

Master of Engineering in Bioengineering

Bioengineering

The University of Kansas (KU) Master of Engineering in Bioengineering degree program is a coursework only master's degree. It is very similar to the Master of Science in Bioengineering degree at the University of Kansas. The primary difference is the elimination of research, the thesis and the thesis defense. The thesis credit hours are replaced with the same credit hours of coursework.

This degree will prepare students to be more effective in their careers in medicine, private commercial firms, and with entrepreneurship in a start-up company. The coursework-only Master of Engineering in Bioengineering degree is an efficient way for baccalaureate graduates to get more in-depth background and credentials in bioengineering prior to seeking employment. The program is rigorous, and places high demands on the student who must demonstrate that they understand interdisciplinary concepts. The Master of Engineering in Bioengineering degree program provides knowledge breadth in engineering and the biological sciences, and knowledge depth in a particular focused area of coursework.

Applicants for the Master of Engineering in Bioengineering will have a baccalaureate degree in engineering, biological science, or a related field. Successful applicants will have strong academic credentials and demonstrated potential for advanced study by performance at the baccalaureate level. The completed Master of Engineering in Bioengineering is evidence of an ability to work as an engineer who is capable of advanced analysis and design. The holder of this degree will have completed significant course work to advance their knowledge and abilities in the area of bioengineering.

Master of Engineering students will choose an area of focus from the Bioengineering track list to determine their coursework requirements.

1. Bioimaging
2. Computational bioengineering
3. Biomaterials and tissue engineering
4. Biomechanics and neural engineering
5. Biomedical product design and development
6. Biomolecular engineering

The individual track requirements can be found on the Bioengineering website (<http://bio.engr.ku.edu/>). The student, in consultation with their academic advisor, develops a Plan of Study to satisfy the degree requirements.

Financial Aid

Once admitted, students become eligible for financial aid and are encouraged to file the FAFSA. Students pursuing the Master of Engineering in Bioengineering will not be considered for Graduate Assistantships within the Bioengineering Program and should plan to fund the ME degree through their own efforts or external funding.

Admission to the Bioengineering Graduate Program

All applicants are expected to have an undergraduate grade point average of 3.0 or higher on a 4.0 scale. The appropriate academic preparation includes both general and track prerequisites. General prerequisites include calculus I and II, differential equations, linear algebra, general physics I and II, chemistry, and biology. Track prerequisites depend on the student's track of study. More complete details about academic preparation can be found on the program's website (<http://bio.engr.ku.edu/>).

Applicants normally have a baccalaureate degree in an engineering discipline, physical sciences, the life sciences, or a closely related field. Depending on their preparation, students may be required to take additional courses that may or may not count toward the graduate degree. A student may be admitted to the Bioengineering Program without meeting all the prerequisites if approved by the Admissions Committee. This student must plan to complete the prerequisites in addition to the graduate degree requirements and consultation with the program is required to determine which courses satisfy these requirements. Course credits from prerequisites generally do not apply toward the graduate degree and must be completed with a grade of B or higher.

Submit your graduate application online (<https://gradapply.ku.edu/apply/>).

Application Information & Deadlines

A complete application package should be submitted by the following deadlines:

DOMESTIC APPLICANTS:

Fall: July 1

Spring: December 1

Summer: April 15

INTERNATIONAL APPLICANTS:

Fall: May 15

Spring: October 15

Summer: March 1

APPLICATION MATERIALS INCLUDE:

1. **Official Transcripts**

- a. One official transcript from each degree granting institution that the student has attended is REQUIRED for admission. If courses from another university or junior college appear on the degree granting institution's transcript, we do not need transcripts from the other university or junior college. A scanned copy of the official transcript IS acceptable but it MUST be an official copy. Printouts from student portals or websites will NOT be accepted. A final degree conferred transcript sent directly from the degree granting university will be required before the second semester of enrollment should the applicant be admitted and enroll in a program at KU.

2. **A Statement of Your Academic Objectives**

- a. Your statement is a very important part of your application. Please write a 1-2 page essay describing your academic and career

objectives as they relate to bioengineering. It should indicate how and why you have decided to pursue graduate studies in your chosen field. **Please discuss the particular areas of focus within the track(s) you wish to study and why you feel KU specifically is a good fit for your particular interests and goals.** You may also include relevant information about your academic background, research experience, leadership skills, related work and/or volunteer experiences that you feel have prepared you for graduate study. This statement of objectives will be read and used by faculty in the track to evaluate your academic and leadership potential. Please make sure that it is of high quality and demonstrates your readiness for graduate level study and research at KU.

3. Your Curriculum Vitae (CV) or Resume

4. English Proficiency Scores (if English is NOT your native language)

- a. TOEFL, iBT (or IELTS) Scores (sent to us directly from the testing agency).
 - i. **The institution code for the University of Kansas is 6871.**
 - ii. **The program/department code is 1603.**
 - iii. **The department code is 69 for iBT.**
 - iv. **NOTES:**
 1. For REGULAR admission: All section scores must be at least 20 on the internet-based and computer based TOEFL.
 2. Admission will NOT be granted if you do not meet the above standard of English Proficiency. Due to a change in policy, we are no longer able to issue an I-20 for these instances.
 3. For more information regarding English Proficiency Requirements (<http://graduate.ku.edu/english-proficiency-requirements/>), see the graduate studies website.

5. Proof of Financial Support (International Applicants ONLY)

- a. Obtain the proper Financial Documentation. Scan the document and save it as a pdf file. **KEEP THE PAPER COPIES.** Be prepared to send the paper copies to the program office at the address below if requested! Although the financial statement is not required for making admission decisions, the U.S. Department of State mandates that evidence of financial resources, such as an official bank statement, be provided in order to issue an I-20 and student visa. It should have the name of the student on the account, not the parent's name or any other name. See the International Support Services (<https://iss.ku.edu/proof-finances/>) website for more information.

follows a structure common to many of the top Bioengineering/Biomedical Engineering graduate programs nationally (Table 1).

Students select one of the tracks for their primary exposure to bioengineering concepts. All the tracks have the same required core courses (total 6 credit hours): C&PE 756 Introduction to Biomedical Engineering (3 credit hours), BIOE 800 Colloquium (2 credit hours total), and BIOE 801 Responsible Conduct of Research in Engineering (1 credit hour). The course C&PE 756 Introduction to Biomedical Engineering, permits them to delve into the subject area of their track, but also allows the student to sample the breadth of bioengineering topics across all of the tracks. BIOE 800 Colloquium provides some professional development as well as additional exposure to the breadth of applications in bioengineering. While BIOE 801 Responsible Conduct of Research in Engineering, might seem less relevant for a professional coursework-only Master of Engineering degree, the focus on professional engineering ethics is quite applicable and important for individuals in industry, as well.

Beyond the core courses, each track has 9 credit hours of required depth courses focused on the track, and an additional 15 credit hours of breadth courses. The detailed requirements of each track, the depth and breadth courses, as well as the Master Breadth Course List are provided as supporting documents. A Total of 30 credit hours of coursework are required for the proposed Master of Engineering in Bioengineering degree. Because of the varied nature of the tracks, there are some minor variations in core, depth and breadth requirements between the tracks (see detailed requirements of each track).

*No more than 9 credits may be taken at the 500-600 level for this degree.

No course graded CR or NC (credit/no-credit) can count toward the satisfaction of the degree requirements.

Contact Information

Please contact Graduate Program Coordinator at bioe@ku.edu or (785) 864-5258 with questions about the Bioengineering application process.

The Master's aspirant works with an advisor familiar with their selected track area to develop a formal plan of study. The tracks are focused in major research and educational themes within the Bioengineering Graduate Program; each track has a track director and affiliated faculty. The student selects from among track courses to construct a comprehensive educational program that takes (a) advantage of the student's background, (b) builds and demonstrates academic skills, and (c) capitalizes on the strengths of the affiliated faculty. This approach