Principles of Applied Engineering Syllabus

Course Description/Goals:

Students in this course will develop engineering skills using computer graphics, hand-sketching, 3D modeling, design and presentations. Teams will design solutions to problems using innovative thinking and creativity, including the 3D puzzle cube, foot orthosis, and therapeutic toy. Coursework will include employability skills like time management, collaboration, portfolio building and career research. This course will utilize PLTW Design & Modeling as a curriculum framework.

Course TEKS/Objectives:

The Principles of Applied Engineering TEKS (Texas Essential Knowledge and Skills) are organized into reporting categories, each focusing on a specific area of Engineering. Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will have an understanding of the various fields of engineering and will be able to make informed career decisions. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments. Each category contains specific standards (TEKS) that students are expected to master. https://tea.texas.gov/about-tea/laws-and-rules/sboe-rules-tac/sboe-tac-currently-in-effect/ch130o.pdf

Course Outline:

Semester 1	Semester 2
-Introduction to Design -Isometric Sketches -Multiview Sketches -Dimensioning -Mechanical Dissection -TinkerCad	-3-D Printing -History of Engineering Science -Design Process -Design Briefs -Box & Whisker Plot -Architecture Design: Blueprints, floor plans and framing