



# Principles of Applied Engineering



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## Course Description:

Principles of Applied Engineering (**PAE**) 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. (§130.402.B)

## Course Objectives:

This course will focus on exposing students to a wide range of engineering disciplines, with a focus on robotics. **PAE** is a project-oriented course. Students will work in teams to solve engineering design challenges using a robotics kit. Through these design challenges, students will learn about the following:

History of Engineering	Working on a Design Team
Electricity	Technical Documentation
Safety in the Workplace	Engineering Design Process
CAD	Programming

**PAE** will be working with **Tigerbotics**, the Glen Rose High School robotics team.

**Tigerbotics** participates in two competitions: BEST in the fall, and FIRST in the spring. The team will meet after school to design and build the robot, but students in **PAE** are not required to attend. **PAE** students are invited to come and compete, if they meet the UIL requirements for eligibility.

## **Tutorials/Conferences:**

Mr. Stover is available for tutoring upon request. Tutoring times will be scheduled based on students' needs. Mr. Stover's conference period is during 1<sup>st</sup> period, from 7:55-8:44 on most days. If you need to schedule a conference or tutoring session, please contact Mr. Stover at [stovri@grisd.net](mailto:stovri@grisd.net).

## **Grading Policy:**

All class work is managed using Canvas. When an assignment is graded, Mr. Stover will leave comments through Canvas explaining why points were taken off. Each Monday, grades will be pushed from Canvas to Skyward. It is the student's responsibility to check Skyward weekly. Any assignment that is due during the last week of a grading period will be recorded on the first day of the next grading period. This is done to reduce stress, and to allow time for the student to make up assignments if they need to.

## **Grade Weights**

Assignments will be weighted as follows:

Daily Grade	100 Points
Minor Project	300 Points
Major Project	600 Points

## **Grade Average Calculations**

The six weeks grade will be the sum of points earned divided by points available, multiplied by 100. For example, if one six weeks has 3 daily grades, 2 minor projects, and one major project – a student's grade might look like this:

Name	Daily 1	Daily 2	Daily 3	Minor A	Minor B	Major	Total
Earned	75	89	100	255	285	552	1356
Available	100	100	100	300	300	600	1500

In this example, the student would earn a grade of:

$$\frac{1356}{1500} * 100 = \mathbf{90.4}$$

### **Homework:**

All assignments are designed to be completed during class, so no homework is officially assigned. If a student is unable to complete the assignment during class, they will need to complete it on their own – outside of class time.

**REMEMBER:**

**IF YOU DID NOT SAVE IT, YOU DID NOT DO IT!**

### **Late Work/Make Up Work:**

If, for whatever reason, a student is unable to complete their assignments on time, they will automatically receive a zero in the gradebook. When the student turns in the missing assignment, it will be graded without penalty. If a student receives a grade they are dissatisfied with, they may correct and re-submit the work and it will be re-graded. If the assignment is a test, they can re-take the test once, and the better of the two grades will be recorded in the gradebook. However, assignments will only be re-graded during the same six-week period in which they are assigned.

### **Cheating/Plagiarism**

Students who are caught cheating, accessing another student's work files, or misrepresenting work as their own will receive a grade penalty and the parent/guardian and student's administrator will be notified. Grade penalties typically include receiving a '1' for the assignment. Academic dishonesty is unethical and will not be tolerated. Students are always encouraged to help/tutor their classmates but copying work and turning it in as their own is not acceptable.

### **Appropriate Content**

The projects in this course are designed to allow for the student's creativity to show through. However, all assignments handed in must be school appropriate. Any assignment

that contains references to illegal or inappropriate activities or violates the student code of conduct in any way, will be returned to the student ungraded. If the student does not change the assignment, they will score a zero on the assignment and appropriate disciplinary steps will be taken.

### **Attendance and Tardies:**

All students are expected to be on time to class. Appropriate disciplinary measures will be taken for students who are chronically late. If a student is absent, they are responsible for any work they have missed. It is recommended that students get work in advance if they know they will be absent for any reason. Likewise, students will be responsible for any work they miss during class.

Students are expected to remain in the classroom until the bell rings, unless otherwise instructed. When travelling between locations, students are expected to stay together and not disrupt other classes.

### **Classroom Procedures:**

This is a computer lab in which a positive attitude and professional work ethic is expected at all times.

- Respect yourself, others, and the equipment.
- Use appropriate language.
- Food and candy are not allowed in the classroom.
- Drinks in a sturdy container with a resealable lid are allowed.
- Use your time wisely.

### **Restrooms**

Students are allowed to use the restroom as needed, however only one student may leave the classroom at a time. Notify Mr. Stover before leaving to the restroom.

### **Materials Needed**

You will need to bring your charged MacBook to class every day. It is also recommended that you bring headphones to use with your MacBook. We will be using Trello to manage large projects, and students will be expected to create a Trello account using their school email.

### **Classroom Expectations**

Procedures for Mr. Stover's classroom are designed to minimize disruption and maximize student autonomy. Students who need to stand or otherwise be out of their chair may do so if they are not causing a disturbance for others. Flexible seating charts allow for students to find their best learning environment and adapt to day to day demands. If a student causes problems, Mr. Stover will address the situation. What Mr. Stover does will depend on what happened, and what the student is willing to do to fix the problem.

### **School Shutdown**

If the school shuts down and GRISD moves to virtual learning, Mr. Stover will continue to post assignments and updates on Canvas. Any special instructions will be announced using Remind or Canvas.