**Engineering careers discussion**

What is engineering? Applying the principles of math and science to solve problems, design things, and manage projects.

*Engineering is the application of science and math to solve problems. Engineers figure out how things work and find practical uses for scientific discoveries. Scientists and inventors often get the credit for innovations that advance the human condition, but it is engineers who are instrumental in making those innovations available to the world.*

What attributes should an engineer have?

* Curious about how things work
* Good with computers, math, science
* Ability to work with others in a team
* People skills, professional, friendly, not easily ruffled
* Listening, taking input from others, having a good attitude

What education for engineering?

* Bachelors degree. 4-5 years of college. Bach. of Science degree, or B.S.
* Examples: B.S. Mechanical Engineering, B.S. Electrical Engineering
* Option: Community College for 2 years, transfer to 4-year college. Saves money.
* High School classes: Biology, Chemistry, Physics. Calculus helps. All math classes are good in H.S.
* College sequence:
	+ 1st two years: laying the foundation.
	+ Years 3-5: specifics of your program.

Many career paths:

* Entry level engineer. Then lead a team. Then manage entire projects. Many engineers end up working in Business Development (sales, marketing). Many start their own companies after gaining experience.
* Many Fortune-500 business leaders have engineering degrees, and worked as engineers in their past.

What is Civil Engineering: Design big things. The Built Environment. Environment. Structural.

*Civil engineering is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including public works such as roads, bridges, canals, dams, airports, sewerage systems, pipelines, structural components of buildings, and railways*

What is Mechanical Engineering? Mechanical devices, cars, aircraft, gadgets of all kinds, medical devices

*Mechanical engineering is an engineering branch that combines engineering physics and mathematics principles with materials science to design, analyze, manufacture, and maintain mechanical systems. It is one of the oldest and broadest of the engineering branches.*

What is Electrical Engineering? Big things and small things. Circuits, semiconductors, the power grid

*Electrical Engineering is an engineering discipline concerned with the study, design and application of equipment, devices and systems which use electricity, electronics, and electromagnetism*

What is Aerospace Engineering? Aircraft and space design. Also good for Navy/Air Force career

*Aerospace engineering is the primary field of engineering concerned with the development of aircraft and spacecraft. It has two major and overlapping branches: aeronautical engineering and astronautical engineering. Avionics engineering is similar, but deals with the electronics side of aerospace engineering*

What is Chemical Engineering? Scaling-up chemical and biochemical processes

*Chemical engineering is a certain type of engineering which deals with the study of operation and design of chemical plants as well as methods of improving production. Chemical engineers develop economical commercial processes to convert raw material into useful products*

What is Computer Engineering / Computer Science?

**Computer engineering** is the branch of **engineering** that integrates electronic **engineering** with **computer** sciences. **Computer engineers** design and develop **computer** systems and other technological devices