

# Manufacturing

## Career Cluster/Pathways

Are you interested in how products and machines come together? Do you care about the quality of materials and of workmanship? Then you should explore the Manufacturing career cluster, which covers how industry and technology work together to make or package the things that we use or consume every day like cars, computers and food.

Careers in advanced manufacturing offer exciting opportunities in designing and improving products, operating high-tech tools and machinery, analyzing problems and coming up with creative solutions, and working with both your hands and your mind.

This career cluster is organized into eight career pathways:

### Careers

Students in manufacturing 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:

- Production
- Manufacturing production process development
- Maintenance
- Installation and repair
- Quality assurance
- Logistics and inventory control
- Health
- Safety and environmental assurance
  - Engineer in design, industrial, aerospace, quality, logistical, safety or manufacturing
  - Medical appliance manufacturer
  - Microchip manufacturer
  - Precision inspector, tester or grader
  - Technician in automated manufacturing, laser, biomedical equipment, lab, quality control, safety coordination
  - Inspector
  - Machine operator
  - Communication system, computer or meter installer or repairer
  - Industrial truck and tractor operator



*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 are much more than clubs. They 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 organization for manufacturing is [SkillsUSA](#).

## 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 manufacturing, you could pursue any number of opportunities including:

## 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

### 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:

- [Checkoutcollege.com](#)
- [College Navigator](#)
- [Washington Student Achievement Council](#)
- [How to become an apprentice: Five steps to getting started](#)
- [U.S. Department of Education](#)
- [Washington Career Bridge](#)

- [Washington State Board for Community and Technical Colleges](#)
- [WSU Virtual Reality and Computer Integrated Manufacturing Laboratory](#)
  - Explore the possibilities of manufacturing design. Performs fundamental and applied research in computer-aided design (CAD), virtual reality, knowledge representations, and sustainability in product lifecycles.

## Additional Resources

- [National Association of Manufacturers](#)
- [Washington Manufacturing Services](#) - Learn about innovative approaches to manufacturing and connections with business
- [Northwest Food Processors Association](#)
- [Electronics Technician Association](#) - Represents the electronics industry, from the technician to the educator to the corporate institution. Offers electronics certification programs accredited by the International Certification Accreditation Council (ICAC).
- [Workplace Safety and Health](#) - Washington State Department of Labor and Industries

## 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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|----------|----------|
| • 144201 | • 480511 |
| • 150405 | • 480701 |
| • 150505 | • 480703 |
| • 150613 | • 488888 |
| • 151202 |          |
| • 151305 |          |
| • 151306 |          |
| • 460290 |          |
| • 470000 |          |
| • 470100 |          |
| • 470101 |          |
| • 470197 |          |
| • 470495 |          |
| • 480000 |          |
| • 480503 |          |
| • 480508 |          |