology Industry Association](#)
- [AIA Northwest Washington](#) - Our chapter of the American Institute of Architects
- [The Society for Integrative and Comparative Biology](#)
- [Mathematical Association of America](#)
- [American Statistical Association](#)
- [University of Washington Mathematics Department Outreach and Resources for K-12 Teachers and Students](#)
- [Association for Women in Mathematics](#) - Encourages women and girls to study and have active careers in the mathematical sciences
- [American Academy for Forensic Scientists](#) - Careers combining science and service in the interests of society, justice and public safety
- [Car Body Design](#) - Automotive engineering website

## For Educators

- [Forms and Standards](#)
- [Comprehensive CIP Code Chart](#)

## CIP Codes

Classification of Instructional Programs (CIP) Codes assist in tracking, assessment, and reporting CTE courses.

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|----------|----------|
| • 030198 | • 150201 |
| • 140102 | • 150406 |
| • 141001 | • 150801 |
| • 141801 | • 151201 |
| • 148888 | • 151301 |
| • 149991 | • 151302 |
| • 149992 | • 158888 |
| • 149993 | • 210198 |
| • 149994 | • 218888 |
| • 149995 | • 270301 |
| • 149996 | • 279991 |
| • 149997 | • 400891 |
| • 149998 | • 401099 |

