

PhD in Biological Engineering

About

Bioengineering or biological engineering is a science-based engineering discipline that integrates engineering and biological sciences in one curriculum. Bioengineers apply scientific and engineering principles to develop products, systems, and/or processes to improve human and animal health, bio-resource utilization, and environment protection.

The Department of Biomedical, Biological and Chemical Engineering offers the PhD degree in Biological Engineering in three emphasis areas: biomedical engineering, bioprocess engineering and bioenvironmental engineering.

Degree Requirements

The PhD degree requires a minimum of 72 semester hours beyond the baccalaureate degree. If approved by the student's doctoral committee, the PhD program of study may include up to 30 hours of graduate credits transferred from another university or from another campus of the MU system. The plan of study must include a minimum of 15 credit hours of MU coursework at the 8000/9000 level (exclusive of research, problems, or any independent study experiences). Graduate students are required to demonstrate proficiency in at least two of the technical proficiency areas listed in the current bioengineering graduate student handbook.

The Plan of Study must be approved by the doctoral program committee and should include the following:

BIOL_EN 8402	Research Methods	2
BIOL_EN 8087	Seminar in Biological Engineering	1
BIOL_EN 8180	Numerical Methods in Engineering Research	3
A graduate level Statistics course		3
Two additional Biological Engineering 8000 level courses (excluding Problems or Thesis Research)		6
BIOL_EN 9990	Doctoral Dissertation Research in Biological Engineering	0-45

Additional graduate level courses. (At least 12 credit hours.)

Qualifying Process

Within 18-month in the program, each PhD student must pass a qualifying examination before continuing enrollment. The exam is designed to test the student's ability to undertake advanced learning and carry out independent research. In general, the qualifying examination will have both a written part and an oral part in the format determined by the student's doctoral committee.

Comprehensive Examination Process

The comprehensive examination must be completed within 5-year from the student's starting date as a Ph.D. student. Prior to the comprehensive examination, students must have completed the majority of the course work in the Plan of Study, carried out the initial work of their projected research, and demonstrated that they will be able to complete all the remaining requirements for the doctoral degree. The comprehensive examination shall in general include both a written and an oral section. These two sections must be completed within one month.

The doctoral committee chair shall work with other committee members to decide on the specific format of the examination.

Dissertation Defense

A dissertation based on the original research completed by the doctoral student constitutes the written part of the final dissertation defense. An oral dissertation defense will be conducted after the dissertation has been completed and submitted to the doctoral committee. The dissertation defense must be conducted at least 7-month after the completion of the comprehensive examination.

Admissions

Applicants are required to meet two sets of minimum qualifications for admission: the requirements of the biological engineering degree program (<https://gradschool.missouri.edu/degreecategory/bioengineering/>) and the minimum requirements of the graduate faculty (<https://gradschool.missouri.edu/admissions/eligibility-process/>), enforced by the Graduate School. Please visit degree program's graduate admission page (<https://gradschool.missouri.edu/degreecategory/bioengineering/>) to learn about specific admission criteria, application deadlines, eligibility and application process. Before official admission to the University of Missouri, your application materials will be reviewed by both the Graduate School and the degree program to which you've applied.

For inquiries about the PhD degree in biological engineering, you can find detailed contact information on the degree program's graduate admission page (<https://gradschool.missouri.edu/degreecategory/bioengineering/>).