AEROSPACE ENGINEER

ALSO KNOWN AS: AERONAUTICAL SYSTEMS ENGINEER

SOAR TO NEW HEIGHTS AND PROPEL YOUR CAREER INTO THE STRATOSPHERE.

Soar to new heights and propel your career into the stratosphere as an Aerospace Engineer, where the sky is not the limit, but just the beginning!

KEY SKILLS

Skills which may benefit anyone considering a job as a aerospace engineer include:

- Advanced mathematics
- CAD software proficiency
- Problem solving
- Project management
- Technical drawing and interpretation

VALUES & ATTRIBUTES

Values and attributes of anyone considering a job as a aerospace engineer include:

- Attention to detail
- Innovative
- Safety-conscious
- Adaptable
- Passionate
- Investigative – "Thinker"

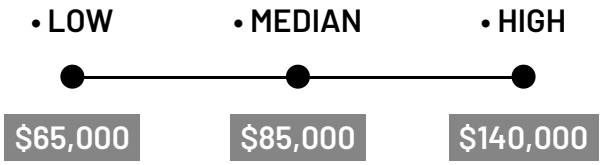
CAREER PROGRESSION

In this role, you may have the opportunity to progress to other positions. Career progression opportunities include:

- Chief Executive Officer
- Supply Chain Manager
- Chief Operating Officer
- Chief Financial Officer

SALARY EXPECTATION

The expected salary for an Aerospace Engineer can vary across different areas of manufacturing and may vary as you become more experienced.



RELATED INDUSTRIES

▸ Aerospace and Defence ▸ Transport Equipment and Machinery

RECOMMENDED SCHOOL SUBJECTS

• Design • Engineering Skills • Mathematical Methods • Physics • Specialist Mathematics

CORE SCHOOL SUBJECTS

• General Mathematics • Essential English • Engineering • Aerospace Systems

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JOB OVERVIEW

Aerospace Engineers are at the forefront of aviation and space technology, designing, developing, and testing aircraft, spacecraft, satellites, and missiles. They work on cutting-edge projects that push the boundaries of human exploration and technological advancement.

Aerospace Engineers utilise a wide array of sophisticated equipment in their daily work. They frequently use wind tunnels for aerodynamic testing, computer-aided design (CAD) software for 3D modelling, and advanced simulation tools for virtual prototyping. A typical day might involve analysing test data from a recent wind tunnel experiment, collaborating with materials scientists on lightweight alloy development, and attending project meetings to discuss design modifications for a new commercial airliner. These professionals might work on diverse projects ranging from designing more fuel-efficient jet engines and quieter helicopter rotors to developing guidance systems for satellites and conceptualising Mars rovers for space exploration missions.

These innovative professionals combine their expertise in aerodynamics, propulsion, materials science, and structural analysis to create vehicles and systems that can withstand the extreme conditions of flight and space travel. From commercial airliners to interplanetary probes, Aerospace Engineers play a crucial role in shaping the future of transportation and space exploration.

WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design and develop aerospace vehicles and systems
2. Conduct aerodynamic and structural analyses using advanced software
3. Oversee the manufacturing and testing of aerospace components
4. Investigate and troubleshoot aircraft and spacecraft malfunctions
5. Collaborate with multidisciplinary teams to integrate various systems

HOW TO BECOME A AEROSPACE ENGINEER

Employers in the aerospace industry typically look for candidates with a strong educational background and relevant experience. To become an aerospace engineer, you typically require a bachelor's degree in a relevant field. Here are the steps to secure a job as an Aerospace Engineer:

1. Earn a bachelor's degree in engineering majoring in aerospace engineering or a related field
2. Apply to work as an intern, or directly with an employer
3. Develop a strong portfolio showcasing your projects and skills
4. Continue to grow your networks within the industry

REGISTRATION

Once you have industry experience with an employer, you may be able to seek registration as an engineer. Learn more and explore the Engineers Australia's National Engineering Register (NER) and Board of Professional Engineers.

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VOCATIONAL EDUCATION & TRAINING

While most Aerospace Engineering positions require a bachelor's degree, there are some entry-level technician roles that can be accessed through vocational education.

Some companies offer apprenticeships for specialised roles, these qualifications include:

- Certificate IV in Aeroskills (Mechanical) (MEA40718)
- Certificate IV in Aeroskills (Avionics) (MEA40618)
- Certificate IV in Aeroskills (Structures) (MEA41222)
- Certificate IV in Aeroskills (Armament) (MEA41222)

Higher level vocational education and training can also offer foundation skills, and entry pathways to university. These qualifications include:

- Diploma of Aeroskills (Avionics) (MEA50118)
- Diploma of Aeroskills (Mechanical) (MEA50219)
- Diploma of Aeroskills (Non-Destructive Testing) (MEA50522)
- Diploma of Aviation Maintenance Management (MEA60222)

UNIVERSITY & HIGHER EDUCATION

Many universities offer cooperative education programs that combine classroom study with practical work experience in the aerospace industry. To become an Aerospace Engineer, you typically need:

- A bachelor's degree in engineering with a major in aerospace
- Some positions may require or prefer a master's degree in engineering or a related field
- Ph.D. for research and development positions or university teaching roles

In addition to formal education, aspiring Aerospace Engineers should focus on developing a strong foundation in mathematics, physics, and computer science. Courses in aerodynamics, propulsion, structures, and flight mechanics are crucial. Many programs also offer specialisations in areas such as astronautics, avionics, or unmanned aerial vehicles (UAVs). Participating in aerospace-related projects, competitions, or internships can significantly enhance your skills and employability. Some universities have partnerships with aerospace companies or government agencies, providing students with unique opportunities for hands-on experience and networking.

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