Master of Science in Biochemistry and Biophysics

Molecular Biosciences Masters Programs

Molecular Biosciences is an interdisciplinary group of faculty, postdoctoral fellows and graduate students who perform cutting edge research across a wide range of areas (https://molecularbiosciences.ku.edu/research-areas/), including biochemistry, biophysics, structural biology, bioinformatics, cancer biology, genetics, genomics, immunology, microbiology, virology, neurobiology, molecular, cellular and developmental biology. Our researchers investigate fundamental biological and biomedical problems on all levels, from molecules to cells to organisms. Our research labs collaborate to solve complex questions using a range of approaches, and make use of the world-class core facilities at KU. The Department of Molecular Biosciences at the University of Kansas is an excellent environment for research and graduate training in biology.

The department offers Master of Science degrees in Biochemistry and Biophysics (http://molecularbiosciences.ku.edu/biochemistry-graduate-program/), in Molecular, Cellular, and Developmental Biology (MCDB (http://molecularbiosciences.ku.edu/mcdb-graduate-program/)), and in Microbiology (http://molecularbiosciences.ku.edu/microbiology-0/). General information about the department, our faculty and students, and alumni of our graduate programs can be found on our website (http://molecularbiosciences.ku.edu/). Detailed information about admission (https://molecularbiosciences.ku.edu/graduate-admissions/) to our graduate program and financial support (http://molecularbiosciences.ku.edu/stipend/) is also available.

Note that the various B.A. and B.S. undergraduate degree programs in biology are listed at the Biology Undergraduate Programs (http://catalog.ku.edu/liberal-arts-sciences/biology/) page.

Admission to Graduate Studies

Admission Requirements

- All applicants must meet the requirements outlined in the Admission to Graduate Study (https://policy.ku.edu/graduate-studies/admission-to-graduate-study/) policy.
- Bachelor's degree: A copy of official transcripts showing proof of a bachelor's degree (and any post-bachelor's coursework or degrees) from a regionally accredited institution, or a foreign university with equivalent bachelor's degree requirements is required.
- English proficiency: Proof of English proficiency (https://gradapply.ku.edu/english-requirements/) for non-native or non-native-like English speakers is required. There are two bands of English proficiency, including Admission and Full proficiency. For applicants to online programs, Full proficiency is required.

Graduate Admission

The Department of Molecular Biosciences (http://molecularbiosciences.ku.edu/) recognizes the importance of investing in the careers of future biomedical scientists. We welcome graduate students into our vibrant scientific community, where they have the opportunity to become outstanding researchers and prepare for an exciting future in science.

All students seeking a graduate degree must submit a formal application to the Molecular Biosciences graduate program. Full information on the application process, and a link to apply online can be found on our website (https://molecularbiosciences.ku.edu/graduate-admissions/). Application materials for the Molecular Biosciences graduate program include:

1. An application form
2. 1 official copy of all academic transcripts (international students must also provide a translated copy);
3. A Curriculum Vitae or résumé (1 to 2 pages);
4. 3 letters of recommendation from qualified individuals using the Graduate Letter of Recommendation form;
5. A Statement of Research Interests and Goals. A strong statement will include: (a) A description of previous research experiences, if applicable, discussing how these have prepared you for graduate school both professionally and personally, (b) A discussion of your broad research interests, and (c) A description of your future career goals, discussing how a PhD from our department will help further these goals. (1-2 pages)
6. Application Fee
7. Non-native speakers of English must meet the English proficiency requirements for employment as a GTA/GRA: minimum TOEFL (iBT) SPEAKING score of 22, AND all other parts scores at least 20; or IELTS SPEAKING score of 7, with no other part score below 5.5. Scores must be less than 2 years old from the time of initial enrollment.

   More information can be found here: https://gradapply.ku.edu/english-requirements (https://gradapply.ku.edu/english-requirements/)

GRE scores are not required for your application. You may submit your official GRE scores if you feel it will help the admissions committee better understand your academic capabilities. But electing not to submit scores will not impact your chance of admission.

Complete applications received by **December 1st** are reviewed by the Molecular Biosciences graduate admissions committee. Admission into our program is competitive, and we receive a large number of applications each year. Students will be informed of admission decisions early in the new year, admissions decisions are finalized by April 15, and newly admitted students matriculate in August.

Our holistic evaluation is based on several criteria, including grades, the strength of recommendation letters, previous research experience, and the fit of your career goals with our educational program.

The department is committed to enhancing diversity (https://molecularbiosciences.ku.edu/dei-statement/) in the life sciences, encourage participation from individuals with diverse life experiences, and strive to foster an inclusive research and training environment for all our faculty, students, and staff.

All supporting documentation should be uploaded online when you apply. If this is not possible, please send documentation to:

Cassandra Jim
Graduate Program Coordinator
The University of Kansas

Department of Molecular Biosciences
Haworth Hall
1200 Sunnyside Ave., Room 2034
Lawrence, KS 66045

M.S. Degree Requirements:

Biochemistry and Biophysics

Required Coursework

Code	Title	Hours
Core Courses		
BIOL 985	Advanced Study (Minimum 1 lab rotation in first semester)	1
BIOL 750	Advanced Biochemistry	3
BIOL 772	Gene Expression	4
BIOL 807	Graduate Molecular Biosciences	3
BIOL 817	Rigor, Reproducibility and Responsible Conduct in Research	3
BIOL 901	Graduate Seminar in Biochemistry and Biophysics	1
Plan of Study		**14**
Additional courses in the student's plan of study will be determined in consultation with the faculty advisor and graduate committee based on student's research. No more than 6 hours of these may be below the 700 level.		
Completion Option		**1**
Select one of the following culminating effort options to complete the degree. See Culminating Effort section below for more information.		
Thesis options: BIOL 999 - Master's thesis (1 hour)		
OR		
Published Paper Option: One additional course, selected in consultation with the advisor (1 hour)		
Total Hours		**30**

Seminar Enrollment

Seminar Enrollment

Starting with the first year of graduate study, students are required to continuously enroll each fall and spring semester in 1 credit hour of one of the following seminar courses, selected in consultation with the student's faculty advisor: BIOL 701 Topics in: _____ OR BIOL 901 Graduate Seminar in Biochemistry and Biophysics . *At least one credit of BIOL 901 is required.*

Culminating Effort

The Biochemistry & Biophysics M.S. degree allows for 3 different culminating effort options to complete the degree:

1. Write a thesis resulting from original research on a laboratory problem.
2. Write a library thesis on a topic approved by the student’s graduate committee.
3. Publish a research paper in a national, refereed journal. Acceptance of the paper for publication constitutes publication for conferral of the degree.

At the completion of this program, students will be able to:

- Understand fundamental general concepts in molecular biosciences as well as principles of their specific research area.
- Understand methods and designing experiments.
- Interpret results and the formulation of testable hypotheses.
- Be aware of broader significance and effective communication to a wide audience.