



# Principles of Engineering

## 2015-2016



**Teacher:** Mr. Menjivar  
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**Room #:** H1  
**Conference:** 1st Period (7:45 AM – 8:36 AM)  
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Welcome to Principles of Engineering! I am very excited about this school year and have high expectations for the class. Through this course, you will find that engineering is not only interesting and exciting but also a lot less intimidating than you may have originally believed. Although it is heavily math and science oriented, with creativity and hard work, you'll find a lot of enjoyment in understanding the world around you and imagining the future you want to create.

Now at times you will find the material challenging, but I commit to work with you so that you can succeed. This doesn't mean you still won't have to:

- Help yourself by completing homework and studying. Practice!
- Seek help if you don't understand something. Do this during lecture, one-on-one at my desk, or feel free to email me. There are many resources online as well that can help guide you

Remember though that the goal is to promote your own creativity. Not to steal that of others.

**Grade Calculation:** Your grade will be calculated as follows:

Tests	30%	Quizzes	10%
Homework/Projects	50%	Class Work	10%

**Course Prerequisites:** In order to ensure the best opportunity for success in this class, there are several prerequisite courses that are recommended to be completed before or concurrent to Principles of Engineering:

- Introduction to Engineering Design (IED)
- Integrated Math I and II
- Chemistry
- Physics

**Lab partners:** Group size will vary depending on the nature of the lab and all partners will be determined by the instructor.

**Required Materials:** Students will be expected to be prepared for each class by bringing the necessary materials. This includes engineering notebook, pencil, pens (black or blue ink), ruler, a **flashdrive** (2 GB minimum capacity).

**Major Projects:** You will be expected to complete at least one major project every 9 weeks while in this class. The due dates for these projects are not flexible and will be given to you at the beginning of the project. Be aware that the project must be submitted on that date even if you are not present.

**Absences:** *It is the student's responsibility to get missed assignments after an absence.* The student should pick up any missed assignments and get lecture notes from a classmate. The student has one day to make up any work for each day that he/she was absent. This includes tests and labs. Use after school tutoring hours to complete missed labs and tests.

**Course Outline:**

1<sup>st</sup> 9 Weeks – Energy and Power

- Mechanisms
- Energy Sources
- Energy Applications
- Design Problem

2<sup>nd</sup> 9 Weeks – Materials and Structures

- Statics
- Material Properties
- Material Testing
- Design Problem

3<sup>rd</sup> 9 Weeks – Control Systems

- Machine Control
- Fluid Power
- Design Problem

4<sup>th</sup> 9 Weeks – Statistics and Kinematics

- Statistics
- Kinematics
- Design Problem

**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://mrmenjivarclass.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.