



Introduction to Engineering Design 2015-2016



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Course Description and Goals:

Welcome to Introduction to Engineering Design! Introduction to Engineering Design™ (IED) is a high school level course that is appropriate for 9th or 10th grade students who are interested in design and engineering. The major focus of the IED course is to expose students to design process, research and analysis, teamwork, engineering standards, and technical documentation.

The course of study includes:

- Design Process
- Technical Sketching and Drawing
- Engineering Documentation and Drawing Standards
- Measurement and Statistical Analysis
- Applied Geometry
- 3D CAD Solid Modeling
- Reverse Engineering
- Product Design

Course Prerequisites:

The course assumes no previous knowledge, but you should be concurrently enrolled in any college preparatory mathematics and science course offered. Students will employ engineering and scientific concepts in the solution of engineering design problems. In addition, students use a state of the art 3D solid modeling design software package to help them design solutions in order to solve proposed problems. Prior enrollment in PLTW courses would be helpful but not necessary.

Materials Needed for Class: Students are required to have these materials daily:

Pencil with eraser
Pen
2" 3-Ring Binder
Notebook Dividers

*Flash Drive (USB) (Must hold at least 2GB)
Engineering Notebook (bound with thread; lined or graph paper book)
Lined and/or Graph Paper

Attendance and Timeliness: All students are expected to be on time to class with the proper materials. Remember, this class is about presenting yourself as a future engineer. Grade points may be deducted for coming to class without the proper materials each day. Students should be seated with their pencil/pen and materials out ready for instruction or project of the day as soon as they enter the classroom. Professionalism is key in this class!

Course Grades:

Tests	30%	Quizzes	10%
Homework/Projects	30%	Engineering Notebooks	10%
Class Work	20%		

Course Outline:

Unit1: Design Process

Unit2: Technical Sketching and Drawing

Unit3: Measurement and Statistics

Unit4: Modeling Skills

Unit5: Geometry of Design

MIDTERM EXAM

Unit6: Reverse Engineering

Unit7: Documentation

Unit8: Advanced Computer Modeling

Unit9: Design Team

Unit10: Design Challenges

CUMULATIVE FINAL EXAM

Computer Usage Policy:

Every day you will be working on or around very expensive computing and electronics equipment. This requires a zero food/beverage policy. Failure to comply with this rule of any unsafe behavior in class will result in a 30% reduction of lab grade and/or loss of lab privileges.

Students must remember that the computer they use is not their personal computer. Students may not make any changes or adjustments to the computer environment. Changes include changing the background picture, and other settings on the computer, and/or downloading any material into the computer. Making changes or adjustments to the inside or outside of lab equipment is considered inappropriate usage and is grounds for immediate suspension from the lab and possible permanent removal from class accompanied by a loss of credit. This includes the playing of games (either pre-loaded on the computer, your USB drive, the network, or found on the internet), which is never allowed without prior approval from the teacher.

Classroom Website:

We have a classroom website where you can get a copy of the syllabus, schedule of daily assignments, reference attachments given in class, or access educational resources throughout the year. The site serves to help you succeed. It does not excuse you for writing down your homework assignments on a daily basis, being aware of key dates, or collecting documents issued in class:

<http://mrmenjivareclass.weebly.com/>

Laptop Cart Procedure

DISTRIBUTION OF THE LAPTOPS AND THEIR PROPER RETURN TO THE CART:

1. Mr. Menjivar will assign a laptop number to student(s) for the semester. Students will be required to check-out the laptop with the corresponding number from the laptop cart and return them to the cart in the assigned slot on a daily basis.
2. If a laptop is damaged, please contact Mr. Menjivar immediately. If not, it will be assumed as your damage. Do not use a damaged laptop.
3. If a laptop will not logon to the network, tell Mr. Conrad, then, restart the laptop. Make sure the wireless switch on the laptop is turned on. The “Wi-Fi” indicator on the laptop will be lit if the switch is on. If the restart did not cure the issue, let Mr. Menjivar know.
4. When student(s) are finished with the laptop, make sure they logoff and **SHUT DOWN** the laptop. Laptops that are not **SHUT DOWN** properly can result in future problems. **The laptop should be completely off before it is placed back on the cart.**
5. Please make sure each laptop is properly returned to the correct shelf on the cart.