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| **Principles of Engineering (POE)** **Course Description**  |

Principles of Engineering (POE) is the second PLTW course after Introduction to Engineering Design. Students must have passed IED to take this course.

This course is intended to introduce you to the field of engineering and all the aspects related to engineering. You will start by looking at the educational path that leads to a career in engineering. The path of solving technical problems, from design and development, to manufacturing and testing will be covered. Most of this will be achieved by working through the Design Process. Because of the nature of some engineering challenges, there will be some elements of physics, vector math, and statistics involved. You will work extensively with computer technology, as well as word processor, spreadsheet, and presentation software.

The course of study includes:

 **Energy and Power**

 *- Simple Machines*

**Materials and Structures**

 *- Statics and Vectors*

**Control Systems**

 *- VEX Robotics*

**Statistics and Kinematics**

 *- Projectile Motion*

**Grading –** Your grade will be determined based upon a total point system. Each assignment will carry a point value based upon the following criteria. Your final grade will be determined by the percentage of points you earn out of the points possible.

**Projects/Tests**: 50-100 pts

**Quizzes**: 25-50 pts

**Notebook Checks**: 100 pts

**HW**: 10 points

**PLTW End-of-Course Exam**: Counts as a test in MP4. Scored similar to AP exams only on a 9 point scale. Earn a 6 or higher and you could earn college credit!

**Class Expectations**

1. Students will be given significant independence in this course, so you must pace yourself as you work. I will provide you with deadlines when things are due
2. Cell phones, ipods, ipads, electronics, etc. – keep them away during class, period.
3. All missed work, including tests/quizzes due to an absence must be made up within a reasonable time of absence.

**SUPPLIES:**

* **Engineering Notebook** (required) – composition notebook with ¼ inch graph paper.
(you can normally find these at any office supply store)
* **Pens or Pencils** – students will be writing in their engineering notebooks EVERYDAY, they will need good pencils or pens for class. (I highly recommend several different colors) **Headphones** – students with watch several short instructional videos and tutorials that require them to have headphones.
* **Flash Drive** - 2 GB recommended
* **Scientific Calculator** - TI-30x, TI-83+, TI-86, etc.