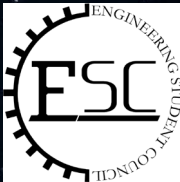




# Foothill High School Visit

Engineering Student Council at UCI  
Community Outreach





 **SPACEX**



# Engineering as a Whole



- Engineering is the application of math and science to solve real world problems
- Separated into 8 concentrations

Mechanical/Aerospace	Civil
Electrical	Chemical
Material Science	Biomedical
Environmental	Computer

# Mechanical/Aerospace



Mechanical Engineering is the study of maintaining, analyzing, designing and manufacturing machinery

Aerospace is similar but has a focus on aircrafts

- Design spaceship's aerodynamic body
- Create propulsion system
- Perform structural and thermal analysis





# Electrical



The study and application of electricity, electronics, and electromagnetism

- Design controls system
- Manufacture transmission and power systems
- Work with analog and digital system processing



# Civil



The practice of designing and developing infrastructure

- Design and construct Service Tower
- Ensure integrity of concrete foundation
- Construct lightning a verter towers





# Chemical



Produce, transform and transport materials to become usable and useful end products

- Select most efficient fuel
- Model combustion process
- Create paint textures

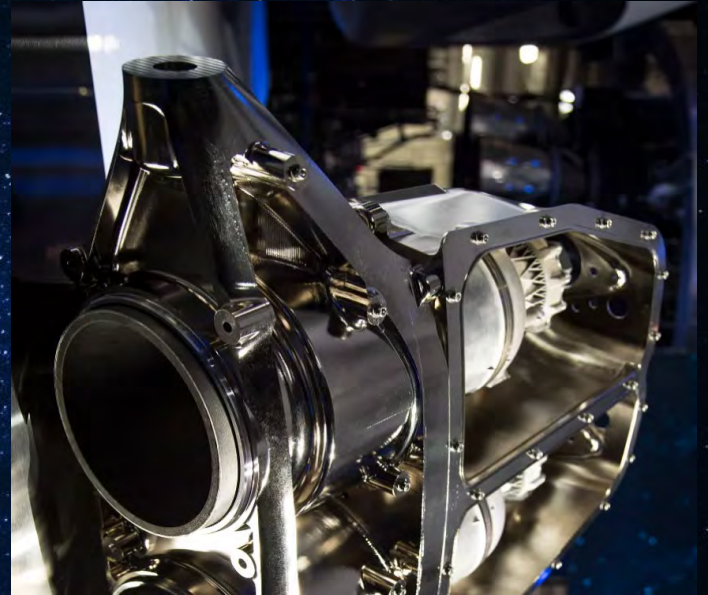


# Materials Science



The design and discovery of new materials and their properties, primarily solids

- Test/choose materials used that meet required specifications
- Develop machinery and processes to manufacture materials
- Think of new uses for known materials





# Biomedical



Biomedical engineering is the application of engineering principles in tandem with medicine and biology for healthcare products

- Design space suit for astronauts
- Involved in human interface components
- Determine amount of oxygen needed for mission



# Environmental



Protects and preserves the environment from human activities

- Perform electromagnetic compatibility tests
- Consider effects of space plasma and electric fields
- Analyze/minimize impact of emissions on environment





# Computer



Cross between engineering and computer science that designs and develops computer systems and other technological devices.

- Develop control systems software
- Focus on hardware implementation
- Set up communication with ground control





BLAST  
OFF!



# Tips and Advice



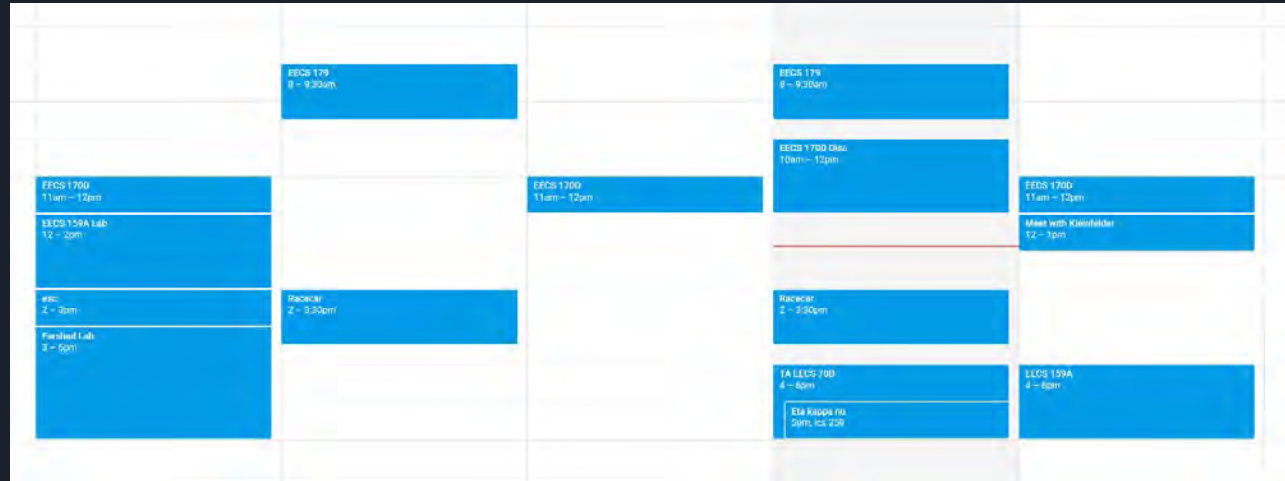
Major	Specific AP Classes
Aerospace	Statistics, Computer Science, Environmental Science
Biomedical	Biology, Chemistry
Chemical	Biology, Chemistry, Computer Science, Environmental Science
Civil	Computer Science, Environmental Science, Human Geography
Computer	Computer Science
Electrical	Chemistry, Computer Science, Environmental Science
Environmental	Biology, Chemistry, Environmental Science
Materials Science	Chemistry, Computer Science, Environmental Science
Mechanical	Biology, Chemistry, Computer Science
Software	Computer Science



What is engineering like?



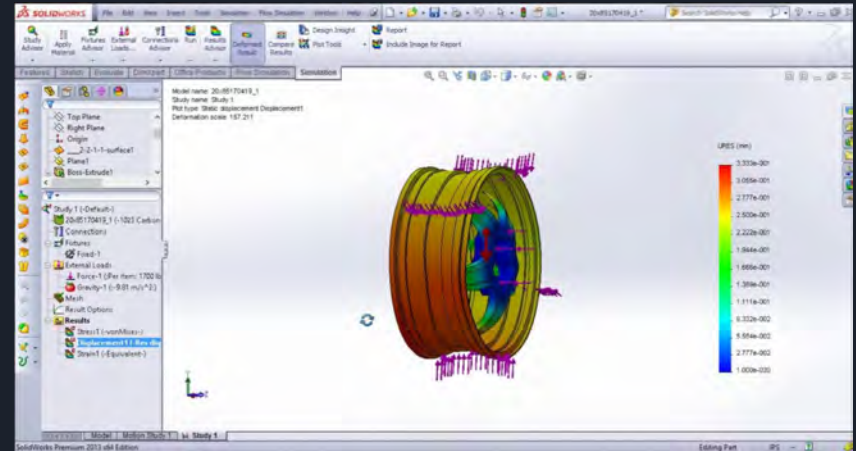
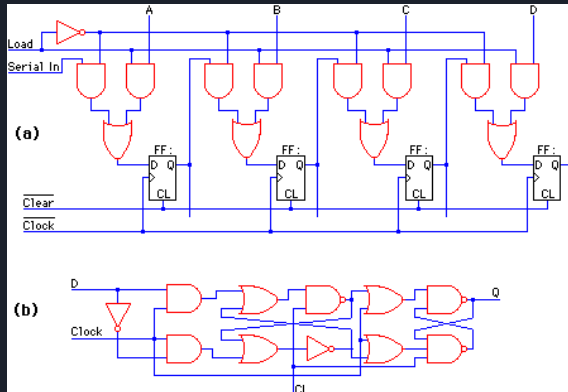
# Workload



- The workload will be challenging, but very manageable
- Learn how to spend your time wisely
- Anyone can be an engineer if they put in the effort

# Material

- At first the material you tackle in classes may seem overwhelming.
- Don't worry! Engineering takes a lot of time to understand and if you put in the time to study and learn it, it'll be a piece of cake.





# Projects

- One of the best parts of engineering is working on projects that you are passionate about.
- The UCI School of Engineering has over 30 different projects that you can join such as HyperXite, and Electric Racecar! You can also start your own if there isn't one on campus already.





# Thanks!

## Any questions?

You can find us at:

◇ [outreach.esc.uci@gmail.com](mailto:outreach.esc.uci@gmail.com)

