



Aerospace Engineering

Aerospace Engineers are responsible for making aircrafts and spacecraft.

They contribute the commercial plane that are used by civilians to travel from state to state or country to country.

Salary Range: \$67,220- \$115,220

Demand: California, Texas, Alabama, Ohio

In the next 20 year the job will be very advance, bring new technology to aircrafts and space crafts to people all across the world.

Career Report

Communication Skills

In the engineering field having communication is key to your success. This part of the engineering you will be most of the time working with a group of people, so your communication skills have to on point if you going into the Aerospace field. Communication helps you get ideas out your teammates and helps you understand what needs to be done.

Time Management

Time management is also a key skill to being an Aerospace Engineer. Knowing how to manage your time can help you in many ways in this field. Time management can help you get a project done faster and help you understand what needs to be done and how long it is going to take

Problem Solving

As a Aerospace Engineer you have to be able to solve a problem quick and efficient. Problem solving helps you understand know how to handle the situation at hand

Awareness

Awareness in this track of engineer is very vital. An engineers awareness of a situation is crucial because you have to pay attention and understand what you are doing in order to succeed as a Aerospace Engineer.

Creativity and innovative thinking

- When working as a Aerospace engineer you have to be creative in order to great at what you do. Having creative and innovative thinking is when you can be able to create or improve anything by brainstorming new ideas.

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Career History Summary and Timeline



December 17, 1903 **Wright Brothers**

On December 17, Orville and Wilbur Wright make the first successful flight in a self-propelled airplane.



June 11, 1926 **Tin Goose**

On June 11, the Ford Trimotor made its first flight. Known as the "Tin Goose," the plane was a high-wing monoplane with all-metal construction and a corrugated skin. The Trimotor became a workhorse for U.S. airlines and remained in production until 1933.



August 11, 1926 **William P. MacCracken Jr.**

On August 11, William P. MacCracken, Jr. (left), took office as the first assistant secretary of commerce for aeronautics. He became the first head of the Aeronautics Branch, created in the Department of Commerce by Secretary Herbert Hoover to carry out the Secretary's responsibilities under the Air Commerce Act of 1926.



September 18, 1928 **Graf Zeppelin**

On September 18, the Graf Zeppelin, the most successful rigid airship ever built, first flew. By the time it was retired in 1937, this craft had flown more than a million miles, spent 16,000 hours in the air, and carried 13,100 passengers.

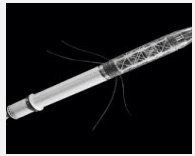


July 6, 1936 **Federal air traffic control begins**

On July 6, federal air traffic control began as the Bureau of Air Commerce took over operation of the three airway traffic control stations at Newark, Chicago, and Cleveland. When the Bureau assumed control of the centers, it hired fifteen center employees to become the original Federal corps of airway controllers.

Your Logo or Name Here

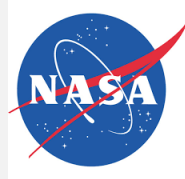
Career History Summary and Timeline



January 31, 1958

Explorer I

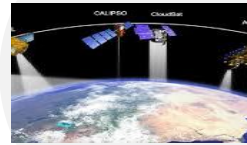
On January 31, the United States successfully launched Explorer I, the first U.S. earth satellite



October 1, 1958

Nasa

On October 1, the National Aeronautics and Space Act of 1958 established the National Aeronautics and Space Administration (NASA).



March 29, 1967

Nasa orbiting satellite

On March 29, FAA participated in NASA's first public demonstration of a new data-link system using an orbiting satellite for transmitting navigation data from aircraft to ground stations.



July 4, 1982

Commercial Space

On July 4, following a ten-month interagency review, President Reagan issued a decision directive stating that expansion of U.S. private sector involvement in civil space activities was a national goal.



June 14, 2012

En route automation modernization (ERAM) system

On June 14, FAA decommissioned the four-decades-old HOST computer system at the Seattle and Salt Lake City ARTCCs and replaced the system with the en route automation modernization (ERAM) system.

Your Logo or Name Here



Unit Application

- **What is considered the contemporary definition of engineering?**the art or science of making practical application of the knowledge of pure sciences, as physics or chemistry, as in the construction of airplanes, bridges, buildings, mines, ships, and chemical plants.
- **What are the education requirements for engineering occupations and locations where programs of study are available?** Aerospace Engineers require at least a Bachelor's degree to enter the field, typically in aerospace engineering.
- **What are some examples of engineering job titles? Describe their qualifications and responsibilities?**
Aerospace Engineering- they construct and make airplanes and spacecraft
- Mechanical Engineering- they construct and make parts and machinery such as Refrigerators and microwaves.
- **What activities are related to engineering careers?** Civil engineering, aerospace engineering, mechanical engineering, Computer-hardware engineering
- **How does each engineering discipline relate to the green environment and sustainability?** They all help each one get to a certain point and they all help each other expand the knowledge of technology to help innovate and advance itself which can help the environment help stop more pollutants and stop harm from being done to the ecosystem

Unit Application

How did engineering develop throughout history? Throughout engineering has been innovated and formed into new and more advanced technology today

What impact does society have on technological processes, products, and/or systems? What impact does economics? What impact does the environment? It has a great effect and it helps put the economy in better shape for the future

How has technology influenced history and shaped contemporary issues? Aerospace Engineers require at least a Bachelor's degree to enter the field, typically in aerospace engineering.

What is the relationship between the STEM cluster/s and society? They both tie into each helping support. Stem teaches people in society and help make and innovate new technologies.

What impact do science and society have on products and processes used in the world for technological development? Science help discover new things about the earth and technology helps with advancing the sciences that are theorized

What hands-on research and lab experiments require STEM knowledge and skills can be used to analyze and suggest solutions to human societal problems? Describe. When you start building or doing big projects that's when the knowledge and problem solving has to offer to the human society.

How can STEM knowledge and skills be applied in hands-on research and lab experiments? Soft skills and knowledge skills and problem solving can be applied in hands-on research and lab experiments

Unit Application

- 1. What are the workplace and product safety standards set by OSHA? EPA? ISO? GMP? UL? EPA and OSHA have the statutory responsibility to ensure the safety and health of the public and America's workforce through the timely and effective implementation of a number of federal laws and implementing regulations.**
- 2. What are some safety signs, symbols, and labels used in the STEM workplaces? What do they mean?** Designed with industrial safety programs in mind, our durable ANSI and OSHA signs and come in a variety of materials, colors, sizes, and styles, including Machie Hazard, Chemical Hazard, Confined Space: Construction, scaffold and Mining, safety signs, and many others.
- 3. How are safe laboratory procedures used in the lab? Shop? And field environments? You must follow all the procedures carefully and you must pay attention**
- 4. How can the lack of incorporation or lack of safety practice in STEM workplaces impact the economy and costs of safety in business and industry?** Buisnesses can fail and cause the economy to decrease and hurt the economy
- 5. What are some Personal Protective Equipment (PPE)? How are they selected and used to follow work area organization procedures? How are they used to follow Standard Operating Procedures (SOP) when performing work?** Goggles, Lab jackests, Gloves , they can help protect people and they are used always for pretecton

Unit Application

1. **What some tools that are used in STEM workplaces? What are some machines that are appropriate in STEM workplaces? What are they used for?** Soft skills, New technologies, Problem solving, Knowledge skills
2. **How can tools and machines be used safely in the STEM workplace?** Using procedures and rules in order to have organization
3. **What are precision tools used to measure and convert units? Precision instruments used to convert units?** Measuring tapes, Rulers, Engineering rulers
4. **What is the design process used to develop computer hardware? What is the design process used to compose computer software?** The design process helps setup organization and it has a systems
5. **What are proper maintenance techniques used for tools? For machines? For hardware?** The design Process

Unit Application

How is cause and effect involved during a project or issue? In a project the cause and effect demonstrates the process

2. What attributes are measurable in units? Objects? Systems? Processes? The size and shape and the amount of the projects

3. How is data from problems organized? How are consequences from problems organized? How can each two be placed in manageable formats? It it organized by a process or a system such as the design process

4. How are outcomes predicted based on data collected in a project or experiment? By the conclusions and the observations

5. What is considered quality collection of facts? What are data supporting plans? Reaserch

6. What's the best way to draw a conclusion when confronted with data or observations? By the outcomes of the experiment

7. How does change result from data differences and changing environmental values? Sometimes the value of the environment is very different from the data and statistics

8. What are some qualitative skills that can be used to conduct a simple scientific inquiry and economic analysis? What are some quantitative skills that can be used? How can they be used to draw conclusions?

Soft skills

9. What is reiterative process? How is used to improve date? Improve the design process? By organizing to make it more advance or to innovate it

Unit Application

What science concepts and principles can be applied to resolve plans, projects, processes, issues, or problems? What mathematics concepts and principles can be applied? Scientific Method

2. What are the protocols in science related to technical or engineering problems/activities to produce solutions? What are the protocols in mathematics? Stem reaserch is a protocal for scientific protocal

3. What is the role of modeling in science and engineering? What is the role of simulation? More generally, modeling and simulation is a key enabler for systems engineering activities as the system representation in a computer readable model enables engineers to reproduce the system behavior

4. What is inquiry relating to an engineering issue/problem? What is resolution as it relates to engineering issues/problems?one of the principal goals of science education has been to cultivate students' scientific habits of mind, develop their capability to engage in scientific inquiry, and teach them how to reason in a scientific context . There has always been a tension, however, between the emphasis that should be placed on developing knowledge of the content of science and the emphasis placed on scientific practices. A narrow focus on content alone has the unfortunate consequence of leaving students with naive conceptions of the nature of scientific inquiry and the impression that science is simply a body of isolated facts.

5. How does quality collection of facts help to defend solutions? How does data supporting plans, processes, and/or projects help? It helps show organization of the process

Unit Application

What are some examples of STEM fields? How do engineering and other technologies differ in these STEM fields? Engineering jobs and healthcare jobs and sciences jobs

Resources

- <https://www.faa.gov/about/history/timeline/w.faa.gov/about/history/timeline/s://www.faa.gov/about/history/timeline/>
- <https://www.iste.org/explore/Toolbox/5-STEM-tools-you-can-use-for-any-subject>
- easyscienceforkids.com/aerospace-engineer/
- <https://www.bls.gov/ooh/architecture-and-engineering/aerospace-engineers.htm>
- <https://www.britannica.com/technology/aerospace-engineering>