**Principles of Applied Engineering**

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Room Location: H2.5 Conference Period: 4th Period

*Engineers make a world of difference!*

Course Description

Principles of Applied Engineering (POAE) is a high school-level foundation course in the Fort Bend ISD Engineering Program. Students are introduced to the engineering design process, applying math, science, and engineering standards to identify and design solutions to various real problems.POAE provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will complete assignments and projects using various computer hardware and software applications.

Students are introduced to the engineering design process, applying math, science, and engineering standards to identify and design solutions to various real problems. They work both individually and in collaborative teams to develop and document design solutions using engineering notebooks and 3D modeling software.Upon completing this course, students will understand the various fields and be able to make informed decisions regarding a coherent sequence of subsequent courses. 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.

*Are you ready to design the future?*

POAE Unit Outline

\*Subject to change\*

**Semester 1**

**1st nine weeks**

* Unit 1: Intro to Principles
* Unit 2: Intro to 3D Modeling
* Unit 3: Units and Measurements
* Unit 4: Isometrics Sketching and 3D Modeling

**2nd nine weeks**

* Unit 5: Orthographic and Multi-views
* Unit 6: Advanced Features in 3D Modeling
* Unit 7: 3D Modeling Assemblies

Semester 1 Final

**Semester 2**

**3rd nine weeks**

* Unit 7: 3D Modeling Assemblies (Cont.)
* Unit 8: Physical Properties
* Unit 9: Mechanisms in Engineering

**4th nine weeks**

* Unit 9: Mechanisms in Engineering (Cont.)
* Unit 10: Electricity

Semester 2 Final

General Course Objectives:

* Students will demonstrate proper use and care of equipment.
* Students will study and practice engineering and design techniques as they are used in the industry.
* Students will be encouraged to function at their highest efficiency level regarding neatness and accuracy. Time management skills in engineering will also be emphasized.
* Students will be evaluated constantly as engineering assignments are completed.
* Students will keep an Engineering Notebook of completed designs and problem-solving activities.

Supplies:

***Individual***

* *Composition Book Quad Rule (graphing paper)*
* *Pencil*

***Shared Class Room Supplies (pick one to bring)***

* *Scotch Tape Rolls 6 pack*
* *Pencil Set*
* *Erasers (both pencil ends and individual erasers)*
* *A Box of Tissues*
* *SLU 1.75mm 3D Printer Filament!!!!!*

Student/Classroom Expectations:

* Show respect to yourself, your peers, and your teacher. Have pride in the way you conduct yourself. I will show you as much respect as you show me.
* All students will be on time. Tardiness is not acceptable.
* Students must come to class prepared each day by completing all assignments/materials learned in class.
* Students will be expected to participate in all activities involved in the class.
* Any student absent from class is responsible for getting material from another student and being prepared when returning to class.
* Each student is responsible for their belongings and materials.
* Follow all rules and regulations of AHS
* ALL students are expected to participate, no matter the circumstance!!!! Participation is imperative for this type of class. If a student refuses to participate, points may be deducted from the student’s grade. Participation grades may be given at any time throughout the semester.
* **NOTE**: If a student is absent from an approved extracurricular activity, then the student is responsible for turning in the assigned work at the beginning of the next class. If the student has an unexcused absence, the work will not be accepted until the absence has been changed to an excused absence. If the absence is not changed within the appropriate time, as stated in the student handbook, then the student will receive a zero(s) for any and all work that was due during the time of his/her absence.

Requirements:

* All students must come to class prepared with the following materials: Engineering Notebook. Laptop and Pencil (Additional materials will be announced before the next class when needed.)
* Students **must** keep up with an interactive notebook for their assignments.

Grading Policy:

\*Each nine weeks, is worth 42.5%. of the semester grade. The final exam is worth 15%

* Major 50%
* Daily: 50%

Daily Grades:

* Most activities assigned will be daily grades. Rubrics for each activity will be communicated to students.
* This class will also include hands-on lab activities. These will usually be daily grades but will be more heavily weighted, depending on how many class days it takes us to complete them.
* Daily warm-ups will be graded at the end of every week. These will be worth one-quarter that of normal daily grades.

Major Grades:

* Written, hands-on, and visual tests (or projects) will be given. Written exams will consist of facts, problems, and vocabulary given prior to the test date. Visuals and hands-on exams will be assigned throughout the semester with given due dates.
* Notebook Checks: Students must actively keep their Engineering Notebook current. Expect a notebook check every 2-3 weeks to ensure proper notebook keeping. These will be worth half of what your normal major grade is worth.
* Retakes: Retakes will be allowed for written tests only. Students have one week (five school days) from the date the scored test was returned to make up the test. The maximum score that can be achieved is 75.

**- Every day an activity is late, you will lose 5 points**.

Schoology:

* Schoology is implemented in the classroom as a blended learning tool to help students be successful. Lessons, including video lessons, will be posted in Schoology for students to access anytime. You can also expect activities posted here. This information will be provided to students throughout the year as needed.

Cheating:

Make choices with honesty and integrity and allow yourself time to do your work so you do not have to compromise your integrity.  High school is as much about implementing time management with discipline as it is learning about academics.  Both are valuable assets to your future success. If your behavior leads me to believe you are cheating, you are more than likely cheating.

* Cheating includes letting others copy your answers on homework, classwork, or any other type of assignment. Notice the difference between supporting another student while doing homework and flat-out copying their work. Tutoring others is beneficial, but enabling a student to not learn by allowing them to copy your work is unacceptable.
* Cheating is sharing test questions/ answers with other classes. Doing this compromises the integrity of the test.
* Cheating is taking pictures of other students' work, the teacher’s PowerPoint presentations, tests, and quizzes, and then distributing them to others and copying them as your own.
* Cheating is using your phone or online resources for answers when it is not permitted.
* **You will get a zero grade for that assignment or test!**