

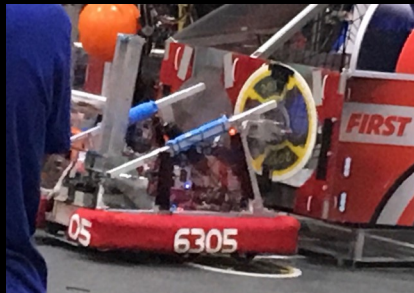
Supporting Programs

Robotics— The school's robotics team, Stable Circuits Robotics FRC Team #6305 is a natural extension of the PID pathway. Hands-on experience in modeling all the way through the production of the product allows students to see first hand how their designs work.

Society of Women Engineers (SWENext) - is a club that meets at lunch to learn about careers and college opportunities in the STEM fields, specifically engineering.



ROBOTICS COMPETITION



The Stable Circuits 2019 robot.



Tesla Factory Tour

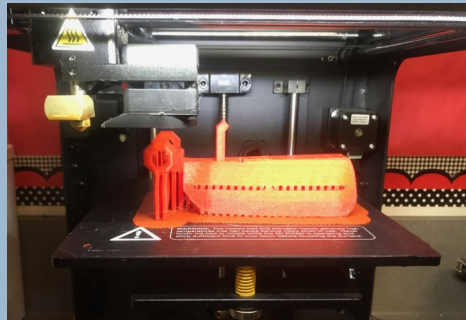
Industry Partnerships

ADCO Manufacturing
Anlin Windows and Doors
Betts Manufacturing
Bitwise Industries
Clovis Community College
Clovis Unified School District
Fresno County Superintendent of Schools
Fresno State, Lyles College of Engineering
Lyons Magnus
Scelzi Enterprises

Lead Teacher—Steve Elsberry
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559-327-5186

CTE Learning Director—Katie Scalzo
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559-327-5152

CTE Counselor - Jay Center, Ed.D.
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Clovis North High School
2770 E. International Ave
Fresno, CA 93730

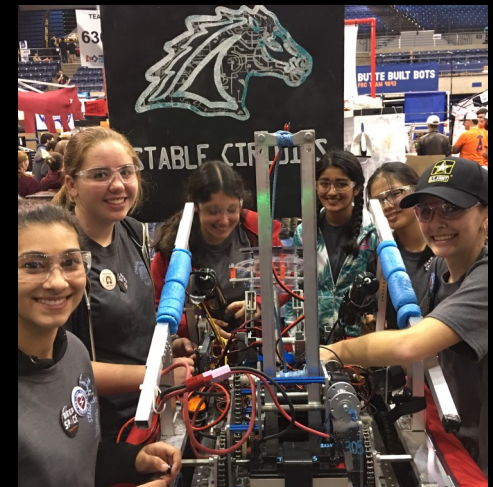
Phone: 559-327-5000
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Career Technical Education

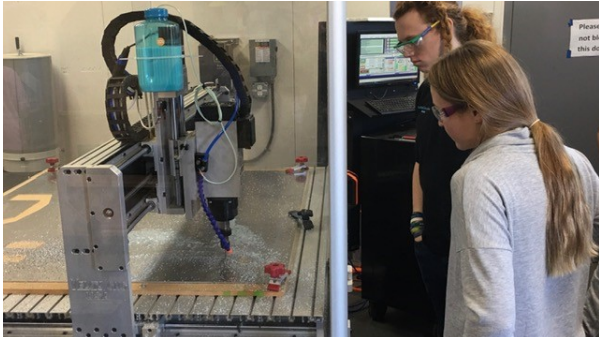
Manufacturing and Product Development

Product Innovation and Design Pathway



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Tel: 559-327-5000

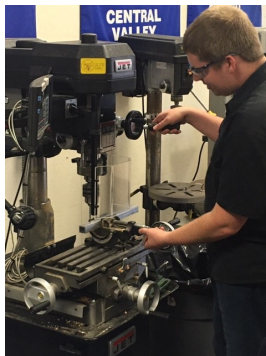


Career Options

The Product Innovation and Design pathway provides students with an understanding of the design and manufacturing technologies common to careers in the fields of product design and manufacturing. Representative topics include the product design and development process, the principles of design, computer-aided design, fabrication and manufacturing processes, sustainability, and the principles of business, entrepreneurship, and global design. Students can also learn computer-aided manufacturing.

Sample occupations associated with this pathway:

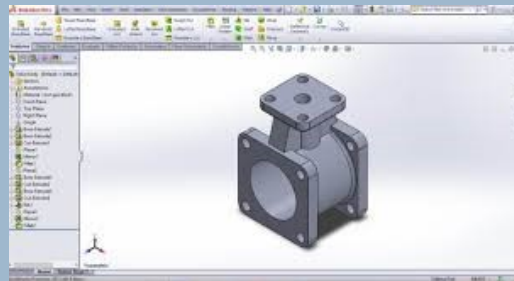
- **Commercial/Industrial**
- **Designer**
- **CAD Designer**
- **Model Maker**
- **Product Developer**
- **Product Manager**



2020-2021 Courses

Computer-Aided Design and Engineering (Concentrator course, Grades 9-11)

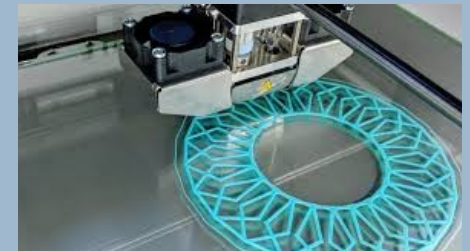
Computer Aided Design and Engineering is a year-long course using 3D modeling software that takes students through hands-on projects to create a work product ready to be manufactured or engineered. Students learn the functions of the Solid-Works software program to render 3D models of components to be manufactured. Students then take their renderings and create the actual products using the Velox CNC Router, lathes, 3D printers and other manufacturing tools.



Manufacturing and Product Design (Capstone course, Grade 12)

This course teaches safe use of machinery, machining processes, essential elements of mechanical systems, mechanical drives (gears, belts and pulleys, clutches), mechanical hardware, bushings, bearings, lubrication systems, basic properties of materials, hydraulics and pneumatics, preventative maintenance, basic hand and power tools, and basic precision dimensional measurement. Additionally, this hands-on, project-based, class teaches the fundamentals of the engineering design process and the product development cycle. Students design, create and develop new products in the classroom, and use shop tools and equipment to build prototypes of their designs. They also develop and refine their job and problem-solving skills by understanding engineering terminology / concepts, and by working in small teams to build and pre-sent complex engineering projects to industry partners.

This course is a 2 period ROP block and requires students to complete a school provided internship for the second semester. PE is waived if enrolled in this course.



This unique pathway affords students the opportunity to create a product and follow it from the design phase all the way through the manufacturing and production phase.