Honors Principles of Engineering
Course Syllabus
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Plan Periods: B8
Office/Classroom Room: Curriculum Center or Engineering Office
Best times to contact: During your class period

Course Description:
Principles of Engineering (POE) is a Project Lead The Way survey course of engineering. The course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study. Students have the opportunity to investigate engineering and high tech careers. POE gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation. This course includes an innovative curriculum across English, Math, and Engineering courses to prepare students for the fundamentals of public speaking, written expression, and critical thinking in correlation to the design process. Students will engage in technical writing activities, informational reading relevant to engineering topics, and formal/informal presentations in anticipation of post-secondary education and career studies.

Instructional Philosophy
At the conclusion of this course, students will be able to identify different disciplines in engineering and begin to develop a passion and direction which they can follow to a career path.

Content Standards
Many mathematics, science, and language arts state standards are covered in POE. You can find a full list at http://cestandards.education.ne.gov/Courses/100160_PLTW_Principles_of_Engineering.pdf
Due to the content of the class, students must have a solid foundation in Algebra, Geometry, Right Triangle Trigonometry, Physics, Biology, Chemistry, and Language Arts.

Major Units of Study
Unit One: Energy and Power; Unit Two: Materials and Structures; Unit Three: Control Systems; Unit Four: Statistics and Kinematics

Course Expectations
- Work in and out of class to complete all coursework to a standard that each student is proud of.
- Complete a yearlong writing project that incorporates an interview, research, and personal reflection.
- Improve proficiency in mathematics, science, and language arts skills. These will be practiced in POE and are important to all Engineers.
- Complete a journal each class period to provide reflection on new ideas or material learned.
- Work collaboratively in groups to create projects that all group members can be proud of.
Class Rules and Expectations:

- Students will come to class prepared to learn with materials needed for class.
- Students will show respect for their peers, instructor, and working environment.
- Students will follow all safety procedures.
- Students will clean the workspace each day.
- Students will complete individual assignments as individuals and group assignments as groups.

Assessment

- Course grades will be determined by planned assessments such as tests, quizzes, lesson assignments, journals, papers, presentations, and projects scored with rubrics.
- Major tests and/or writing projects are to be expected at the end of each major unit outlined below.

OPS Secondary Grading Practices

All coursework and assessments are judged based on the level of student learning from “below basic” to “advanced.” This course will provide multiple opportunities to achieve at the “proficient” to “advanced” levels. Students are evaluated based on a proficiency scale or project rubric.

There are two types of coursework

- Formative (35% of the final grade) – Homework, In-class assignments, Quizzes.
  Homework and in-class assignments will be given daily and are graded on performance. Writing the answers from the back of the text book is not completing your homework and will receive a score of a zero. Homework questions will be asked at the beginning of each class and students should utilize that time to fully understand each homework problem. Homework will be due for each chapter on the day of the chapter test. Quizzes will be given a few times a month. Students will be given notice to when these will occur. Students will be given chances to retake quizzes when necessary.
- Summative (65% of the final grade) – Tests, Culminating Tasks
  Tests will be given at the end of units. Students will be given test dates a week or so in advance. Culminating Tasks will be given at different times throughout the year. These assessments are project-based.

  OPS Grading Scale

  A 3.26 – 4.00
  B 2.51 – 3.25
  C 1.76 – 2.50
  D 1.01 – 1.75
  F 0.00 – 1.00

Missing Coursework: Coursework not turned in at all will be recorded as an M for missing which calculates to a score of zero.

Redoing/Revising Coursework: Students may be allowed redos and revisions of coursework for full credit during that unit of study based upon the teacher’s professional judgment and evidence collected throughout the unit. Scores for student work after retaking, revision or redoing work will not be averaged with the first attempt at coursework or assessment, but will replace the original student score. Students may only retake an exam if they have completed all coursework for the unit.

Late Coursework: Students are expected to complete coursework on time. Late coursework may be accepted for full credit until the end of the unit based on the teacher’s professional judgment and evidence collected throughout the unit. Accepted late work will not result in a reduction, and the M (missing) will be replaced with the score earned by the student. The teacher or school may make exceptions depending up on student circumstances (such as prolonged absences due to illness).

Academic Integrity: Students involved in allowing coursework to be copied or copying other’s coursework will receive a grade of zero. There will be no opportunity to redo any coursework in which a student is caught cheating.