Engineering Meets Biology and Medicine

Biomedical engineering applies quantitative engineering analysis and design to biological and medical, and behavioral health problems. It is a field dedicated to revealing basic knowledge of disease mechanisms to improve human health, and to developing new technologies and therapies to improve the quality of life.

Biomedical Engineering at UD provides students with the training necessary to bridge the gaps between medicine, engineering and biomedical research. With a broad background in chemical, mechanical, materials science and electrical engineering, students are prepared for careers in biomedical research with a quantitative engineering emphasis. A degree in biomedical engineering opens the door to positions in universities, hospitals, labs, industry and regulatory agencies.

The outlook for biomedical engineers is incredibly promising. In 2010, the Bureau of Labor Statistics identified biomedical engineering as the fastest-growing occupational field, with anticipated job growth of 72% over the next decade. In both 2012 and 2013, CNNMoney named this the number one job in America because, along with the higher than average salary, it is a career that helps make the world a better place. CareerCast.com also rated biomedical engineering second in its list of top 10 jobs of 2013, recognizing it as a career with a bright future.
Biomedical Engineering Curriculum:
To earn a bachelor’s degree, students must complete 126 credits and meet specific requirements as outlined in the online catalog. See UD Catalog for additional details.

FIRST YEAR
FALL
BMEG 101 - Introduction to Biomedical Engineering (FYE)
BISC 207 - Introductory Biology I
CHEM 107 - General Chemistry for Life Sciences I
MATH 241 - Analytic Geometry & Calculus A

SPRING
CHEM 104 - General Chemistry II
CISC 106 - General Computer Science for Engineers
ENGL 110 - Seminar in Composition
MATH 242 - Analytic Geometry & Calculus B
Breadth Requirement Elective 1

SECOND YEAR
FALL
BMEG 211 - Cell & Tissue Laboratory I
BMEG 301 - Quantitative Cellular Physiology
CHEM 321 - Organic Chemistry I
CHEM 325 - Organic Chemistry Lab I
MATH 243 - Analytic Geometry & Calculus C
PHYS 207 - Fundamentals of Physics I

SPRING
BMEG 302 - Quantitative Systems Physiology
MATH 305 - Applied Math for Biomed, Chem & Biomol Eg.
PHYS 208 - Fundamentals of Physics II
ELEG 305 - Signals and Systems
Breadth Requirement Elective 2

THIRD YEAR
FALL
BMEG 310 - Bioengineering Mechanics I
BMEG 330 - Biomedical Instrumentation
BMEG 340 - Biomedical Modeling and Simulation
MSEG 302 - Materials Science for Engineers
Technical Elective 1

SPRING
BMEG 311 - Bioengineering Mechanics II
BMEG 341 - Biomedical Experimental Design and Analysis
BMEG 360 - BME Junior Design
BMEG 420 - Biological Transport Phenomena
Technical Elective 2

FOURTH YEAR
FALL
BMEG 450 - Biomedical Engineering Design (DLE)
Technical Elective 3
Breadth Requirement Elective 3
Breadth Requirement Elective 4

SPRING
PHIL 444 - Medical Ethics
Technical Elective 4
Technical Elective 5
Technical Elective 6
Breadth Requirement Elective 5