BIOMEDICAL ENGINEERING

STEM
Science, Technology, Engineering, and Math
Biomedical Engineering
IUPUI School of Engineering and Technology

About the Major

Biomedical Engineering is a discipline that advances knowledge in engineering, biology, and medicine, and improves human health through cross-disciplinary activities that integrate the engineering sciences with the biomedical sciences and clinical practice. The output of these industries directly benefits the health and well-being of people and hence the Biomedical Engineer is often attracted to this humanistic component as well as the advanced technology.

Examples of biomedical engineering include such devices as implantable cardiac pacemakers and defibrillators, joint replacement implants, biomedical imaging, novel drug delivery systems, and tissue engineered skin used for grafting.

Sample Coursework

- Multivariate Calculus
- Organic Chemistry
- Biomechanics
- Cell/Tissue Behavior and Properties
- Quantitive Physiology
- Biomedical
- Engineering Design I & II

Possible Career Opportunities

- Biomedical Engineer
- Medical Researcher
- Physician*
- Sales Engineer
- Product Development Engineer
- Process Engineer

* = Career option requires additional training or education

Employment and Graduate School Information

Employment Outlook

Employment in the biomedical engineering is projected to grow much faster than average through 2016. The aging of the population and the focus on health issues will increase the demand for better medical devices and equipment. An increased concern for cost-effectiveness will boost demand for biomedical engineers, particularly in pharmaceutical manufacturing and related industries. However, because of the growing interest in this field, the number of degrees granted in biomedical engineering has increased greatly. Biomedical engineers may face competition for jobs; a graduate degree is recommended or required for many entry-level positions (Occupational Outlook Handbook, 2008-09).

Salary Expectations

The average annual earnings of all biomedical engineers were $73,930 (OOH, 2008-09). The National Association of Colleges and Employers reports the average starting yearly salary for Bioengineering and Biomedical Engineering graduates was $54,661 in 2008 (Occupational Outlook Handbook, May 2012).

Graduate/Professional School Opportunities

One third to one half of IUPUI Biomedical Engineers choose to continue their studies in graduate or professional school (IUPUI School of Engineering and Technology). The most common areas for further study are: Biomedical Engineering, Medicine or Dentistry, Public Health, Mechanical Engineering, Biological or Medical Sciences, and Law.

Where Could I Work?

- Biomedical Device Companies
- Pharmaceutical/Medical Companies
- Research Laboratories
- Clinical Environments
- Government (Federal, State, or City)

Where Can I Get More Information?

Purdue School of Engineering and Technology
Phone: (317) 278-2416
engr.iupui.edu/bme

Biomedical Engineering Society (BMES)
www.bmes.org

International Federation for Medical & Biological Engineering
www.ifmbe.org

Interest Code

Realistic
Investigative
Enterprising