

PATTERN MAKER (ENGINEERING)

ALSO KNOWN AS: **MOULD DESIGNER** **FOUNDRY PATTERNMAKER** **MODEL MAKER**

SHAPE THE FOUNDATIONS OF MANUFACTURING AS A PATTERN MAKER.

This specialised role involves creating the patterns and models that are essential for producing cast metal parts. Your skills will be crucial in translating design concepts into the physical forms that enable the production of complex components for various industries.

KEY SKILLS

Skills which may benefit anyone considering a job as a pattern maker (engineering) include:

- ☑ CAD software proficiency
- ☑ Material knowledge
- ☑ Precision
- ☑ Problem solving
- ☑ Spatial visualisation

CAREER PROGRESSION

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

- Mechanical Engineering Supervisor
- Technical Manager
- Business Manager
- Production Planner

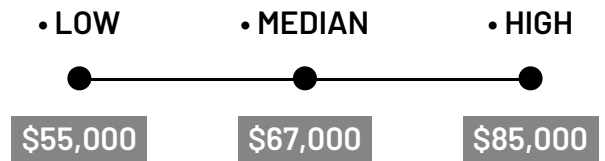
VALUES & ATTRIBUTES

Values and attributes of anyone considering a job as a pattern maker (engineering) include:

- ☑ Attention to detail
- ☑ Creativity
- ☑ Patience
- ☑ Adaptable
- ☑ Quality-focused
- ☑ Artistic - "Creator"

SALARY EXPECTATION

The expected salary for a Pattern Maker (Engineering) can vary across different areas of manufacturing and may vary as you become more experienced.



RELATED INDUSTRIES

▶ Aerospace and Defence ▶ General Manufacturing and Engineering ▶ Transport Equipment and Machinery

RECOMMENDED SCHOOL SUBJECTS

- Design
- Engineering
- Industrial Graphics Skills

CORE SCHOOL SUBJECTS

- General Mathematics
- Essential English
- Engineering Skills

JOB OVERVIEW

As a Pattern Maker, you'll be responsible for creating precise patterns used in the casting process for metal parts. These patterns are the starting point for producing components ranging from engine blocks in the automotive industry to turbine blades in aerospace applications. You'll work closely with the foundry industry, making design moulds for cast metal and handling the manufacture, replacement, and repairs of patterns.

In this role, you'll work with a variety of materials to create patterns, including wood, metal, and plastics. You'll use both traditional hand tools like chisels and planes, as well as modern equipment such as CNC machines and 3D printers. Your work might involve creating a wooden pattern for sand casting one day and designing a complex multi-part mould for investment casting the next. You'll need to consider factors like shrinkage allowances, draft angles, and parting lines when designing patterns. The products you enable could include anything from intricate jewellery pieces to large industrial valve bodies.

WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design and construct patterns for various casting processes
2. Interpret engineering drawings and specifications
3. Select appropriate materials for pattern construction
4. Operate woodworking and metalworking machinery
5. Verify pattern dimensions and quality

HOW TO BECOME A PATTERN MAKER (ENGINEERING)

If you have an interest, or some basic experience in a role like this, you can apply directly to an employer to work with them as an apprentice.

You may also find it useful to undertake a Certificate II in Engineering Pathways (MEM20422) while you are at school or before commencing an apprenticeship. This course will give you a good introduction to manufacturing concepts and equipment used.

Research potential employers in your area via a search engine, social media or job site. Even if there are no jobs advertised with the employer you're interested in, it can be a good idea to send a cover letter with your resume expressing your interest.

VOCATIONAL EDUCATION & TRAINING

An apprenticeship with a manufacturer is the best pathway to gain employment in this role. You can undertake the following qualifications as apprenticeships:

- Certificate III in Engineering – Patternmaking Trade (MEM31622)

As an apprentice you will combine work with formal training, allowing you to gain practical skills and knowledge in a specific trade while earning a salary.

Duration: Apprenticeships typically last up to 4 years for full-time participants. Part-time apprenticeships may take longer, depending on the individual's work schedule and training progress.

Work and study combination: As an apprentice, you will work either full-time or part-time while receiving formal training from a Registered Training Organisation (RTO). School-based apprenticeships may be available.

Eligibility: Generally, apprenticeships do not require any formal qualifications to enter, making them accessible to a wide range of individuals, including if you are a school leaver or someone looking to change careers. There are minimum age requirements and there may be other eligibility criteria.

Completion: On completion you will receive a nationally recognised trade qualification, showcasing your skill and experience.

Skills, qualifications, accreditations and licences

A Pattern Maker may choose to pursue other training or certifications, licences and tickets. Qualifications and skills may be required to progress to supervisor or team leader positions.

Qualifications that may help you advance in your career include:

- Certificate IV in Engineering (MEM40119)
- Diploma of Engineering – Advanced Trade (MEM50119)

UNIVERSITY & HIGHER EDUCATION

Holding a degree in human resources, finance, economics, marketing or management can be helpful if you are considering taking a step into leadership or a business ownership position.

Undertaking higher level learning at an undergraduate or graduate level in an engineering field would support deeper learning of technical concepts and theories, and support career advancement.