CTE Engineering Pathway Course Sequence

Course Descriptions

**Engineering Design/CAD 1 (Concentrator)**
This year-long course focuses on the basic elements of Engineering Design, including graphic language, freehand sketching, lettering, and use of drafting equipment. Students also learn the geometry of technical drawing, and how to do single plane and orthographic drawing, as well as pictorial presentations, sectional views, and auxiliary drawings. Work in Computer-Aided Drafting (CAD) will include the Cartesian Coordinate System through 2D problems using AutoCAD software. Students can earn Butte College credit upon completing this course.

**Engineering Design/CAD 2 (Capstone)**
Year-long course for students who have successfully completed Engineering Design/CAD 1. Students will learn 3D Design Principles using various CAD systems. Units of study will include Cartesian Coordinates, Universal Coordinate System, planes/surfaces, wire-frames, surface models and solid models. Students will also create visual effects with various materials and lighting tools. Solid models will be dimensioned, scaled and displayed in proper template form. All work will be assembled into a student portfolio. Students can earn Butte College credit upon completing this course.

**Engineering Design/CAD 3 & 4 (Advanced)**
Year-long course for students who have successfully completed Engineering Design 1 & 2. Hands-on learning in Engineering applications related to parametric modeling, materials, and material properties. Engineering models, assemblies and sub-assemblies will be constructed and animated. A series of projects and reverse Engineering assignments will be used to develop modeling skills and create portfolios.

LOCAL POST-SECONDARY OPTIONS:

**Butte College**
AS Degree in Engineering
AS in Drafting & CAD Tech.
Certificate in Drafting & CAD
Certificate in Architectural Drafting and Modeling

**CSU. Chico**
Civil Engineering
Construction Management
Concrete Industry Management
Electrical Engineering
Mechanical Engineering

HIGH-WAGE CAREERS:
* Civil Engineer
* Mechanical Engineer
* Design Architect
* Electrical Engineer
* Product Engineer

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Career and Technical Student Organization: