

Engineering Design and Problem Solving Syllabus

Course Description: This course has the components of science and engineering from the following: problems identification, investigation design, data collection, data analysis and presentation of conclusions. Components are integrated with career and technical education.

Engineering Design and Problem Solving Calallen High School

Prerequisite: 10-12 graders, Algebra 1, Biology, and any 1 STEM CTE Course

Student Required Supplies: Folder or binder to keep handouts

School Provided Materials: Computers, AutoCAD software, Engineering Notebook, tools

****Students will keep all equipment in the classroom! The tools, equipment, drafting pencils, rulers, calculators, and other equipment belong to the school and are not for student's use outside the room.**

Grading Policy:

In addition to the Calallen High School Grading Policy, student work will be assessed and graded based off student portfolio and student projects and participation in group projects.

Evaluation and Assessment: Final grades are based off the following grading scale.

Major Unit projects/Portfolio	60% of grade
Classwork	40% of grade

The grading scale for Calallen High School is as follows:

A = 90% – 100%

B = 89% - 80%

C = 79% - 70%

F = 69% - below

Requirements for Assignments:

Students will have the majority of class time for assignments as I realize the equipment and software is not available outside of school for students. However, if a student is not able to complete the project during class time, then it is the responsibility of the student to make arrangements with me to have access to the CAD room to complete projects.

Instructor Disclaimer:

Despite careful planning, situations sometimes arise which can alter the subject matter being taught. The unit/schedule is tentative and subject to change.

Academic Integrity:

Academic Integrity is essential to a positive teaching and learning environment. All students are expected to complete coursework responsibilities with fairness & honesty. Failure to do so, by seeking unfair advantage over others or misrepresenting someone else's work with your own will result in disciplinary action. Students caught cheating will be dealt appropriate consequences after a meeting with the student, teacher, principal, and parents to address this serious issue.

Classroom Expectations:

In addition to the Calallen Student Code of Conduct the following is expected in the classroom:

- Respect, Responsibility, Trustworthiness, Caring/Kindness, Citizenship
- This is a Pre-Engineering Course and the level of expectation for mature, ethical behavior is increased and anything less will not be tolerated as it does not lead to the professional conduct expected in the "Real World."

If you choose not to follow the expectations or guidelines the following will take place:

RESULTS OF CHOICES

- Student/Teacher Conference
- Parent phone call
- Appropriate Consequences

Course Description

This course has the components of science and engineering from the following: problem identification, investigation design, data collection, data analysis, and presentation of the conclusions. All the components are integrated with career and technical education. There is an emphasis in helping students gain knowledge and skill in research, problem solving, conceptual models & the engineering and scientific process.

POE Unit Summary

Semester 1: Design Process for Capstone Project

Semester 2: STEM Skills