



Course Syllabus
Introduction to Engineering Design
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Course Description

Introduction to Engineering Design (IED) is a foundation course in the Project Lead the Way high school engineering career pathway at University City High School. It is a course for students who are interested in exploring design and engineering. The major focus of the IED course is to expose students to the design process, engineering standards, research and analysis, technical documentation, global and human impacts, communication methods, and teamwork. IED gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based learning.

Students will employ engineering and scientific concepts in the solution of engineering design problems. In addition, students use a 3D solid modeling design software package (OnShape) to help them design solutions to problems. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges that increase in difficulty throughout the course. Students will also learn how to document their work and communicate their solutions to their peers as well as members of the professional community.

Unit Topics

1. Design and Problem Solving
2. Assembly Design
3. Thoughtful Product Design
4. Making Things Move

Course Resources

- Students will have access to the PLTW curriculum via the myPLTW portal. Each student will have their own login and password for myPLTW.
- When classes are meeting under the Distance Learning model, learning kits may be necessary for certain activities. When possible, family members will schedule a pick up time for learning kits. Arrangements can be made to deliver learning kits when necessary.
- Many concepts in IED are taught through Computer Aided Design (CAD). OnShape is a Chrome-compatible CAD platform that we'll be using.
- Google Classroom

What You Can Expect of Your Instructor

The course instructor serves more as a facilitator of learning than as a traditional lecturer. The instructor is sensitive to the needs of new learners of sophisticated computer applications and has an understanding of the challenges associated with teaching and learning software applications.

What is Expected of Students

- Respect other students in the classroom
- Respect classroom and equipment
- Participate in class activities and discussions (verbally, through chat, symbolically, etc.)
- Class Computers – Please do not change any settings, do not download anything from the Internet (Instant Messenger, games, etc.), and only use the Internet for approved activities from the instructor
- Follow expectations and guidelines of UCHS students

Materials Needed for Class Each Day

- Pencil (sharpened)
- Engineering notebook (provided)
- Thinking cap

Assessment

Grading is based on class activities, student reflection, tests/exams and projects. Summative Assessments count for 70% of a student's grade and Formative Assessments count for 30% of a student's grade.

Documentation of your process is very important. Students may re-do/re-take assignments or projects to improve upon their learning.

NAF Track Certification

Successful completion of IED satisfies one of the three major requirements for students to earn NAF Track Certification.