

# Industrial and Engineering Systems

“The Industrial and Engineering Systems Career Learning Area relates to the technologies used to design, develop, install, operate, maintain and upgrade physical systems. These include:

- engineering and related design technologies
- mechanical systems
- manufacturing technologies
- precision production
- construction
- electrical systems electronics and information technologies

## top 10 Careers

Construction Manager  
Software developer  
Cost Estimator  
Computer Systems Analyst  
Glazier (*cut and install glasswork on buildings*)  
Web Developer  
Electrician  
Civil Engineer  
Structural Iron and Steelworker  
Mechanical Engineer

People in this field use academic and technical knowledge and skills to design, build, inspect, deliver, maintain, and repair aircraft, automobiles, buildings, computer equipment, roads, bridges and manufacturing machinery.”

—Oregon Department of Education

### Career Clusters 2x2

Here are two career clusters for you to check out with two corresponding career options to give you some ideas. For more information on career clusters visit: [www.ode.state.or.us/go/skillsets](http://www.ode.state.or.us/go/skillsets)



### Automotive and Heavy Equipment Technology

- Automotive Service Technology
- Collision Repair

### Manufacturing

- Mechanical CAD/Drafting
- Welding

### Related Coursework

- Architectural and Interior Design
- Architectural Drafting
- Automotive Technology
- Computer Keyboarding/Applications
- Computer Science/Programming
- Digital Electronics/Electronic Technology
- Drafting Technology/Computer Graphics
- Engineering Design/  
Principles of Engineering



# Engineering stimulates the mind.

—Bruce Dickinson, Lead Vocalist, Iron Maiden

- Machine Welding
- Robotics
- Web Design
- Wood Technology

## Focused Programs of Study

Choosing a focused program of study is an important way to help clarify your goals, provide you with a relevant selection of elective courses, and prepare you to succeed in post-secondary education and/or careers. By selecting a focused program, you strengthen the opportunity to gain the qualities and skills that are vital for employment and productivity in business, industry and the community.

These focus programs are related to the Industrial and Engineering Systems career area:



Century High School

- Architectural and Engineering Drafting
- Informational Technology

Glencoe High School

- Engineering
- Manufacturing and Design Technologies

Hillsboro High School

- Architectural and Interior Design
- Automotive Service Technology
- Electronics/Robotics
- Industrial Design/Drafting

Liberty High School

- Engineering

## Community Service Opportunities

Here are five ideas for you to look into in the local area (in Hillsboro, unless otherwise stated):

- OMSI, Portland
- Habitat for Humanity (various locations)
- Architecture, Construction and Engineering (ACE) Program, Portland



- Computer Assistant, Hillsboro Public Library
- Adopt-a-Road Program, Washington County

## Dual Credit Opportunities

The following courses enable you to earn credits in high school college. College credits are available through Portland Community College, unless otherwise indicated.

Century High School

- Basic Business and Computer Applications
- Drafting 1 and 2
- Web Design

Glencoe High School

- Architectural Drafting 2
- Computer Applications/Computer Keyboarding
- Advanced Computer Applications
- Drafting Technology 1 and 2
- Machine Welding Technology 2

Hillsboro High School

- Architectural and Interior Design 1-4
- Automotive Technology 1-5
- Drafting and Computer Graphics 1-5
- Electronic Technology 1-3
- Principles of Engineering
- Robotics 1 and 2

Liberty High School

- Basic Business and Computer Applications
- AP Physics

