Engineering and Architecture - Engineering Design

CHICO HIGH SCHOOL

CTE Course Sequence

Course Descriptions

**Engineering Design CAD 1**  
*"A-G Credit*  
*"Optional Butte College Credit DFT-12*

The course explores real world strategies which reflect the current engineering field requiring the student to use their imagination, solve problems, and organize their thought patterns by navigating the design process. The project based curriculum supplants the hands-on textbook with hands-on activities. Cross-curriculum concepts include math, science, and English. Students will learn Computer Aided Design (CAD) software and 3D printing to create a variety of 2 dimensional and 3 dimensional projects according to current industry standards. Students will enjoy designing and creating a mechanical device, a movie/game prop, jewelry, wearable tech, a miniature golf course, a new invention, and more.

**Engineering Design CAD II**  
*"Optional Butte College Credit DFT-2*

Students will explore a broad range of engineering topics, including mechanisms, materials, structures, automation, and motion. Students work like an engineer to apply an engineering design process to solve challenging problems, document solutions, and communicate work. The transportable skills in this course (communication, collaboration, and process thinking) can be applied to other courses and a future career! Students are prepared for employment in fields related to and including engineering, automotive, electronics, robotics, manufacturing, mechatronics, and entrepreneurship. Engineering 1 is a prerequisite.

**Engineering Design CAD III**  
*"Optional Industry Certificate*

Students may test for Industry Certifications at Butte College. In this course students will use state-of-the-art technology, industry-standard software and equipment. All projects will either be certificate-based, client-based, or part of the engineering design internship program. CAD Software and Industry Equipment will be used to create project models. Engineering 1 or 2 is a prerequisite.

Other Opportunities:

**SkillsUSA**: A national Student Leadership Organization that offers opportunities to compete in regional, state & national events as well as developing leadership skills

**MESA**: Math Engineering Science Achievement is a national organization who’s goal is to promote opportunities for non-traditional and underserved population in STEM

**SWE**: The Society of Women Engineers - SWENext provides a variety of quality programs, resources, and access to engineers to empower students to prepare for engineering and technology careers

**Computer Science Club**: Group of student who meet to talk about current events in computer science, teach each other relevant skills and compete in competitions

**Panther Robotics**: Members compete in the VEX Robotics Competition (VRC) and the Remote Aerial Drone Competition (RAD) in a unique yearly challenge

**IT Council**: Student leadership opportunities within the various CHS IT pathways

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Local Post-Secondary Options

**Butte College**  
AS Degree in Engineering

**CSU, Chico**  
Civil Engineering  
Computer Animation/Design  
Computer Engineering  
Computer Info Systems  
Computer Science  
Construction Management  
Electrical Engineering  
Entrepreneurship  
Environmental Science  
Mechatronics/Manufacturing  
Media Arts Design Technology

HIGHLIGHTED CAREERS:

- 3D Animation
- Aerospace
- Automotive Custom Design
- Chemical Engineer
- Civil Engineer
- Computer Engineer
- Mechanical Engineer
- Electrical Engineer
- Entrepreneur
- Environmentalist
- Fabrication
- Manufacturing
- Product Designer

Note: these templates are designed to help guide students. The order of some classes may vary and individual variation can be applied.