

Orange High School

To Educate, Elevate, and Empower Every Student!

Department of STEM-focused Learning

Principles of Engineering Course Syllabus

Instructor: Ms. Sonya Noebels (AKA Ms. Nikolaidis)

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Period: 6

Room #: 173

Course Description

Principles of Engineering (POE) is a high school level course that is appropriate for students who are interested in engineering and robotics. The course assumes no previous engineering knowledge, but students should be prepared to use Algebra and Geometry to solve problems.

The major focus of POE is to expose students to problems in mechanical and structural engineering as well as broaden their understanding of developing fields such as robotics, environmental sustainability and artificial intelligence. Students will use the engineering design process to develop solutions to engineering challenges; they will also use 3D modeling software to aid in designing, documenting, and communicating their work. In a later unit, they will design, build, and program machines using VEX.

This course is a Project Lead the Way (PLTW) course and is followed by Design of Electronics (DE).

Course Outline

Unit 1- Product Design and Development

Unit 2- Designing Infrastructure and Developing Sustainability

Unit 3- Mechanical Design

Unit 4- Application of Robotics

Course Materials

Project Lead the Way Website PLTW.org

Grading

Your POE grade is made up the following categories and their corresponding weights:

Authentic Assessments	25%
Tests	25%
Classwork / Participation	20%
Quizzes	20%
Homework	10%

Authentic Assessments: Minimum of 2 authentic assessment projects per marking period. These could be individual or in groups. Students will be graded on a rubric and receive feedback.

Tests: Minimum of 2 tests per marking period. To study for tests, students should complete test reviews and review their quiz and authentic grades.

Classwork: Minimum of 8 classwork grades per marking period. Whether it is individual work or group work, students are expected to actively work on these assignments. Class work may be collected at the end of the class to be graded for accuracy.

Quizzes/Checkups: Minimum of 3-4 quizzes per marking period. To study for the quizzes, students should complete all the homework assignments.

Homework: Minimum of 8 homework assignments per marking period. Homework will usually consist of conclusion questions posted to google classroom, to be answered in 1-2 paragraphs.

Before a quiz or test, I may assign additional homework as a review.

Please complete your homework on time! I will accept late homework for **half credit at most**, unless you come to see me after school. I will **not** accept unit 1 homework after the unit 1 test.

- Don't be afraid to ask me for help on the homework! This will be the best way for you to do well on these assignments. I will be in room 173 after school until 3:00pm each day.

Required Supplies

Each student is responsible for coming to class everyday with the following:

- Your engineering notebook. You may use your notebook from last year if you still have it; if not I will give you a new notebook. Do **not** lose your notebook, you will not receive another one!
- Classwork folder for storing graded classwork and homework assignments
- Pencils with erasers
- District-issued chromebook or other personal device with charging cord

Rules of Conduct & Guidelines

- **Be respectful** to yourself, your classmates, and your teacher(s)
- **Do not become a disruption or a distraction** in class. This will not be tolerated, and the student will receive detention and/or be removed from class if this occurs. Removal from class would result in loss of participation and classwork points for the day, and possible administrative action.
- **Be on time.** This means in your seat and quiet before the class starts.
- **Follow proper start up procedure.** I will write the Do Now on the board at the front of the room; please start immediately.
- **Do your class work with purpose and urgency.** Complete all classwork with the intention to LEARN something, not to just check it off a list.
- **ALL Orange High School Rules and Procedures MUST be followed in class and out of class.** Please visit our Orange High School Website to review the Student/Parent Handbook.

Absences

Students are responsible for all material taught. If pacing is too fast for a particular student, then they must seek extra help from me either before or after school. If a student is removed from class for disruptive behavior, they will lose points from their participation/class work grade, and they will still be responsible for all material they may have missed. If a student is absent, they are excused from classwork but must complete all homework, tests and quizzes. Students have as many days as they were absent to make up additional assignments (including quizzes and tests). For example, if a student is absent for 2 days and misses a class work assignment, homework assignment and a quiz, then it is THEIR responsibility to make up the quiz and homework assignment (but not the classwork) within 2 days after their return.

-----Please cut and return-----

To Students and Parents

With hard work and accountability, we can have all of our students succeed in Geometry.

I have read Ms. Noebels' Principles of Engineering 2023-2024 Syllabus and its guidelines. I understand that I am responsible for upholding all requirements and guidelines to succeed in this course. I know what I have to do in order to receive the grade I want.

Student Name

Student Signature

Date

Parent Name

Parent Signature

Date

Contact Name

Home Phone

Cell Phone