



Syllabus Principles of Engineering

Course description and goals:

Principles of Engineering (POE) is a UC-approved high school-level survey course of engineering and the second course offered as part of Tustin High School's T-Tech Technology & Engineering Academy. This STEM course exposes students to some of the major concepts that they will encounter in a postsecondary engineering or engineering technology course of study. POE will also give students the opportunity to develop skills and understanding of course concepts through activity- and project-based learning. In other words, it will feature many hands-on projects and activities which will enhance and illustrate each and every lesson. It will be a challenging but fun class!

Students will employ engineering and scientific concepts in the solution of engineering design problems as well as an opportunity to investigate engineering and high tech careers. Each student will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges. The POE course of study includes topics in Mechanisms, Energy Sources & Applications, Machine Control, Fluid Power, Statics, Material Properties & Testing, Statistics, Kinematics, Robotics, and more.

Prerequisites: POE is only offered to 11th grade students who have completed *Product Design & Engineering* or equivalent with a grade of "B" or better. A T-Tech application must also be approved by T-Tech faculty.

Standards: Pursuant to California CTE *Engineering & Architecture* standards 1.0 - 11.5 and *Engineering Design Pathway* Standards B1.0 - B11.2.

Materials: Recommended Supplies – Dedicated design notebook and pencil, laptop computer.

Grading Policy:

Semester grades will be computed by the following formula:

Classwork & Projects	60%
Tests & Quizzes	20%
Class Participation & Group Work	20%

Letter grades will be earned according to the following scale:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60%- 69%	D
Below 60%	F

Grades are posted regularly online via the Tustin High School *Parent Portal*. All students and parents should be routinely checking progress online and notify the instructor immediately if there is a discrepancy.

T-Tech Academy – It is imperative to remember that a student's grades will greatly impact his or her ability to continue within the academy - all students will be required to re-apply for admission to T-Tech at the end of each school year.

Classwork, Projects & Attendance – POE is a project-based class which means there will not be as much homework in the traditional sense. However, attendance and class participation become extremely important. If a student is absent and does not make up the projects missed, it is the *student's responsibility* and his or her grade *will* be negatively affected.

Students will be required to take notes daily and keep all notes, sketches and design ideas in a dedicated Engineering Notebook provided by the instructor.

Behavior — All Tustin High School guidelines for behavior will be strictly enforced in class, including rules for attendance, tardiness and the use of electronic devices for non-academic purposes. Although students should feel free to work together and consult each other for extra help with their homework, outright cheating will not be tolerated. Each student will receive clarification on expected behaviors during the first days of school.

Office hours -- Mr. Hernandez is available most days before school, during 6th period, after school, and at other times by appointment. Students are encouraged to seek help at the first sign of difficulty. Parents are also encouraged to check their student's progress regularly via the Parent Portal and to contact the instructor with any concerns. Email is the best and quickest method of communication but you can also leave a message at the office or classroom extension. Students and parents will also be able to subscribe to the T-Tech *Remind* app, alerting them via text message or email on T-Tech matters including homework, meetings, etc. The T-Tech Haiku page will also be a vital part of the class and students are expected to check it daily.

Phone: 730-7414, Ext. 526

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Expected School-wide Learning Results

The Tiller Family is a “Team” that produces graduates who:

Think critically across the curriculum through:

Integrating WICOR strategies

Creating and developing high quality products

Analyzing multiple sources

Effectively communicate:

Using a wide range of media and technology

By taking personal, social, and civic responsibility

Fostering positive interactions with our diverse population

Advance literacy:

While innovating, discovering, and taking risks

Through synthesis and analysis of a rigorous curriculum

By exploring cultural, scientific, global, and visual competencies

Manage time and resources effectively by:

Prioritizing, planning and achieving results

Using real-world tools

Balancing physical and mental fitness

To the student: The Constitution of the State of California requires that we provide a public education to you free of charge. Your right to a free education is for all school/educational activities, whether curricular or extracurricular, and whether you get a grade for the activity or class. Subject to certain exceptions, your right to a free public education means that we cannot require you or your family to purchase materials, supplies, equipment or uniforms for any school activity, nor can we require you or your family to pay security deposits for access, participation, materials, or equipment. Under certain circumstances, students involved in extracurricular programs, clubs and/or sports may be required to attend fundraising events held by the program, sport or club just as you may be required to attend any other event put on by that program, club or sport. However, you will not be required to raise funds as a condition of participation.