

# Principles of Engineering - 2015-2016

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Community

Personalization

Progress

Purpose

John Bramley

[jbramley@hdsd.k12.nh.us](mailto:jbramley@hdsd.k12.nh.us)

464-1225

## Course Description

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.

## Methods of Instruction

Instruction is typically done through a brief introduction of a topic, followed by individual or group exploration of that concept. Each main topic is accompanied by an encompassing project that allows the student to demonstrate their knowledge of the concepts being explored.

## Assignments

The majority of the coursework is done in the classroom. There will be minimal work outside of the classroom due to the group nature of the course, and the software needed to do many of the assignments. Any student who needs additional time due to absence or other extenuating circumstances can use our PREP time, or after school with notice, to complete assignments and/or to receive additional assistance.

Any assessment that needs to be made up due to absence, or needs to be retaken, will be done after school or PREP with me observing the assessment.

## Evaluation

This course is evaluated on five course competencies: **Design Process**, **Visual Communication**, **Modeling**, **Communication**, and **Professionalism**. Each competency is assessed using the indicators: Not Proficient, Partially Proficient, Proficient, and Proficient with Distinction.

Credit is awarded at the end of the course. In order to receive credit for the course, each student must have at least **THREE** of their competencies in the Proficient, or Proficient with Distinction categories when the school year is completed. Any of the other two competencies that are not in one of those two categories, must be in the partially proficient range. If, at the end of the course, a competency is assessed as Not Proficient, the students will not receive credit for the course.

## Student Responsibility

Students are expected to be in class on time and ready to learn. Typically each student should have their notebook and pens/pencils each class. Any special required materials should be brought with them to class as directed.

If a student is absent, for an excused reason, they may make up work missed during PREP or after school. It is expected that this is done within two class days, so they do not fall further behind.

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This course meets block 2B, which is directly after break. Students are expected to use the bathroom and take care of their personal needs during that time as to minimize time outside of the classroom.

## Scope and Sequence

Unit 1: Energy and Power

Unit 2: Materials and Structures

Unit 3: Control Systems

Unit 4: Statistics and Kinematics

## Office Hours

I am available after school for assistance most days. Students may also schedule themselves to my room during PREP to make up missing work, or to get assistance on a particularly difficult assignment.

Contact Information:

Phone: 464-1225

Email: [jbramley@hdsd.k12.nh.us](mailto:jbramley@hdsd.k12.nh.us)