

# BIOENGINEERING (BIOE)

Graduate Degree Program  
College: Engineering

## Abstract

Welcome to the Graduate Program in the Fischell Department of Bioengineering at the A. James Clark School of Engineering, University of Maryland. Our program represents the strong intellectual interdisciplinary infrastructure and collaborative culture that links engineering, biology, and medicine at our university.

Our program provides a basic understanding of bioengineering at the molecular and cellular level, focusing on:

- Medical Devices
- Biocomputational Systems
- Optical Technologies
- Imaging
- Drug Delivery
- Therapeutics Design
- Biomolecular Engineering
- Cell and Tissue Engineering
- Biomaterials
- BioChips

With strong, funded research programs and innovative partnerships with the National Institutes of Health, Food and Drug Administration, and University of Maryland School of Medicine, the Fischell Department of Bioengineering is an exciting place for graduate study.

## Financial Assistance

Graduate assistantships and fellowships are available on a competitive basis to Ph.D. students. No separate financial support application is required. Students will automatically be considered for eligible forms of support.

## Contact

Please see the program's website for program description, admission requirements, and financial aid information.

### Graduate Program

#### The Fischell Department of Bioengineering

3102A James Clark Hall

8278 Paint Branch Drive

University of Maryland

College Park, MD 20742

**Telephone:** 301.405.8268

**Fax:** 301.405.9953

**Email:** bioe-grad@umd.edu

**Website:** <http://www.bioe.umd.edu>

**Courses:** BIOE (<https://academiccatalog.umd.edu/graduate/courses/bioe/>)

## ADMISSIONS

### GENERAL REQUIREMENTS

- Statement of Purpose
- Transcript(s)
- TOEFL/IELTS/PTE (international graduate students (<https://gradschool.umd.edu/admissions/english-language-proficiency-requirements/>))

### PROGRAM-SPECIFIC REQUIREMENTS

- Letters of Recommendation (3)
- Graduate Record Examination (GRE) (optional)
- CV/Resume
- Personal History Statement (<https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/admissionsforms/umdpersonalhistorystatementbioe.pdf>) (optional): Personal History Statement to be uploaded via the Supplementary Application document upload area within the "Program Upload Requirements" section of the application.

Admission to the Graduate Program in Bioengineering requires a Bachelor's degree in a science or engineering discipline from an accredited undergraduate institution. Applicants with degrees in non-engineering disciplines, such as biology, chemistry, physics, or mathematics, are expected to have the following prerequisite courses: Calculus I, II, III; Differential Equations; and Thermodynamics. These courses would ideally have been completed by the time of application, but they may also be in progress.

For more admissions information or to apply to the program, please visit our Graduate School website (<https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying/>).

## APPLICATION DEADLINES

Type of Applicant	Fall Deadline
<b>Domestic Applicants</b>	
US Citizens and Permanent Residents	January 12, 2024
<b>International Applicants</b>	
F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants	January 12, 2024

### RESOURCES AND LINKS:

**Other Deadlines:** [bioe.umd.edu](http://www.bioe.umd.edu) (<http://www.bioe.umd.edu>)

**Program Website:** [bioe.umd.edu/graduate](http://www.bioe.umd.edu/graduate/) (<http://www.bioe.umd.edu/graduate/>)

**Application Process:** [gradschool.umd.edu/admissions/application-process/step-step-guide-applying](https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying) (<https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying/>)

## REQUIREMENTS

- Bioengineering, Doctor of Medicine and Doctor of Philosophy (dual degree) (M.D. and Ph.D.) (<https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-dual-degree-md-phd/>)
- Bioengineering, Doctor of Medicine and Master of Science (dual degree) (M.D. and M.S.) (<https://academiccatalog.umd.edu/>)

graduate/programs/bioengineering-bioe/bioengineering-dual-degree-md-ms/)

- Bioengineering, Doctor of Philosophy (Ph.D.) (<https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-phd/>)
- Bioengineering, Master of Science (M.S.) (<https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-ms/>)

## **FACILITIES AND SPECIAL RESOURCES**

The Department is located in A. James Clark Hall, a 184,000 square foot building serving as a central hub for new partnerships and collaboration for organizations throughout the Maryland and Washington, D.C. region.

Approximately 7,332 sq. feet of classroom space and 11,402 sq. feet of class lab space is used to support instructional capabilities. To help create an organic flow of ideas between many disciplines, the building features flex classrooms and two stories of flexible laboratories to the campus – including wet and dry spaces as well as a vivarium.

Optical laser and imaging laboratories feature state-of-the-art technology in digital fabrication, rapid prototyping, 3D printing, optics, and bioinformatics. In the imaging suite, researchers have the ability to examine molecular resolution of pathogens – whether in the GI tract or bloodstream – that show how a nano-carrier delivers a drug to a specific tumor site. Additionally, laser devices and magnetic resonance imagers will allow a close examination of cross-sections of the body and brain.