



# Careers in manufacturing: engineering mechanical

## Paraprofessional and professional

**Mechanical engineers can specialise in a number of areas. These include:**

- Mechanical engineer
- Production/plant engineer
- Biomedical engineer.

### Mechanical engineer

Mechanical engineers plan, design and oversee the development, installation, operation and maintenance of machinery. They conduct research to solve practical engineering problems and to improve efficiency.

Mechanical engineers may:

- design new machines, equipment or systems taking into account cost, availability of materials, strength and maintenance requirements, appearance and impact on the user and on the environment
- use computer-aided design (CAD) to assist in design and drawing
- carry out research into the use of different types of fuel and energy, materials handling, heating and cooling processes
- undertake the design and construction of resource development projects, such as offshore platforms, onshore gas plants and iron ore mining facilities
- supervise the operations of manufacturing process and production plants, materials handling installations, power stations and sewerage and water supply pumping stations
- specify, select, install and manage the maintenance of factory production and machinery

- act as consultants, carrying out studies about possible changes or improvements and estimating costs of products for clients.

### ***Relevant qualifications:***

- Diploma of Engineering (Technical)
- Advanced Diploma of Engineering
- Vocational Graduate Diploma of Engineering
- Degree

### Production or plant engineer

Production or plant engineers plan, direct and coordinate the manufacturing activities in industrial plants, including the design, construction, modification, performance and maintenance of equipment and machinery.

Production or plant engineers may:

- work out standards and policies for installation, modification, quality control, testing, inspection and maintenance according to engineering principles and safety regulations
- inspect plant and machinery to ensure optimum performance
- direct the maintenance of plant buildings and equipment and coordinate the requirements for new designs, surveys and maintenance schedules
- prepare contracts and specifications for construction and the acquisition of facilities
- test newly installed machines and equipment to make sure there is compliance with requirements and specifications.

## **Relevant qualifications:**

- Advanced Diploma of Engineering
- Vocational Graduate Diploma of Engineering
- Degree

## **Biomedical engineer**

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Biomedical engineers apply engineering and scientific methods to find solutions to problems in medicine and the life sciences in areas such as engineering of new medical equipment, developing computer programs to support same, and designing and engineering prosthetic and orthotic devices.

## **Relevant qualification:**

- Degree

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