The undergraduate bioengineering program at Binghamton University develops leaders and successful contributors within the broad field of bioengineering, preparing students for careers in:

- Food engineering
- Environmental engineering
- Rehabilitation engineering
- Healthcare, including pharmaceuticals, medical devices, artificial organs, prosthetics, diagnostics, medical instrumentation and medical imaging
- Oversight organizations such as the FDA and OSHA
- Medical centers and research institutes

In bioengineering, science, math and engineering principles converge in unique ways, and new discoveries result.

Our bioengineering students delve into exciting topics — such as biodevices, biomechanics and bioinformatics — while developing vital analytical and creative thinking skills and a strong ethical foundation preparing them to tackle a variety of healthcare issues.

Graduates of our program will have gained an understanding of biology and the ability to apply advanced mathematics (including differential equations and statistics), science and engineering to solving problems at the interface of engineering and biology; and the ability to make measurements on and interpret data from living systems, addressing the problems associated with the interaction between living and non-living materials and systems.

In addition, bioengineering studies at the undergraduate level are an excellent foundation from which to pursue graduate studies in biomedical engineering, the sciences or other disciplines such as business, law or medicine.
VISITING BINGHAMTON UNIVERSITY
Prospective students are welcome to join information sessions and student-guided tours of the campus held on most weekdays and selected Saturdays during the academic year. These sessions cover general information about admissions, academic and campus life, housing and the surrounding community. Please phone at least one week in advance to be sure sessions will be scheduled for the day you choose to visit.

Office of Undergraduate Admissions
Binghamton University
PO Box 6000
Binghamton, New York 13902-6000
607-777-2171
admit@binghamton.edu
www.binghamton.edu

For additional information:
Watson School Advising Office
607-777-6203
wtsnadvis@binghamton.edu
binghamton.edu/watson/advising

TRANSFER CREDITS
For admission into junior-level bioengineering, students are expected to have completed coursework in the subjects listed below:

- Two courses in college chemistry
- Calculus I, II, III and differential equations
- Two semesters of calculus-based physics
- Two courses in English composition or technical writing
- Two college courses in humanities/social science
- First course in electrical circuits
- Introductory programming course
- Two courses in biology, with lab

All transfer credits are awarded on a course-by-course basis.

STUDENT ORGANIZATIONS
- Alpha Omega Epsilon (Engineering Sorority)
- Alpha Pi Mu (Industrial Engineering Honor Society)
- American Society of Mechanical Engineers (ASME)
- Association for Computing Machinery (ACM)
- Engineering in Medicine and Biology Society/Binghamton Bioengineers (EMBS)
- Engineers Without Borders
-Eta Kappa Nu (National Electrical Engineering Honor Society)
-Institute of Electrical and Electronics Engineers (IEEE)
-Institute of Industrial Engineers (IIE)
-National Society of Black Engineers (NSBE)
-Pi Tau Sigma (National Mechanical Engineering Honor Society)
-Society of Automotive Engineers (SAE)
-Society of Hispanic Professional Engineers (SHPE)
-Society of Women Engineers (SWE)
-Tau Beta Pi (National Engineering Honor Society)
-Theta Tau (National Engineering Fraternity)
-Upsilon Pi Epsilon (Computer Science Honor Society)

WHAT’S BIOENGINEERING ALL ABOUT?

- It’s the result of recent advances in biology, mathematics and physics.
- It encompasses the areas of biology, physics and medical and social systems.
- It educates individuals in the art of product and process development for the purpose of improving human health and quality of life.
- It draws on the sciences, engineering sciences and liberal arts to educate and graduate well-rounded students.

SAMPLE FOUR-YEAR PROGRAM FOR BIOENGINEERING MAJORS
(The freshman-year curriculum is common to all engineering majors)

YEAR 1: FALL
- Calculus I
- Chemical Principles
- Exploring Engineering I*
- Engineering Communications I
- General Education Elective
- Body/Wellness

YEAR 1: SPRING
- Calculus II
- General Physics I
- Exploring Engineering II
- Engineering Communications II
- General Education Elective
- Body/Wellness

YEAR 2: FALL
- Organisms and Populations
- General Physics II
- Computational Tools for BE
- Ordinary Differential Equations

YEAR 2: SPRING
- Cell and Molecular Biology
- Calculus III
- Circuits and Signals for BE
- Biological and Engineering Networks

YEAR 3: FALL
- Statics/Dynamics for BE
- Life in Moving Fluids
- Data Acquisition and Analysis I
- Bioinformatics
- General Education Elective

YEAR 3: SPRING
- Biomechanics
- Heat and Mass Transfer in Biological Systems
- Data Acquisition and Analysis II
- Science Elective
- Engineering Elective

YEAR 4: FALL
- Senior Project I
- Biomaterials
- Ethics in Bioengineering
- Engineering Elective
- General Education Elective

YEAR 4: SPRING
- Senior Project II
- Biomaging
- Nonlinear Dynamics
- General Education Elective

* Required only for students who complete their freshman year in the Watson School. Others are required to take an additional four credits of engineering.
† Required only for students who complete their freshman year in the Watson School. Others may use other General Education courses in their place.

What’s Bioengineering All About?