BUILDING & MOVING

CAREER CLUSTERS

Advanced Manufacturing
The Future of Engineering and Producing

Construction
Building Futures and Pioneering Sustainable Horizons

Supply Chain & Transportation
Driving Efficiency and Streamlining Tomorrow's Transport

Building & Moving: Creating the Structures and Systems That Keep the World Running

The **Building & Moving** Career Cluster Group brings together the industries that design, construct, operate, and maintain the physical world around us—from buildings and infrastructure to the transportation systems that move people and goods. It includes fields such as **Advanced Manufacturing**, **Construction**, **Education** (as it relates to training the workforce), and **Supply Chain & Transportation**, all working together to build safe, sustainable environments and ensure materials and services flow efficiently. These careers shape communities, support economic growth, and keep society moving forward through innovation, skilled craftsmanship, and essential planning.

Start Your Pathway with 2 or more credits of Pathway courses

9th Grade Explore & Launch

- Intro to Engineering
- Shop Skills

ENGINEERING & DESIGN PATHWAY (10-12)

- Engineering Design 1
- Engineering Design 2 (CAD/CAM)
- Engineering Design 3
- Robotics
- Electronics Engineering Technology*
- Advanced Manufacturing*

SKILLED TRADES PATHWAY (10-12)

- Woodworking 1
- Woodworking 2
- Mech Tech 1
- Mech Tech 2
- Advanced Manufacturing*
- Aerospace Manufacturing*
- Auto Body & Collision Repair*
- Automotive Technology*
- Construction Trades*
- Diesel Power Technology*
- Maritime Vessel Operations*
- Welding & Metal Fabrication*
- Electronics Engineering Technology*
- RAP Construction**

*Courses offered at Sno-Isle
**Offered through the RAP program

Then, After You Have Finished High School...

Apply college credits earned in this pathway directly into these partner college programs:

Everett Community College

- Engineering
- Advanced Manufacturing
- Welding

Continue your training in an Apprenticeship Program:

- Carpenters
- Electricians
- Plumbers
- Iron Workers
- Mechanic

Continue your training in another college program such as:

- Everett Community College
- Edmonds Community College
- Skagit Valley School
- Bellingham Technical College
- Lake Washington Institute of Technology
- Central Washington University
- Eastern Washington University
- University of Washington
- Western Washington University
- Washington State University

Finally, Begin Your Career!

Jobs you can get after graduation with this High School training:

- Aircraft Assemblers
- Machinists
- Construction Laborer
- Construction Apprentice
- Welder
- CNC Operator
- Driver

Jobs you can get with 2-Years Post-High School Training:

- Aircraft Mechanics and Service Technicians
- Avionics Technicians
- Engineering Technicians
- Mechatronics Technician
- Equipment Operator
- CNC Programmer
- Carpenter
- Electrician
- Technician
- Mechanic

Jobs you can get with 4 or more Years Post-High School Training:

- Construction Manager
- Engineer
- Industrial Designer
- Project Manager
- Technician
- Architect
- CTE Teacher

INTRODUCTION TO ENGINEERING

Course Code: *CTT200* ***Grade Levels:*** *9*
Length: *1 Semester* ***Credits:*** *0.5 CTE*
Prerequisite: *None*

Introduction to Engineering is a hands-on, project-based course where 9th-grade students explore the world of design and innovation through drafting, CAD modeling, 3D printing, laser cutting, and real-world building challenges. Students will learn how engineers turn ideas into functional prototypes while developing creativity, problem-solving, and teamwork skills. No experience required—just curiosity and a desire to design and build exciting projects.

SHOP SKILLS

Course Code: *CTT100* ***Grade Levels:*** *9*
Length: *1 Semester* ***Credits:*** *0.5 CTE*
Prerequisite: *None*

In Shop Skills, freshmen will develop a solid foundation in craftsmanship through a hands-on, safety-first approach to woodworking and construction. Throughout this one-semester course, students will gain confidence using a variety of basic hand tools alongside essential power tools. Beyond tool operation, the curriculum emphasizes practical site skills that are utilized across the skilled trades.

ENGINEERING DESIGN I

Course Code: *CTT201/202* ***Grade Levels:*** *10, 11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE or Fine Arts*
Prerequisite: *None*
College Credit Available: *4 Credits at EVCC through CTE Dual Credit*

Students learn and use the Engineering Design Cycle, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software. Students will:

- Learn to use 2D & 3D CAD software
- Design and Produce parts using a 3D Printer
- Utilize a laser cutter to create projects
- Develop basic electronics skills
- Create structural engineering plans
- Produce a variety of 3D engineering graphics

ENGINEERING DESIGN II (CAD/CAM)

Course Code: *CTT221/222* ***Grade Levels:*** *10, 11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE or Fine Arts*
Prerequisite: *Engineering Design I*
College Credit Available: *4 Credits at EVCC through CTE Dual Credit*

Students will learn how to use 3D Solid Modeling Software (Onshape) to design and produce products using CNC routers and metal mills. This is an essential course for anyone entering the engineering, manufacturing, aerospace, or machinist fields. Students will:

- Develop the skills necessary to achieve certification using Onshape.
- Program machining toolpaths and operate CNC mills & routers.
- Design parts and produce projects utilizing a variety of manufacturing techniques
- Onshape certification available.

ENGINEERING DESIGN III

Course Code: *CTT231/232* ***Grade Levels:*** *11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE or Fine Arts*
Prerequisite: *Engineering Design II or CAD/CAM*

This capstone course allows students to design a solution to a technical problem of their choosing. In this course students will research, design, test, and construct a solution to an open-ended engineering problem. Students are able to apply all the skills and knowledge learned in previous courses. The use of 3D design software helps students design solutions to the problems.

ROBOTICS

Course Code: *CTT241/242* ***Grade Levels:*** *10, 11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE or Science*
Prerequisite: *None*

A course that exposes individuals to the use of basic engineering principles and technical skills in developing and using robotics. Includes instruction in the principles of robotics, design and operational testing, system maintenance and repair procedures, robotics, computer systems, control language, and safety.

WOODWORKING I

Course Code: *CTT101/102* ***Grade Levels:*** *10, 11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE*
Prerequisite: *None*

Emphasis of this class is the use, care, and operation of hand tools, portable power tools, and stationary machines. To work with these tools or machines the student will have to pass the terminology and usage test with an 80% or higher score and a 100% score on safety rules and operations.

WOODWORKING II

Course Code: *CTT121/122* ***Grade Levels:*** *10, 11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE*
Prerequisite: *Woodworking I*

Requirements: Students will pass a safety exam; 80% on terminology and usage and 100% on safety. Students will learn about different types of machine operation, laying out of projects, calculating of board footage, face frame construction, joinery, gluing and clamping, wood identification, door and drawer construction, staining and finishing. Students will begin to develop skills for the construction and manufacturing industries. Students interested in cabinetry or furniture making skills and projects may retake this course to develop advanced skills.

Mech Tech I

Course Code: *CTA251/252* ***Grade Levels:*** *11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE*
Prerequisite: *None*

This class is an introduction to mechanical technology applications. Through a hands-on STEM integrated approach students will:

- Explore and apply techniques in arc welding
- Develop skills in oxy-fuel and gas welding
- Repair and rebuild small gas engines
- Learn how to complete residential electrical wiring
- Be introduced to GTAW (TIG) and GMAW (MIG) welding
- Learn about basic construction techniques

Mech Tech II

Course Code: *CTA351/352* ***Grade Levels:*** *11, 12*
Length: *1 Year* ***Credits:*** *1.0 CTE or Science*
Prerequisite: *Mech Tech I*

A year-long advanced course in mechanical technology in agriculture applications. Through a hands-on STEM integrated approach students will:

- Explore career opportunities, surveying agricultural structures, and electric motors
- Develop advanced skills and techniques in Arc Welding
- Develop advanced skills in oxy-fuel gas welding
- Explore basic machining and sheet metal skills
- Learn GMAW (MIG) welding techniques
- Learn GTAW (TIG) welding techniques
- Utilized project planning and design skills
- Complete a required semester long project for home and/or community

WORKSITE LEARNING

Course Code: *CTE421/422* ***Grade Levels:*** *11, 12*
Length: *1 Year* ***Credits:*** *1-2 Credits*
Requirements:

1. Currently enrolled in or have successfully completed a CTE class related to the student's career pathway and worksite.
2. Age 16 before enrolling
3. Must provide own transportation to/from/during the Worksite Learning experience

Course Description: This course allows students to apply their skills in the workplace. Students may earn 1 credit for working 360 hours (approximately 11 hours per week). Students will:

- Apply skills and concepts learned in Career and Technical Education courses in a real-life work setting.
- Gain occupational and employability skills while applying and advancing your knowledge in academic and technical areas.
- Gain exposure and experience while obtaining instructional training in a specific career pathway of your own choosing.
- Be responsible for obtaining their own worksites.