



Engineer Your World

Gregory Poe

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Cascade High School



Instructor: Gregory Poe

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Tutorial/Office Hours: Available after school by appointment

About Mr. Poe: I love engineering, but even more I love *teaching*. I look forward to seeing my students and helping them grow. I go the extra mile when it comes to planning lessons and ensuring fairness. I'm your coach, not your boss. If we work together, we can accomplish great things.

Course Description: This course introduces students to engineering through a series of projects like creating a pinhole camera, designing an earthquake-proof tower, building an aerial imaging device, etc. Students often express their love for this course because it's project-based, meaning there are no worksheets or tests. That said, this course can be intense. Students learn to program, 3D print, and create complex circuits. Each project lasts about a month and teaches a core engineering practice. Throughout the year, students create an engineering portfolio to display their learning.

Tentative Course Outline:

FALL SEMESTER

Unit 0: Introduction to Engineering
Unit 1: Designing a Pinhole Cameras
Unit 2: 3D Modeling
Unit 3: Creating Aerodynamic Cars
Unit 4: Circuit Design

SPRING SEMESTER

Unit 5: Programming Electronic Music
Unit 6: Engineering Research Project
Unit 7: Build Earthquake-Proof Buildings
Unit 8: Aerial Imaging project

Communication: The best way to reach me is via email. Parents and students may email me to request a date and time to conference. Additionally, I periodically email newsletters to parents.

Tutoring Hours: I typically do not have students stay after school for this class because there are no tests. But, if a student needs help, I'm typically available anytime by appointment if I have prior notice.

Classroom Expectations: This class is not a study hall, a socializing hour, or a homeroom. Students are here to learn physics. Thus, students cannot work on other class's assignments until they're done with mine. Students can glance at their phones and talk with neighbors while they work, but they cannot play games or engage in off-topic conversations at the expense of completing assignments. I will exercise the right to take up cell phones until the end of the class period, assign seats, and do whatever it takes to motivate students.

Canvas: Students need to bring their charged laptops every day. We'll use it to access project instructions, software, portfolios, etc. All this is on the front page of our Canvas course.

Parents may view our Canvas, but they cannot interact with its assignments. I recommend that parents download "Canvas Parent" and students download "Canvas Student" on their phones. More information about accessing Canvas can be found [here](#). NOTE: The grades in Canvas are purely for feedback. Weighted grades are only recorded in Gradebook.

Gradebook: Students earn around 10 weighted grades per semester, mostly determined by portfolio entries. Parents and students can access grades [here](#). Note that, students only earn grades upon the completion of projects, so it may take 2 months before they receive their first weighted grade.

The Portfolio: In this class, students are graded for their understanding, not for their “doing”. *This is not a “building” class, it’s an engineering class!* Thus, the portfolio entries are crucial to determining students’ grades. Historically, almost all students turn in something for each project, but only 75% of students complete portfolio entries on time. As a result, they do not earn high grades. I urge you, do not waste the time you’re given in class to work on your portfolio – it is a crucial part of this class.

Portfolio Scores follow this rubric.

Mastery	A	Anyone viewing the portfolio entry would conclude the student demonstrated mastery of the material and <i>engineered</i> an effective product. Additionally, the entry is clear and professional. You seem impressive!
Proficient	B	Anyone viewing the portfolio entry would conclude the student demonstrated a “ good enough ” understanding of the material and <i>engineered</i> a mostly effective product. Additionally, the entry is clear and professional. You seem competent!
Developing	C	Anyone viewing the portfolio entry would be unsure of the student’s proficiency. At best, your understanding appears to be “ somewhat lacking ” and the product may appear ineffective. Perhaps the entry is unprofessional or unclear .
Beginning	D	Anyone viewing the portfolio entry would be unsure of the student’s proficiency. At best, your understanding appears to be “ very lacking ” and the product may appear ineffective. Typically, portfolios in this category are difficult to understand.
No Evidence	F	You either did not complete a portfolio entry, or there’s no evidence that you understand any concepts.

Make-Up Assignments: There are no penalties for late work in this class. However, it’s wise to keep up, because late assignments cannot be completed during class. For students who’ve fallen very behind, I offer the option to make up entire projects with shortened Make-Up Assignments. They’re simple, but they only demonstrate a Developing (C-level) understanding, at best. These will replace missing unit grades with Cs. Additionally, completing these warrants an email home. Parents need to know when their children aren’t completing projects. These are for desperate students, so they can catch up with the class. Don’t count on them. Email Poe if you need one.