Aerospace Engineer

**Industry Demand of Aerospace Engineer**

* Aeronautical: The rapid growth of passengers and cargo pushes the limits of current technology. So, many companies are starting to look into something radical, innovative, etc. From the propulsion systems, new airframes to the wing designs, a lot of aeronautical engineers are needed. Eventually, most of transportations will be airborne, hence the aerospace sector will be growing rapidly in the couple of years.
* Astronautical: Humanity has always been interested in exploring the stars thus investments in better ways of space transportation and exploration is always growing. So astronautical companies like SpaceX, Blue Origins, Rocket Labs will increase their demand to test many methods to improve their rockets which means more and more aerospace engineers are needed. Aside from space exploration, expertise in installing satellite modules for telecommunications is always needed.

**Average Salary**

* Entry Level Salary in the United States: $ 69,000/Year
* Mid Career Salary in the United States: $ 116,000/Year
* Average Salary in Indonesia: Rp 196.000.000,00/Year

**Core Tasks**

* Maintaining aircraft (engines, airframe, avionics, control systems)
* Working on Research & Development for new aerospace technology. R&D can be further divided to Propulsion, Airframe Design, Avionics, Control systems, Stability, and Reliability
* Managing activities related to the development, production, and maintenance of airborne vehicles, which involves collaborating with technicians, clients, managers etc.

**Working Conditions**

* Usually work Indoors though sometimes needed to travel outside to project sites.
* Could be exposed to loud noises and dangerous working hazards.
* While working hours are usually normal, some aerospace engineers maybe place “on call” and thus be required to come to work on unusual times to help with emergency repairs and sudden accident investigations.

**Skills Required**

* Matlab
* ANSYS
* SolidWorks
* Fusion360
* CATIA
* Problem Solving Skills
* Communication Skills

**Career progression data**

* Pathways :
  + Earn a bachelor degree in Aerospace Engineering/ Mechanical Engineering/Physics
  + Earn a masters degree in related degree which does not necessarily have to be engineering (Business, Math etc)
  + Can be promoted further to Head of Research
  + Can become an independent consultant further in the career
* To become a biomedical engineer, a bachelor’s degree is enough though further education (masters) can increase pay.

**Possible University Major**

* Aerospace Engineering
* Mechanical Engineering
* Physics

**School subjects required**

○ Math (Calculus I)

○ Physics (Newtonian Mechanics)