COURSE DESCRIPTION:
Principles of Engineering (POE) is the overview of engineering and engineering technology. Students develop problem-solving skills by tackling real-world engineering problems. Through theory and practical hands-on experience, students address the emerging social and political consequences of technological change.

Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will analyze, design, and build aerospace systems. While implementing these designs, students will continually hone their interpersonal skills, creativity, and application of the design process.

Principles of Engineering is a high school level course that is appropriate for 10th, 11th, or 12th grade students interested in Engineering. It is recommended that students are concurrently enrolled in college preparatory mathematics and science courses and have successfully completed the Introduction to Engineering Design (IED) course.

POE is one of the foundation courses in the Project Lead The Way high school engineering program. The course applies and concurrently develops secondary-level knowledge and skills in mathematics, science, and technology.

The course of study includes:
- **Energy and Power**
  - Mechanisms
  - Energy Sources
  - Energy Applications
  - Renewable Electrical Energy
- **Materials and Structures**
  - Statics
  - Material Properties
  - Material Testing
  - Bridge Structure
- **Control Systems**
  - Machine Control
  - Fluid Power
  - Materials Sorter with Coding
- **Additional Materials**
  - Statistics
  - Kinematics

STUDENT EXPECTATIONS
Students are expected to complete all assignments and projects on time. A maximum of 3 days is allowed for late work, per county policy. Any work not submitted until after the 3 day period will lose 10% of the final grade for each day past the due date (including weekends).

- Attendance along with active daily participation is critical to your success in this class.
- Students are expected to complete and turn in all assignments and projects missed due to an absence.
- Students will be expected to check in with the teacher if they are unable to log into schoology.

**TEXTBOOKS/MATERIALS**
1. Quad Ruled Composition/Engineering Notebook (Picked up at KIHS)
2. Calculator
3. Pens and Pencils
4. Additional materials for projects will be posted throughout the semester. All items can be found at the dollar store.

**CLASSROOM RULES & PROCEDURES**
1. Respect yourself, your teacher, and your classmates.
2. Use appropriate language.
3. Turn in work on time.
4. In order to receive extra assistance please schedule a time with instructor

**GRADING POLICY**
Student progress will be evaluated in the following areas:

- Mastery Assessments 50%
- Progress Assessments 50%

**EXPLANATION OF ASSESSMENTS**
Students will be graded using a variety of methods both mastery and progress. The mastery assessment may include weekly quizzes, tests, and large projects. The progress assessment may include class assignments, smaller projects, and program assignments. In addition, the student must complete a portfolio, a reflection of his/her experiences and best work, as part of the final assessment.

**ATTENDANCE POLICY**
You are expected to be logged into class on time each day. After 2 offenses parents and administration will be notified in an effort to rectify the situation.

**EXTRA HELP/MEET TIME**
If you require additional support, or extra time I am available every day after school. Please email me and we will set up a time to talk.

**COMMUNICATION**
I can be contacted by email (catherine.beaton-fuller@qacps.org) or by Google Voice (443-499-2371).
Email is the preferred method to reach me.

With mutual cooperation and effort, I hope that together we can make this a very successful school year for you and your child! Should you have any questions or concerns please feel free to contact me. The best time to reach me is immediately after school.