

# Biomedical Engineer



## What do they do?

Biomedical Engineers use their background in engineering and medicine to analyze and design solutions for problems in biology and medicine. They create devices like artificial organs, prosthetics, pacemakers, imaging devices and other medical equipment. They may also design software to run complicated medical instruments.

## Where do they work?

Biomedical Engineers work in hospitals, laboratories, manufacturing or universities. They can work with patients and often work with other professionals.

## Pay:

According to the U.S. Bureau of Labor Statistics, the average yearly income for Biomedical Engineers is \$86,960.



## Education:

A four-year bachelor's of science degree is required to work in biomedical engineering.

### Biomedical Engineering training in Madison:

UW-Madison: [www.engr.wisc.edu/bme.html](http://www.engr.wisc.edu/bme.html)

High School students interested in becoming a Biomedical Engineer should take classes in chemistry, biology, physics, math and calculus, drafting or computer programming.

## Accreditation:

Education programs for Biomedical Engineering are accredited by the American Society for Engineering Education (ASEE) and the Accreditation Board for Engineering and Technology (ABET).

[www.ases.org](http://www.ases.org)

[www.abet.org](http://www.abet.org)



## Professional Associations:

Biomedical Engineers can choose to join any of the following professional associations:

The American Association of Engineering Societies (AAES): [www.bmes.org](http://www.bmes.org)



The Biomedical Engineering Society (BMES): [www.bmes.org](http://www.bmes.org)



Engineering in Medicine & Biology Society (EMBS): [www.embs.org](http://www.embs.org)

Biomedical Associations of Wisconsin (BAW): [www.baw.org](http://www.baw.org)



## Licensure:

There are currently no requirements to become a licensed Biomedical Engineer, and there are no exams specific to Biomedical Engineering. Some Biomedical Engineers still choose to become licensed through the National Council of Examiners for Engineering and Surveying (NCEES).

Two exams must be passed to gain licensure. First is the Fundamentals of Engineering Exam, followed by four years of working experience before one is eligible to take the Principles and Practice in Engineering exam which grants license as a Professional Engineer.

Learn more about FE and PE exams at:

[www.ncees.org](http://www.ncees.org)



State licensure is also optional. Wisconsin does license engineers who have passed their national exams. Licensure is managed by the Wisconsin Department of Safety and Professional Services (DSPS):

[www.dsps.wi.gov/Licenses-Permits/Engineer/PElicense](http://www.dsps.wi.gov/Licenses-Permits/Engineer/PElicense)



## Specialization:

Biomedical Engineers work in many professional fields. Some specialties are:

- Bioinstrumentation
- Biomaterials
- Biomechanics
- Clinical Engineering
- Systems Physiology
- Rehabilitation Engineering
- Cellular, Tissue and Genetic Engineering

## Job Outlook:

According to the U.S. Bureau of Labor Statistics, employment for Biomedical Engineers is expected to grow 27 percent between 2012-2020 which is faster than the average across all occupations

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2012-13 Edition*, Biomedical Engineers:  
<http://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm>

