



AEROSPACE ENGINEER



JOB DESCRIPTION

Aerospace engineers design, build, and maintain a range of aircraft and spacecraft, from passenger airliners and military jets to satellites and space vehicles. In this role, you might work on the parts that make up the aircraft's fuselage, wings, or undercarriage, or the instruments and electronic systems that enable the pilot and crew to operate the craft.

SALARY

Junior aerospace engineer ★★★★★

Senior aerospace engineer ★★★★★

INDUSTRY PROFILE

Global opportunities • Diverse industry shaped by technological advances • Jobs in aircraft manufacturing firms, airline operators, armed forces, and government research agencies

RELATED CAREERS

- ▶ **MECHANICAL ENGINEER** *see pp. 182–183*
- ▶ **ELECTRICAL ENGINEER** *see pp. 186–187*
- ▶ **DESIGN ENGINEER** Works in a range of industries, developing ideas for the design of new products and researching ways to improve existing ones.

The US aerospace and defense industry employs more than one million people across the country.

AT A GLANCE



YOUR INTERESTS Aviation, aircraft, and flight technology • Mathematics • Physics • Information Technology (IT) • Engineering • Chemistry • Robotics



ENTRY QUALIFICATIONS A degree in aerospace engineering or similar, such as mechanical engineering or physics, is a minimum requirement.



LIFESTYLE Working hours are regular, but evening or weekend work may be necessary to meet project deadlines, or to deal with repairs and emergencies.



LOCATION Engineers usually carry out design work in an office, but may also visit aircraft hangars, production sites, or aeronautical laboratories.



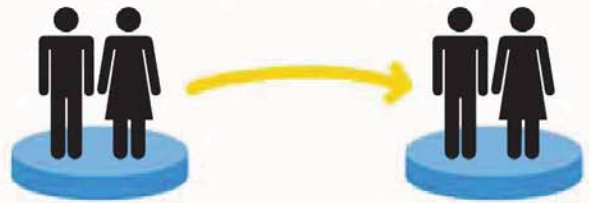
THE REALITIES The job bears great responsibility as the work has a direct impact on the functioning of aircraft and the safety of passengers and crew.

CAREER PATHS

Aerospace engineering offers good prospects for career development. Specializing in a particular area—such as astronautics—is common, and training courses to improve professional skills are possible throughout one’s career.

TRAINEE You can find work as an aerospace technician or trainee apprentice without a degree, but further qualifications are required to become an engineer.

GRADUATE You need an aerospace-engineering or related degree to become an aerospace engineer. Many firms offer graduate training programs.



AEROSPACE ENGINEER In this sector, you may specialize in research and development, aircraft systems testing, or maintenance and production. You can advance into senior project management positions or specialize in a particular technical area, such as aerodynamics or aircraft engines.



ROTORCRAFT ENGINEER
Designs and develops helicopter components such as engines, electrical systems, and blade technology.



ASTRONAUTICAL ENGINEER Specializes in the research, design, and development of vehicles for space exploration, including rockets and satellites.



AVIONICS AND SYSTEMS ENGINEER Designs electronic equipment used in civil and military aircraft, such as flight-control and weapon-combat systems.



AERODYNAMICIST
Researches the effect of airflow on the speed and performance of vehicles in order to improve stability and fuel-efficiency, and reduce the environmental impact of aircraft.



MATERIALS AND STRUCTURES ENGINEER Designs and builds the body and framework of an aircraft, before testing it to ensure that the structure is strong and durable.

SKILLS GUIDE



Excellent verbal and written communication skills to explain complex designs clearly.



The ability to work in a team to coordinate the designs for the numerous parts of an aircraft.



Creativity and innovation to develop designs in keeping with technological advances.



Good problem-solving skills for finding effective solutions to technical design issues.



The capacity to use advanced mathematical methods to assist designing and problem-solving.