Scientists discover the world that exists: engineers create the world that never was.”
Theodore Von Karman, Aerospace Engineer

Engineering is not science. Engineers generally don't "do" science. Science is about discovering the natural. Engineering is creating the artificial.

Engineering has been called the “invisible” or “stealth” profession. Everything around you and that you use every day has been engineered in some way, yet you may not see the engineers behind the scenes or know much about engineering.

You have math and science classes and both are basic to engineering. But, engineers take math and science from paper and the lab to to invent, design, and build things that matter. They are team players with independent minds who ask, “How can we develop a better recycling system to protect the environment, design a school that can withstand an earthquake, or create cutting-edge special effects for the movies?” By dreaming up creative and practical solutions, engineers are changing the world all the time.

Aerospace engineers design, analyze, model, simulate, and test aircraft, spacecraft, satellites, missiles, and rockets. Aerospace technology also extends to many other applications of objects moving within gases or liquids. Examples are golf balls, high-speed trains, hydrofoil ships, or tall buildings in the wind.

As an aerospace engineer, you might work on the Orion space mission, which plans on putting astronauts back on the moon by 2020. Or, you might be involved in developing a new generation of space telescopes, the source of some of our most significant cosmological discoveries. But outer space is just one of many realms to explore as an aerospace engineer. You might develop commercial airliners, military jets, or helicopters for our airways. And getting even more down-to-earth, you could design the latest ground and sea transportation, including high-speed trains, racing cars, or deep-sea vessels that explore life at the bottom of the ocean.

Agricultural engineers apply knowledge of engineering technology and science to agriculture and the efficient use of biological resources. In addition to creating advances in farming and agriculture, agricultural engineers apply engineering design and analysis to protecting natural resources, develop power systems to support agriculture, and provide environmental controls.

Most people take the sounds we hear every day for granted. But it may surprise you to learn that the creation of audio is a unique endeavor that blends both art and science. Did you ever stop to think how they created the sounds in a video game, or in a move, TV show or at a concert? There are literally thousands of different jobs available in this field that are as rewarding as they are challenging.

There are many career choices in the field of Audio Engineering. Perhaps you are a musician, are interested in electronics and sound, or like the idea of working with people who produce and perform in the many fields of entertainment. You will find challenging and fulfilling work in audio engineering.
Bioengineers study living systems and apply that knowledge to solve various problems. They study the safety of food supplies, keep desirable organisms alive in fermentation processes, and design biologically based sensors. Bioengineering is widely used to destroy wastes and clean up contaminated soil and water. These engineers contribute greatly to human health and the environment.

Biomedical Engineers study biology and medicine to develop technologies related to health care. They develop medical diagnostic machines, medical instruments, artificial organs, joint replacement parts, and prosthetic devices. Rapid advances in these areas will probably continue throughout your lifetime.

Ceramic and Materials Engineers solve problems by relying on their creative and technical skills - making useful products in many forms from common as well as exotic materials. Every day we use a multitude of these products. Each time we talk on the phone, use a computer, or heat food in a microwave oven, we are using products made possible by the inventions and designs of engineers working with ceramics and other materials.

Everything around us is made of chemicals. Chemical changes can be used to produce all kinds of useful products. Chemical Engineers discover and manufacture better plastics, paints, fuels, fibers, medicines, fertilizers, semiconductors, paper, and all other kinds of chemicals. Chemical Engineers also play an important role in protecting the environment, inventing cleaner technologies, calculating environmental impacts, and studying the fate of chemicals in the environment.

What would it feel like to have the expertise to build a school that could withstand an earthquake, a road system that puts an end to chronic traffic jams, or a sports stadium that offers everyone a great view? As a civil engineer, your job would be to oversee the construction of the buildings and infrastructure that make up our world: highways, skyscrapers, railways, bridges, and water reservoirs, as well as some of the most spectacular and high-profile of all engineering feats. Think of the world's tallest building, the towering Taipei 101 in Asia, or the Chunnel, the 31-mile-long tunnel beneath the English Channel. Civil engineers are fond of saying that it's architects who put designs on paper, but engineers who actually get things built.

Computer Engineering is the design, construction, implementation, and maintenance of computers and computer controlled equipment for the benefit of humankind.

Most universities offer Computer Engineering as either a degree program of its own or as a sub-discipline of Electrical Engineering. With the widespread use and integration of computers into our everyday lives, it's hard to separate what an Electrical Engineer needs to know and what a Computer Engineer needs to know. Because of this, several universities offer a dual degree in both Electrical and Computer Engineering.