APPLIED BIOMEDICAL ENGINEERING, GRADUATE CERTIFICATE

Admission Requirements

Applicants must meet the general requirements for admission (https://e-catalogue.jhu.edu/engineering/engineering-professionals/admission-requirements/) to graduate study. Additionally, applicants are expected to hold a degree in engineering or in a related science field. The applicant's prior education must include the following courses:

1. mathematics through ordinary differential equations;
2. calculus-based physics;
3. chemistry; and
4. one semester/term of a programming language (e.g., Python, Java, MATLAB)

Applicants whose prior education does not include the courses listed above may still enroll under provisional status, followed by full admission status once they have completed the missing courses. Missing courses may be completed with Johns Hopkins Engineering or at another regionally accredited institution. These courses do not count toward the degree or certificate requirements. Official transcripts from all college studies must be submitted. When reviewing an application, the candidate's academic and professional background will be considered.

If you are an international applicant (https://e-catalogue.jhu.edu/engineering/engineering-professionals/admission-requirements/), you may have additional admission requirements.

Program Requirements

Four graduate courses must be completed within five years. One course is required from the biological sciences coursed listed below. One course is required from either the advanced mathematics or advanced engineering courses listed below. Two additional courses must come from any 600 or 700-level course (https://e-catalogue.jhu.edu/engineering/engineering-professionals/applied-biomedical-engineering/#coursestext) in the Applied Biomedical Engineering program.

Only one C-range grade (C+, C, or C−) can count toward the graduate certificate. Any course selections outside of the four required core courses are subject to advisor approval.

Code	Title	Credits
Biological Sciences		
Choose 1:		
EN.585.601	Physiology for Applied Biomedical Engineering I	3
EN.585.602	Physiology for Applied Biomedical Engineering II	3
EN.585.607	Molecular Biology	3
EN.585.685	Methods in Neurobiology	3
EN.585.710	Biochemical Sensors	3
EN.585.781	Frontiers in Neuroengineering	3
Advanced Mathematics and Advanced Engineering		
Choose 1 Advanced Mathematics Course:		
EN.585.615	Mathematical Methods	3
EN.535.641	Mathematical Methods For Engineers	3
EN.615.641	Mathematical Methods for Physics and Engineering	3
Or Choose 1 Advanced Engineering Course: [1]		
EN.585.703	Applied Medical Image Processing	3
EN.585.732	Advanced Signal Processing for Biomedical Engineers	3
EN.585.741	MR Imaging in Medicine	3
EN.585.704	Principles of Medical Imaging	3
EN.585.709	Biomechanics of Cells and Stem Cells	3
EN.585.718	Biological Solid & Fluid Mechanics	3
EN.535.661	Biofluid Mechanics	3
EN.535.663	Biosolid Mechanics	3
EN.605.647	Neural Networks	3

[1] Many advanced engineering courses require EN.585.615 or EN.535.641 as a prerequisite.