

Aerospace: How Aeronautics and Astronautics are Defined – Physics Discussion

A Brief Introduction to Physics

Physics? Is this crazy woman going to really be discussing physics with you? Yup, as much as I hate doing math (in any form – especially the complicated methods), within the last blog, I did happen to mention physics quite a bit. While not only presumptuous of me to presume everyone out there knows what physics is, it would help others to clarify a few things.

Physics is a natural science that studies matter and its motion and conduct through space and time, including the analyses of the related entities of energy and force. In other words, the goal of physics is to understand how the universe behaves. Yes! Laymen terms.

Because physics is a natural science, it is therefore a branch of fundamental science, not practical (or applied) science. Why? Because all divisions of natural science are constrained by the laws of physics. The definition of natural philosophy is: “the systematic study of nature and the physical universe, excluding those things made by humans.” Thereby, this puts physics squarely within natural philosophy.

There are two areas of physics known today: classical and modern. Classical physics are those branches such as classical mechanics, dynamics, and electromagnetism. The key historical figures within classical physics are Aristotle, Galileo Galilei, and Isaac Newton. Modern physics include Albert Einstein’s theory of relativity.

Astronomy

Astronomy has been studied since ancient times. From astronomy, a medieval Islamic scientist named Ibn al-Haytham wrote a book called The Book of Optics. Within, he discussed a study he made of a camera obscura (or an ancient pinhole camera) and later goes into detail on how the eye works. Of course, he was not able to discuss how light is projected to the back of the eye (something not discovered and discussed until the 1600s). But later telescopes were built on the initial premise of his work.

So, there you have it – physics in a nutshell. Wipe your brow and let out your held breath. The basics are done ... for now.