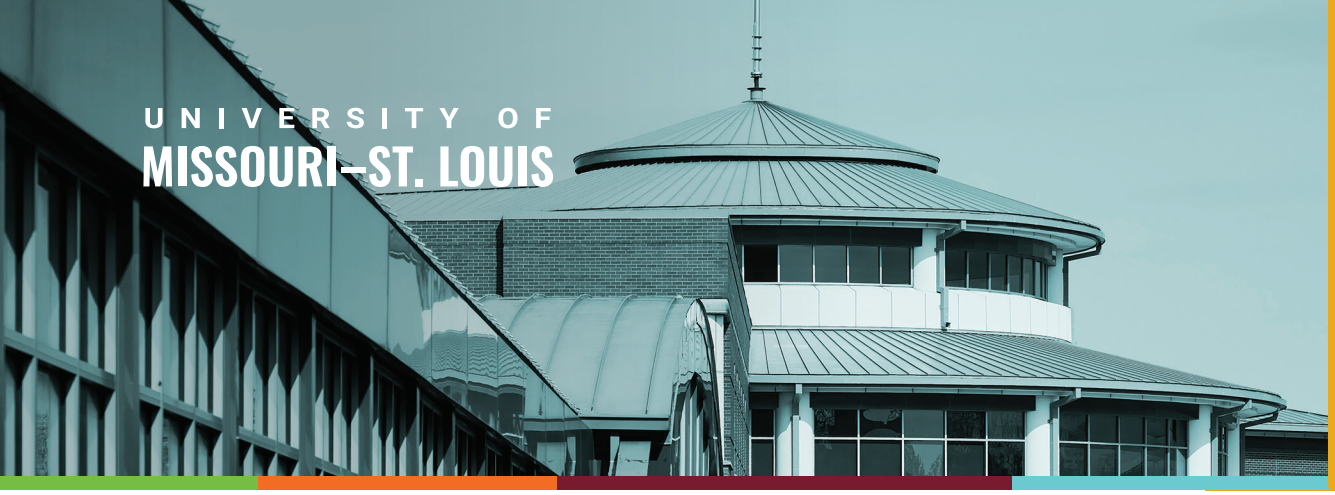

UNIVERSITY OF
MISSOURI–ST. LOUIS

4-YEAR
ACADEMIC
MAP

Biochemistry and Biotechnology BS

The mission of the Biochemistry and Biotechnology program is to provide students with a solid foundation in both chemistry and biology, as well as specialized training in the rapidly growing fields of biochemistry and biotechnology. Faculty members in this program are engaged in teaching and research in a broad range of areas, including genetics and molecular biology, microbiology and immunology, and protein biochemistry and biophysics. Students have the opportunity through coursework, laboratories, seminars, and research experience to develop the knowledge and skills necessary to enter the workforce or to continue with further graduate education.

Career Outlook

A degree in Biochemistry and Biotechnology provides students with the training they need to become part of the broad biotechnology and life sciences field. Many program graduates are employed in industry laboratories, including major corporations and smaller start-up companies developing new products and technologies. Graduates have also gone on to pursue further training in PhD programs and professional schools of dentistry, medicine, optometry, and veterinary medicine.

Future Career Options

- Chemist
- Clinical Research Specialist
- Food Scientist
- Forensic Scientist
- Lab Technician
- Molecular Biology
- Pharmaceutical Researcher
- Teacher/Educator

Skills Developed By Degree Completion

- Understand the principles an theorems among chemistry, biology, and biochemistry
- Honestly and objectively evaluate and report data with an understanding of accepted standards
- Perform laboratory experiments in chemistry, biology, and biochemistry
- Formulate meaningful hypotheses and evaluate data critically
- Transition principles to solutions for biotechnology and scientific problems
- Communicate solutions by presenting data in a clear and accurate manner
- Build scientific literacy and build upon previous scientific work
- Define and solve problems

Successful alumni have gone on to fulfill many of the opportunities above. Additional possibilities are taken from the Bureau of Labor Statistics. Contact an advisor to discuss additional future career options.

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University of Missouri–St. Louis

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Academic Advising
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umsl.edu/cas/advising

2024-2025 4-YEAR ACADEMIC MAP

Bachelor of Science in Biochemistry and Biotechnology

Check once completed

Year 1

FALL SEMESTER (15 credit hours)
- ENGL 1100: First-Year Writing (3)
- MATH 1030: College Algebra (3)
- MATH 1035: Trigonometry (2)
- GEN ED CORE: US History and Government (3)
- GEN ED EXPLORE: Social Sciences (3)
- INTDSC 1003: University Studies (1)

SPRING SEMESTER (15 credit hours)
- CHEM 1111: Introductory Chemistry I (5)
- GEN ED CORE: Communication Proficiency (3)
- COMM 1040: Introduction to Public Speaking (3)
- GEN ED EXPLORE: Humanities and Fine Arts (3)
- GEN ED EXPLORE: Social Sciences (3)

Year 2

FALL SEMESTER (16 credit hours)
- BIOL 1831: Introductory Biology: From Molecules to Organisms (5)
- CHEM 1121: Introductory Chemistry II (5)
- MATH 1100: Basic Calculus (3)
- Cultural Diversity Requirement (3)

SPRING SEMESTER (14 credit hours)
- BIOL 2012: Genetics (3)
- BIOL 2012L: Genetics Laboratory (2)
- CHEM 2612: Organic Chemistry I (3)
- GEN ED EXPLORE: Humanities and Fine Arts (3)
- GEN ED EXPLORE: Social Sciences (3)

Year 3

FALL SEMESTER (17 credit hours)
- BIOL 3622: Cell Biology (3)
- BIOL 4614: Biotechnology Laboratory (4)
- ENGL 3160: Writing in the Sciences (3)
- CHEM 2622: Organic Chemistry II (3)
- PHYSICS 1011: Basic Physics I (3)
- PHYSICS 1011L: Basic Physics I Laboratory (1)

SPRING SEMESTER (15 credit hours)
- BIOL 2482: Microbiology (3)
- BIOL 2482L: Microbiology Laboratory (2)
- BIOL 4602: Molecular Biology (3)
- CHEM 2223: Quantitative Analysis (3)
- PHYSICS 1012: Basic Physics II Lecture (3)
- PHYSICS 1012L: Basic Physics II Laboratory (1)

Year 4

FALL SEMESTER (16 credit hours)
- BIOL 4712: Biochemistry (3)
- CHEM 2633: Organic Chemistry Laboratory (2)
- CHEM 4733: Biochemistry Laboratory (2)
- BIOL/CHEM XXXX: Biochemistry or Biotechnology Elective (3)
- GEN ED EXPLORE: Humanities and Fine Arts (3)
- Elective (3)

SPRING SEMESTER (17 credit hours)
- BIOL/CHEM 4797: Biochemistry and Biotechnology Seminar (1)
- BIOL/CHEM XXXX: Biochemistry or Biotechnology Elective (3)
- CHEM 3302: Physical Chemistry for the Life Sciences (3)
- CHEM 4722: Advanced Biochemistry (3)
- Elective (3)

Last updated May 2024

IT STARTS RIGHT NOW

This is a sample academic map for the courses to take each academic semester/session. This map is not a substitute for academic advisement. Contact your advisor when making final selections.

UNIVERSITY STUDIES
University studies is required for all first-year students and those with less than 24 credit hours.

MILESTONE COURSES
Milestone courses should be taken in the order shown to ensure you stay on a timely and accurate path toward graduation.

SUMMER AND INTERSESSION COURSES
Don't forget that summers and winter breaks are a way to fast-track your route to degree completion – and lighten your load during fall and spring!

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