

Aerospace Engineering: A Study on How These Technologies Interact

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EDITORIAL

Aerospace engineering is the branch of engineering that deals with the design of planes and spacecraft. Aeronautical engineering and astronautical engineering are two important fields that overlap. Avionics engineering is related to aeronautical engineering, except it focuses on the electronics side of things. The phrase "aeronautical engineering" was first used to describe the field. The larger phrase "aerospace engineering" has come into use as flying technology has improved to incorporate vehicles operating in space. Aerospace engineering, particularly the astronautics branch, is referred to as "rocket science" by many people. Flight vehicles are subjected to rigorous conditions, such as variations in atmospheric pressure and temperature, as well as structural pressures on vehicle components. As a result, they are frequently the result of a combination of technological and engineering disciplines, such as aerodynamics, propulsion, avionics, materials science, structural analysis, and production. Aerospace engineering is the study of how these technologies interact. Aerospace engineering is carried out by teams of engineers, each with their own specific field of knowledge, due to the complexity and number of disciplines involved. Although Sir George Cayley's work dates from the last decade of the 18th century to the mid-19th century, the origins of aerospace engineering may

be traced back to aviation pioneers in the late 19th and early 20th centuries.

Cayley is credited as the first person to separate the forces of lift and drag, which affect any atmospheric flight vehicle. He is one of the most influential figures in the history of aeronautics and a pioneer in aeronautical engineering. Aeronautical engineering knowledge was mostly empirical in the beginning, with some concepts and abilities acquired from other fields of engineering. Some fundamental components, such as fluid dynamics, were understood by scientists in the 18th century. The Wright Brothers accomplished the first prolonged, controlled flight of a powered, heavier-than-air aircraft in December 1903, lasting 12 seconds. Great strides were made in the sector between World Wars I and II, aided by the introduction of mainstream civil aviation. The Curtiss JN 4, the Farman F.60 Goliath, and the Fokker Trimotor are among notable aeroplanes from this era. The Mitsubishi A6M Zero, the Supermarine Spitfire, and the Messerschmitt Bf 109 from Japan, the United Kingdom, and Germany, respectively, are notable military aeroplanes from this period. The first operational jet engine-powered aeroplane, the Messerschmitt Me 262, entered service in 1944, near the end of WWII, and was a notable achievement in aerospace engineering. In February 1958, the first definition of aerospace engineering was published.

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