



ENGINEERING DESIGN AND DEVELOPMENT

2014-2015

Course Description:

This course is designed to expose students to basic engineering skills, within technical contexts, so students can investigate engineering as a potential college major and career choice. Students will work in teams to formulate both the design and construction of a solution to large scale open-ended engineering problems. Students will apply principles learned in prior Technology Education courses. Subjects studied but limited to include aeronautics, robotics, simple machines, and structural design. A fee will be assessed for this course.

Course Content:

Definition and history of engineering.
Product Design and Development
Machine Tool Safety
3-D Modeling and Computer design
Advanced Materials Processes
CNC product design
Robotics
Robotics Sub-systems

Required Textbooks and/or Other Reading/Research Materials

Pennsylvania Department of Education Recommended Lab Safety Procedures Manual
Foundation for the Inspiration and Recognition of Science and Technology (FIRST) Competition Manual
FIRST Robovation – A primer for Success Learning Modules
On-Line resources

Course Requirements:

Students are expected to understand and follow classroom safety policies. Students are expected to come to class prepared with all necessary materials and complete all assignments on time. Each student is required to complete all projects, assignments, and tests. Failure to do so will affect the student's grade. If you are absent for any reason, it is your responsibility to see your teacher for missed work. Please refer to the policy in the student handbook for timelines to make up missed work and tests.

Grade Components/Assessments:

Grades will be based on categories: Cumulative Assessments 20%, Class Participation 10%, Projects/Coursework 70%.

Each marking period is worth 20% of a student's overall grade. The final exam is worth 20% of a student's overall average:

Quarter 1	20%
Quarter 2	20%
Quarter 3	20%
Quarter 4	20%
Final	20%

Required Summer Reading/Assignments:

No summer reading/assignments are required for this course