# BIOMEDICAL ENGINEER

**ALSO KNOWN AS:** BIOENGINEERING SPECIALIST | MEDICAL DEVICE ENGINEER | BIOMECHANICAL ENGINEER | CLINICAL ENGINEER | REHABILITATION ENGINEER

## TURN SCIENCE FICTION INTO LIFE-SAVING REALITY.

At the crossroads of medicine and technology, biomedical engineers are the heroes bridging the gap between complex medical problems and innovative solutions.

### KEY SKILLS

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

- Bioengineering
- Data analysis
- Programming
- CAD software proficiency
- Problem solving

### VALUES & ATTRIBUTES

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

- Innovative
- Ethical
- Adaptable
- Attention to detail
- Collaborative
- Enterprising – "Persuader"

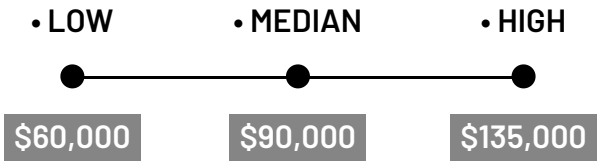
### CAREER PROGRESSION

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

- Microbiologist
- Renewable Energy Engineer
- Biofuels Technologist
- Biotechnologist

### SALARY EXPECTATION

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




### RELATED INDUSTRIES

- Pharmaceutical and Medical Technology

### RECOMMENDED SCHOOL SUBJECTS

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

### CORE SCHOOL SUBJECTS

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


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## JOB OVERVIEW

Biomedical engineers apply principles of engineering and biological sciences to design and develop groundbreaking medical equipment, devices, and software. They play a crucial role in improving patient care and advancing medical treatments by creating everything from artificial organs and prosthetics to sophisticated diagnostic tools and imaging systems.

These professionals work in diverse settings, including hospitals, research facilities, and medical equipment manufacturing companies. They collaborate closely with medical practitioners, scientists, and other engineers to identify healthcare needs and develop technological solutions. A typical day might involve analysing medical equipment performance, designing prototypes, conducting experiments, or presenting findings to stakeholders.

Biomedical engineers need a strong foundation in both engineering and biological sciences. They must possess excellent problem-solving skills, creativity, and attention to detail. Proficiency in computer-aided design (CAD) software, data analysis tools, and programming languages is often required. Additionally, they must stay updated with the latest advancements in medical technology and regulatory requirements in the healthcare industry.

## WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design and develop medical devices and equipment
2. Conduct research to solve clinical problems
3. Evaluate the safety and efficacy of biomedical equipment
4. Collaborate with healthcare professionals to understand medical needs
5. Maintain and repair complex medical instruments

## HOW TO BECOME A BIOMEDICAL ENGINEER

Becoming a biomedical engineer typically requires a bachelor's degree in biomedical engineering or a related field. Some positions may require a master's degree or Ph.D., especially for research or leadership roles. Here are the steps to pursue this career:

1. Complete a bachelor's degree in biomedical engineering or a related engineering field
2. Gain practical experience through internships or co-op programs
3. Consider obtaining professional certification, such as the Biomedical Engineering Certification (Certified Biomedical Engineer)
4. Pursue advanced degrees for specialisation or research positions
5. Stay updated with the latest developments in the field through continuous learning and professional development


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## VOCATIONAL EDUCATION & TRAINING

While most biomedical engineering positions require a bachelor's degree, there are vocational education and training options that can provide foundational knowledge and skills in related areas. These courses can be beneficial for those looking to enter the field as technicians or to supplement their engineering education:

- Certificate IV in Pharmaceutical Manufacturing (FBP40522)
- Diploma of Engineering – Non-Destructive Test (MEM50422)

Advanced level vocational education and training qualifications can sometimes count towards or give you entry to a university degree. These include:

- Advanced Diploma in Laboratory Management (MSL60122)
- Advanced Diploma of Engineering (MEM60122)
- Graduate Diploma of Engineering (MEM80122)

## UNIVERSITY & HIGHER EDUCATION

A bachelor's degree in biomedical engineering is the most common entry point for this career. This interdisciplinary program combines engineering principles with biological and medical sciences. Students learn about biomechanics, biomaterials, medical imaging, and more. Many universities offer specialised master's and doctoral programs for those seeking advanced positions or research opportunities.

Typical degree options include:

- Bachelor of Engineering (Biomedical)
- Master of Biomedical Engineering
- Doctor of Philosophy (Ph.D.) in Biomedical Engineering

These programs provide in-depth knowledge of engineering principles, biology, and medical sciences, preparing graduates for innovative roles in the healthcare technology sector.


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