



# Engineering & Architecture

## For Students Interested In ...

Learning about engineering and high tech careers and developing skills in problem solving, research, and design.

Learning about aerodynamics, flight systems, astronautics, space life sciences, aerospace materials, and systems engineering.

## Our Classes



[www.tvrop.org](http://www.tvrop.org)

## Computer Integrated Manufacturing

Students will be learning about the history of manufacturing, robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems. This course is a specialized-level course designed to follow the Project Lead the Way Engineering foundation courses.

**Course Length:**

1 Year / 1 Period

**High School Credits:** 10

## Honors Aerospace Engineering

Honors Aerospace Engineering is a high school-level course intended to propel students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing an airfoil, propulsion system, and rockets. They learn basic orbital mechanics using industry-standard software. They also explore robot systems through projects such as remotely operated vehicles.

**Course Length:**

1 Year/1 Period

**High School Credits:** 10

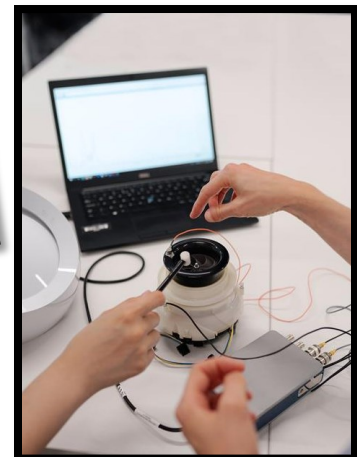
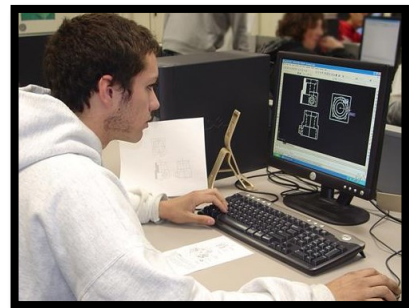
## Honors Civil Engineering & Architecture

Students will learn about various aspects of civil engineering and architecture and apply their knowledge to the design and development of residential and commercial properties and structures. In addition, students use 3D design software to design and document solutions for major course projects. This course is a specialization-level course designed to follow the Project Lead the Way Engineering foundation courses.

**Course Length:**

1 Year/1 Period

**High School Credits:** 10



# Engineering & Architecture



Computer Integrated  
Manufacturing



Honors Aerospace  
Engineering



Honors Civil  
Engineering &  
Architecture



**Tri-Valley Regional Occupational Program**

*“Careers by Choice, Not by Chance”*



# Engineering & Architecture

## For Students Interested In ...

Studying the design and construction of residential and commercial building projects and learning about careers in the industry.

Learning about electrical engineering, electronics, combinational and sequential logic, and circuit design.

## Our Classes



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## Honors Digital Electronics

The Honors Digital Electronics course is the foundation of all modern electronic devices such as mobile phones, MP3 players, laptop computers, digital cameras, and high definition televisions. Students are introduced to the process of combinational and sequential logic design, engineering standards and technical documentation

**Course Length:**  
1 Year/1 Period  
**High School Credits:** 10

## Honors Principles of Engineering

This second-year foundation course of engineering exposes students to some of the major concepts they will encounter in a post-secondary engineering course of study. They'll design, test and construct device-think machines and robotics. Topics include mechanisms, energy, statics, materials, and kinematics. Throughout Honors POE, students apply the design process, acquire strong teamwork and communication proficiency and develop organizational, critical-thinking and problem-solving skills.

**Course Length:**  
1 Year/1 Period  
**High School Credits:** 10



# Engineering & Architecture



Honors Digital  
Electronics



Honors Principles  
of Engineering



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