Master of Science in Microbiology

M.S. degrees may be earned with a major emphasis in bacteriology, virology or immunology. M.S. program is designed to prepare for a diverse workforce of scientists, teachers and administrators who fill the broad science and engineering employment needs of the private and government sectors. It may also lead to teaching positions at the secondary or junior college level.

The application process is an online process. Application to this graduate program is facilitated through the Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS). Detailed instructions on how to apply and the application deadlines are posted on the Interdisciplinary Graduate Program in Biomedical Sciences website http://www.kumc.edu/gpbs/how-to-apply.html.

Admission requirements:

- Bachelor's degree from a regionally accredited institution documented by submission of official transcript indicating the degree has been conferred before entering the program. Official transcripts from institutions attended post-baccalaureate are also required. Students with degrees from outside the U.S. may be subject to transcript evaluation indicating the degree is equivalent to a U.S. degree and meets the minimum cumulative GPA requirements.
- A cumulative grade-point average (GPA) of at least a 3.0 on a 4.0 scale for the bachelor's degree.
- Applicants who are not native speakers of English, whether domestic or international, must demonstrate they meet the Minimum English Proficiency Requirement (http://catalog.ku.edu/graduate-studies/kumc/#admissiontext).
- A background check (http://catalog.ku.edu/graduate-studies/kumc/#admissiontext) is required during the admission process; it may affect the student's eligibility to enter the program.
- An official copy of the Graduate Record Examination (GRE) score sent from Educational Testing Service (ETS) to University of Kansas Medical Center - ETS institutional code 6895.
- Three letters of recommendation.
- Prerequisite coursework:
  - One year of general chemistry
  - One year of organic chemistry or one semester of organic chemistry and one semester of biochemistry
  - One year of biological sciences
  - One semester of calculus
  - One semester of physics
  - Research experience (beyond labs associated with lecture courses) is strongly suggested.
- Interview - the most qualified applicants will receive an invitation for an interview.

Applicants will be assessed based on a combination of GPA, research experience, interview and GRE scores. Students not meeting the above requirements may be eligible for provisional admission. After an applicant has been admitted, a program may defer an applicant's admission for one year after which time the applicant must submit a new application.

Admission requirements are subject to change. In most cases, use the catalog of the year student entered the program. Other years' catalogs ».

Degree Requirements:

- Degree requirements are normally completed within 3 years of admission to the degree program although a maximum of 7 years is allowed.
- Cumulative grade-point average (GPA) of at least a 3.0 for all KU graduate coursework.
- Completion of a minimum of 30 credit hours.
- Enrollment in a minimum of one (1) credit hour the semester the student will graduate.
- Successful completion of either a thesis defense or general examination (http://catalog.ku.edu/graduate-studies/kumc/#programstext) the semester the student will graduate.
- If thesis option chosen, then enrollment in a minimum of one (1) credit hour of MICR 899 Master's Thesis in Microbiology and successful thesis submission and publication (http://catalog.ku.edu/graduate-studies/kumc/#programstext) (according to Office of Graduate Studies policy.)
- Successful completion of the following Interdisciplinary Graduate Program in Biomedical Science (IGPBS) (http://catalog.ku.edu/medicine/graduate-program-biomedical-sciences) courses (or their equivalent):
  - GSMC 850 Proteins and Metabolism 2
  - GSMC 851 Molecular Genetics 2
  - GSMC 852 Introduction to Biomedical Research I 2
  - GSMC 853 Cellular Structure 2
  - GSMC 854 Cell Communication 2
  - GSMC 855 Introduction to Biomedical Research II 2
  - GSMC 856 Introduction to Research Ethics 1
  - GSMC 857 Biographics 1
  - GSMC 858 Introduction to Faculty Research 1
  - GSMC 859 Research Rotations 1-4

- Successful completion of the following Microbiology courses:
  - MICR 810 Fundamentals of Immunology 2
  - MICR 811 Molecular Genetics of Bacteria and Phages 2
  - MICR 812 Molecular Virology and Pathogenesis 2
  - MICR 890 Master's Research in Microbiology 1-10
  - MICR 899 Master's Thesis in Microbiology (if thesis option chosen) 1-10

- Successful completion of additional elective coursework as determined in consultation with the student's advisor or research committee. Electives may include the Microbiology courses listed below or courses from other departments.
  - MICR 801 Principles of Immunology (offered Fall only) 1
  - MICR 802 Principles of Virology (offered Fall only) 1
  - MICR 803 Principles of Bacterial Genetics and Pathogenesis (offered Fall only) 1
  - MICR 805 Teaching in Higher Education (offered Fall and Spring) 3
  - MICR 808 Immunology (offered Spring only) 3
  - MICR 809 Tumor Immunology (offered Spring only) 3
Master of Science in Microbiology

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MICR 820</td>
<td>Bacterial Genetics and Pathogenesis (offered Spring only)</td>
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<tr>
<td>MICR 825</td>
<td>Virology (offered Spring only)</td>
<td>3</td>
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<td>MICR 826</td>
<td>Oncogenesis Associated with Viral Infections (offered Fall and Spring)</td>
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<td>MICR 830</td>
<td>Seminar in Microbiology (offered Fall and Spring)</td>
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<td>MICR 855</td>
<td>Host-Pathogen Interactions (offered Fall only)</td>
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Degree requirements and course descriptions are subject to change. Any courses taken as an equivalent must be approved by the Graduate Director and the Office of Graduate Studies. In most cases, use the catalog of the year student entered the program. Other years' catalogs are subject to change.

**Typical Plan of Study**

**Year 1**

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<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
<th>Summer</th>
<th>Hours</th>
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<tr>
<td>GSMC 850</td>
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<td>GSMC 853</td>
<td></td>
<td>2 GSMC 859</td>
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<tr>
<td>GSMC 851</td>
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<td>GSMC 854</td>
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<td>May take an elective course from the student’s chosen degree program in consultation with the student’s advisor.</td>
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**Total Hours:** 19-30

**Year 2**

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<th>Hours</th>
<th>Summer</th>
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**Total Hours:** 7-12

**Year 3**

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<th>Summer</th>
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<td>MICR 899 or 890</td>
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<td>1-6 MICR 899 or 890</td>
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<tr>
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<td>MICR 899 if thesis option chosen, otherwise MICR 890</td>
<td>MICR 899 if thesis option chosen, otherwise MICR 890</td>
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**Total Hours:** 12-36

Thesis defense or general examination scheduled semester approved by committee to graduate.