



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

				<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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