

Team Number :

Location :

Career Readiness Challenge: Aerospace Engineering

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Our STEM Career: Aerospace Engineering



The STEM career that appealed to us the most was Aerospace engineering due to its impact on the world. Aerospace engineering is an important field that involves the design, research, development, and testing of aircraft and other related technology. In this field, engineers develop new technology that can be integrated and used in aerospace systems that are essential to us. This career intrigued us because aerospace engineering has a large

impact on our lives and is used for our daily transportation but similar technology is also used for spacecraft and defense applications. This shows that the field is essential for daily life and has many important scientific goals.

A career that is Aerospace engineering requires some important skills and prior knowledge to complete the job. Aerospace engineers will usually need a bachelor's degree in aerospace engineering to work in the field. The most advanced Aerospace engineers will require a Professional Engineer license. The requirements vary by state and area, to work in the field you will need an accredited engineering degree, work experience, and passing performance on both the Fundamentals of Engineering exam and the Professional Engineering Exam. There are also many important skills that are needed to be a successful Aerospace engineer. Some essential skills would be analytical skills, critical thinking skills, math skills, problem-solving skills, writing skills, engineering skills, and many more. They will use these skills constantly while working, their problem-solving skills would be needed to produce and create designs that must meet up to standards. They must use their education to create new designs and technology that will help them in their task and the overall field of Aerospace. Overall Aerospace engineering is a field that requires many important skills and some higher education to work in the field.

Our Inspiration



The aircraft to the left is SpaceShipOne, one of Burt Rutan's signature aircrafts

One of the most influential aerospace engineers who influenced us to learn more about aerospace engineering is Burt Rutan. Burt Rutan created the Rutan Voyager, the first aircraft to travel around the world nonstop. This achievement alone piqued our interest in the field and Burt Rutan himself. He designed the canard wing configuration, and canard airplanes are known to be much safer to fly and easier to control. He also designed SpaceShipOne, the first privately funded human spaceflight, which some consider the start of commercial spaceflight. His achievements in the field have earned him many awards, such as the British Gold Medal for Aeronautics and the 1933 Lloyd P. Nolan Achievement in Aviation Award. In an interview with Big Think, Rutan talks about how making breakthroughs is what he attributes his success to. He says that by trying new things, you can make breakthroughs that will help you succeed. He also talks about how complexity isn't necessarily good, and that simplicity is important in finding breakthroughs and creating affordable designs.

How has VEX Robotics Prepared Us For This Field?

Our involvement in competitive robotics is preparing and helping us understand the field of Aerospace engineering. The field of Aerospace can be applied and used for technology that is being used on a normal basis, this technology is also used in competitive robotics. In order to understand competitive robotics, we have to understand the components that could be used to build robots. Some of these basic components could also be used in Aerospace engineering. Having an understanding of basic robotics parts is preparing us to succeed in the Aerospace field because we are learning the parts and applications that could be used. The engineering design process that is applied during VEX Robotics can also be used in Aerospace engineering. Engineers in this field use the engineering design process very often to find a solution for the problem at hand. Overall our participation in competitive robotics is preparing us for the field of Aerospace.

Future Evolution

We believe that aerospace engineering is a field that will continue to grow and evolve over the next decade in response to global crisis and new ideas. Due to the Covid-19 pandemic, normal life has changed drastically, but the aerospace field can still have major impacts. Technology such as drones promotes social distancing and allows people who are unable to leave their homes to receive deliveries. Large shipment aircraft can quickly deliver goods across the world, bringing goods and medical supplies to places in need of them. Aerospace engineers have put their own skills to use, creating software and websites which help people in need get help from local volunteers or organizations. Aerospace companies are employing their technology to create face shields and ventilators for hospitals. After the pandemic, global travel demands will skyrocket, and aerospace engineering will meet these demands with increased air travel. Outside of global crises, new ideas will spark innovation and evolution in the field. Commercial spaceflight is a growing industry that has started to change the field drastically. Space mining and private space research are other ventures which bring more possibilities to the aerospace career. The outlook of aerospace engineering is bright, with current global issues and new ideas changing the field for the better.



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