

ADDITIVE ENGINEER

ALSO KNOWN AS: **ADDITIVE MANUFACTURING ENGINEER** **DIGITAL FABRICATION ENGINEER** **RAPID PROTOTYPING ENGINEER**

3D PRINTING SPECIALIST

TAKE YOUR PLACE IN THE DYNAMIC WORLD OF ADVANCED MANUFACTURING.

Additive Engineers are building the future layer by layer. They harness cutting-edge 3D printing technologies to create objects that were once thought impossible, revolutionising product development and manufacturing processes.

KEY SKILLS

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

- ✔ 3D modelling
- ✔ CAD software proficiency
- ✔ Materials Science
- ✔ Problem solving
- ✔ Process optimisation

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 Engineering Officer

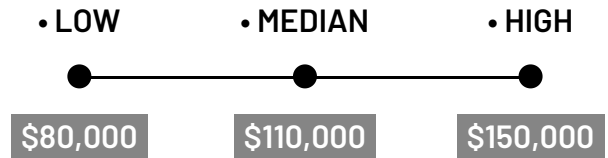
VALUES & ATTRIBUTES

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

- ✔ Innovative
- ✔ Precision
- ✔ Adaptable
- ✔ Curious
- ✔ Attention to detail
- ✔ Investigative – “Thinker”

SALARY EXPECTATION

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



RELATED INDUSTRIES

- ▶ Aerospace and Defence
- ▶ Chemicals, Hydrocarbons and Refining
- ▶ Food and Beverage
- ▶ Furniture and Other Products
- ▶ General Manufacturing and Engineering
- ▶ Meat and Seafood Processing
- ▶ Pharmaceutical and Medical Technology
- ▶ Polymers, Plastic and Rubber
- ▶ Printing and Graphic arts
- ▶ Pulp, Paper and Packaging
- ▶ Renewables
- ▶ Textiles, Clothing and Footwear
- ▶ Timber and Wood
- ▶ Transport Equipment and Machinery

RECOMMENDED SCHOOL SUBJECTS

- Design
- Digital Solutions
- Engineering Skills
- Mathematical Methods
- Physics
- Specialist Mathematics

CORE SCHOOL SUBJECTS

- General Mathematics
- Essential English
- Biology
- Chemistry
- Engineering

JOB OVERVIEW

Additive Engineers specialise in the design, development, and implementation of 3D printing and additive manufacturing processes. They work across various sub-industries, from aerospace and automotive to healthcare and consumer products, transforming how we create complex parts and prototypes.

In their daily work, Additive Engineers might be found designing 3D models, optimising printing parameters, or researching new materials and techniques. They use a wide range of software tools, from CAD programs to specialised additive manufacturing simulation software, and work with various 3D printing technologies such as fused deposition modelling (FDM), selective laser sintering (SLS), and metal powder bed fusion.

The role of an Additive Engineer requires a unique combination of engineering knowledge, creativity, and problem-solving skills. They must understand the principles of materials science, mechanical engineering, and digital design, as well as have the ability to translate complex designs into printable objects while considering factors like structural integrity, material properties, and manufacturing efficiency.

WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design and optimise 3D models for additive manufacturing
2. Develop and implement additive manufacturing processes and workflows
3. Research and test new materials and printing technologies
4. Troubleshoot printing issues and improve print quality
5. Collaborate with design and engineering teams to integrate additive manufacturing into product development

HOW TO BECOME A ADDITIVE ENGINEER

Becoming an Additive Engineer typically requires a strong background in engineering, often with specialised knowledge in additive manufacturing technologies. Here are the steps to become an Additive Engineer:

1. Earn a bachelor's degree in mechanical engineering, materials science, or a related field
2. Gain proficiency in CAD software and 3D modelling techniques
3. Pursue specialised courses or certifications in additive manufacturing
4. Gain practical experience through internships or projects involving 3D printing
5. Research potential employers, look online for advertised jobs. Even if a job isn't advertised consider sending a resume and letter to an employer to show interest.
6. Stay updated with the latest advancements in additive manufacturing technologies and materials

VOCATIONAL EDUCATION & TRAINING

While many Additive Engineer positions require a university degree, there are vocational education and training options that can provide valuable skills and knowledge in 3D printing and additive manufacturing:

- Certificate IV in Engineering (MEM40119)
- Diploma of Engineering – Technical (MEM50222)
- Diploma of Engineering – Prototyping (MEM50622)
- Advanced Diploma of Engineering (MEM60122)

These courses can provide hands-on experience with 3D printing technologies and CAD software, which can be valuable for those entering the field or looking to enhance their skills in additive manufacturing.

UNIVERSITY & HIGHER EDUCATION

A university degree is typically required for Additive Engineer positions, with most employers preferring candidates with a bachelor's degree in mechanical engineering, materials science, or a related field. These programs provide a strong foundation in engineering principles, materials properties, and design methodologies, which are essential for understanding and implementing additive manufacturing technologies.

For those looking to specialise in additive manufacturing or advance their careers, postgraduate degrees such as a Master of Engineering with a focus on additive manufacturing or a Ph.D. in materials science or mechanical engineering can be beneficial. These advanced programs often involve in-depth study of additive manufacturing processes, materials development for 3D printing, and advanced design for additive manufacturing.

Many universities also offer specialised courses or certifications in additive manufacturing, which can be valuable for professionals looking to gain expertise in this rapidly evolving field. These programs often cover topics such as design for additive manufacturing, process optimisation, quality control in 3D printing, and the latest advancements in additive manufacturing technologies.