



**Course Syllabus**  
**Introduction to Engineering Design**  
**Mr. Dorsey**  
**mdorsey@ucityschools.org**  
**Room L211**

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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 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 (Autodesk Inventor) 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 Process                  | 6. Reverse Engineering        |
| 2. Technical Sketching and Drawing | 7. Documentation              |
| 3. Measurement and Statistics      | 8. Advanced Computer Modeling |
| 4. Modeling Skills                 | 9. Design Team                |
| 5. Geometry of Design              | 10. Design Challenges         |

***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
- 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

### ***Classroom Expectations***

- Respect Yourself
- Respect Others
- Respect the Classroom Space

### ***Materials Needed for Class Each Day***

- Pencil (sharpened)
- Engineering notebook (provided)
- Charged Chrome Book
- Thinking cap

### ***Assessment***

Grading for IED is based on 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-take any test within the semester at any time as long as they have all classwork turned in. Due dates will be given for all work.

If you miss a day or more and cannot make up the work during class time, you will need to make arrangements to make up the work. Contact Mr. Dorsey regarding when you can come in.

### ***Learning Management System***

Student will have access to the curriculum at any time at [my.pltw.org](http://my.pltw.org). Students will obtain all documents and presentations via the site.

### ***Electronic Devices***

While it is important to recognize that electronics may be a valuable tool to the learning process, they can also be a great distraction. Therefore, usage will not be permitted at UCHS. Mr. Dorsey's class is equipped with phone lockers for student use.

### ***NAF Track Certification***

Completion of IED is one of the three major requirements for students to earn NAF Track Certification.