



Career Cluster: Science, Technology, Engineering & Math **Career Cluster Pathway:** Pre-Engineering
Program of Study: An Educational Planning Guide for High School and Beyond

| | Grade | English | Math | Science | Social Studies | Fitness/Health and Visual or Performing Arts | Recommended Career and Technical Education (CTE) Courses and Other Electives | Graduation Requirements | SAMPLE Occupations Related to this Pathway |
|--------------------------|-----------|-----------------------|---------------------|--------------------|--------------------------|--|---|---|---|
| Secondary Options | 9 | English 9 (1 credit) | Algebra (1 credit) | Science (1 credit) | | Health/Fitness (1 credit) Fine Art (1 credit) | Elective class (1 credit) | <u>H.S. Credit Requirements (24 credits total):</u> 4.0 credits – English 3.0 credits – Social Studies 3.0 credits – Math 2.0 credits – Science 2.0 credits – Health and Fitness 1.0 credits – Visual or Performing Arts 1.0 credits – Occupational Education 8 credits – Occupational Education or Electives <u>Additional Skills Center opportunities:</u> <ul style="list-style-type: none"> Possible college articulated credits each year at the Skills Center Pre-apprenticeship agreements for priority placement Possible Industry Certificate at end of course | Occupations requiring less than a Baccalaureate Degree <ul style="list-style-type: none"> ▶ Entry Level Drafter Mechanical Architectural ▶ Entry Level CAD operator Mechanical Architectural ▶ Designer Mechanical Architectural ▶ Entry Level CNC Programmer ▶ Entry Level CNC Operator ▶ Engineering Technician Mechanical Manufacturing Architectural Robotics Civil Occupations requiring a Baccalaureate Degree <ul style="list-style-type: none"> ▶ Engineer Mechanical Manufacturing Electrical Robotics Civil ▶ Architect |
| | 10 | English 10 (1 credit) | Geometry (1 credit) | Science (1 credit) | World Studies (1 credit) | Fitness (1 credit) | Elective class (1 credit) | | |
| | 11 | English 11 (1 credit) | | | US History (1 credit) | | <ul style="list-style-type: none"> Pre-Engineering 1 (3 credits) * possible 6 college credits w/ "B" grade or higher | | |
| | 12 | English 12 (1 credit) | | | CWI (1 credit) | | <ul style="list-style-type: none"> Pre-Engineering 2 (3 credits) * possible 10 college credits w/ "B" grade or higher | | |

Courses shown in **RED** indicate courses articulated with local colleges. College credit can be earned through those courses.

13 and Beyond

Program Options

Complete a registered apprenticeship and/or enter directly into the workforce

Possible apprenticeship options w/ priority entrance for Skills Center program completers:

- N one at this time

To learn more about apprenticeships, visit Labor and Industries website at www.lni.wa.gov

Earn a Technical Certificate from a community or technical college and enter the workforce

- Clark College: Vancouver, Washington
- Computer Aided Design and Drafting Technology Certificate Program
- Portland Community College, Portland Oregon
- Two Year Certificate Mechanical Engineering Technology
 - Certificate in Drafting Technology and Design
- Mt. Hood Community College: Gresham, Oregon
- Architectural Engineering Technology Degree (One-year Certificate)
 - Mechanical Engineering Technology Degree (One-year Certificate)
- Lower Columbia College: Longview, Washington
- Computer Aided Design Certificate
 - Manufacturing Occupations Certificate
 - Process Manufacturing Certificate
 - Fundamentals of Manufacturing Certificate
 - Computer Numerical Control Certificate
 - Machinist Certificate

Earn an Associate's Degree from a community or technical college and enter the workforce

- Clark College Vancouver, Washington
- Associate in Science Transfer Degree
- Portland Community College, Portland Oregon
- Associate of Applied Science in Machine Manufacturing Technology
 - Associate of Applied Science in Automated Manufacturing
 - Associate of Applied Science Degree in Interior Design
 - Associate of Applied Science Degree in Architectural Design and Drafting
 - Associate of Applied Science Degree in Mechanical Engineering Technology
 - Associate of Applied Science Degree in Civil Engineering Technology
 - General Engineering University Transfer Programs
- Mt. Hood Community College: Gresham, Oregon
- Architectural Engineering Technology Degree Associate of Applied Science Degree Program
 - Civil Engineering Technology Degree Associate of Applied Science Degree Program
 - Civil Engineering Technology-Environmental Associate of Applied Science Degree Program
 - Mechanical Engineering Technology Degree Associate of Applied Science Degree Program.
 - Engineering Associate of Science Transfer Programs
 - Integrated Metals: Machine Tool Technology Associate of Applied Science Degree Program
 1. CNC
 2. CAD/CAM

Earn a Baccalaureate Degree and enter the workforce

- Central Washington University Ellensburg
- Engineering Technology
 - Construction Management
 - Mechanical Engineering Technology
 - Electronics Engineering Technology
 - Industrial Education
 - Industrial Technology
 - Safety and Health Management
- Eastern Washington University Cheney, Spokane
- Applied Technology
 - Computer Engineering
 - Design Technology
 - Electrical Engineering
 - Engineering Tech & Multimedia Design
 - Graphic Design
 - Hardware Engineering Technology
 - Manufacturing Technology
 - Mechanical Engineering Technology
- Washington State University- Vancouver Pullman
- Bioengineering
 - Civil Engineering
 - Environmental Engineering
 - Materials Science Engineering
 - Electrical Engineering
 - Computer Science Engineering
 - Computer Engineering
 - Architecture
 - Construction Management
 - Chemical Engineering
 - Mechanical Engineering
 - Structural Engineering
 - Water Resource Engineering

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| | | | | <p><u>Lower Columbia College Longview, Washington</u></p> <ul style="list-style-type: none"> • Engineering Associate of Science Transfer Programs • Associate in Applied Science in Machine Trades; CNC Operation, CNC Setup, CNC Programming, Computer Integrated Manufacturing • Mechanical, Civil, Aeronautical, Industrial Materials Science Pre-Engineering Degree, Associate in Sciences Transfer Programs • Advanced Manufacturing Technology Associate of Applied Science Degree | <p><u>Western Washington University Bellingham</u></p> <ul style="list-style-type: none"> • Electronics Engineering Technology • Manufacturing Engineering Technology • Plastics Engineering Technology • Industrial Design • Technology Education <p><u>University of Washington Seattle</u></p> <ul style="list-style-type: none"> • Aeronautics & Astronautics • Bioengineering • Chemical Engineering • Civil & Environmental Engineering • Computer Science Engineering • Electrical Engineering • Human Centered Design & Engineering • Industrial & Systems Engineering • Materials Science & Engineering • Mechanical Engineering |
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