



The **Bachelor of Science** in

# Chemistry

## **Chemistry is everywhere.**

Chemistry is the central science. All of life depends upon intricate and coordinated chemical reactions. All of the materials of nature and those that are made by humans have properties arising from the details of their chemical structure, and on the properties of the elements, compounds and ions of which they are composed.

## **The Bachelor of Science in Chemistry**

The BS in Chemistry is designed to provide students with the professional training needed to contribute to this dynamic industry. Students are prepared for a career in the chemical industry, graduate work in the chemical sciences, health sciences, medicine, business, marketing or law. The BS degree is intended for those who want to become professional chemists or as preparation for graduate study in chemistry or biochemistry.

Upon completion of the BS in Chemistry, graduates will be able to demonstrate a clear understanding of at least four of the five foundational areas of chemistry (analytical, organic, inorganic, physical and biochemistry). They will be able to solve chemical problems that include both the study of small molecules and macromolecules; understand basic chemical concepts including stoichiometry, states of matter, molecular structure and bonding, thermodynamics, equilibria and kinetics; apply appropriate concepts, investigative and quantitative methods in all sub-disciplines of chemistry research; critically evaluate existing scientific studies to test specific hypotheses addressing unsolved problems in the chemical and life sciences; use computers and required scientific software in data acquisition, processing, presentation of analyses, including statistical and regression analysis; demonstrate basic skills associated with safely performing and properly documenting laboratory experiments in chemistry; demonstrate skills in performing laboratory experiments; demonstrate the ability to work either independently or as a part of a small team; identify and procure information from relevant scientific literature using proper citations and critically evaluate reliability, validity, accuracy, authority, timeliness and point of view or bias; effectively communicate about chemical sciences processes and the results of scientific inquiry; and follow ethical practices in research, experimental interpretation, presentation, citation and application of research.

## Transforming Lives

The Bachelor of Science in Chemistry at UMSL is earned through our College of Arts and Sciences, the academic core of the University of Missouri–St. Louis. Through academic programs offered on- and off- campus, traditional and nontraditional students gain knowledge, skills and intellectual leadership for a variety of career paths, advanced study and research in many academic disciplines.

Graduates are known for their professionalism on the job and their strong sense of civic responsibility. Students in our programs engage in creative and critical thinking, learn to analyze evidence, to appreciate patterns of complexity and to reflect on important issues that impact our daily lives. Students gain skill sets to prepare for a changing workplace that requires flexible, dynamic, and well-educated employees.

Chemistry students have the opportunity to engage in hands-on research projects under the guidance of faculty with full access to all of the departmental facilities. The Chemistry Department maintains four chemical instrumentation centers (X-Ray Diffraction, NMR, Mass Spectrometry and Microscopy) that provide training for students and services for academic institutions and companies across the region. Additionally, chemistry students benefit from the Science Learning Building, a \$32 million addition to the UMSL science complex that provides state-of-the-art, dedicated teaching lab spaces for students.

## Serious education. Serious value.

The Bachelor of Science in Chemistry is designed to provide specialized knowledge, skills and training in a flexible format, with classes currently available in person, online and in a hybrid format. You'll learn from highly qualified educators and researchers who hold terminal degrees from some of the world's most prestigious academic institutions.

The University of Missouri–St. Louis provides the knowledge, resources, tools, skills and support students need to be successful in our programs. Our comprehensive student support services include workshops, tutoring and career services to help you develop skills and strategies to be successful in the classroom and beyond. UMSL welcomes transfer students and our transfer specialists will assist you with getting the most transfer credits possible. We're also committed to increasing access to higher education, and as such, UMSL is consistently ranked number one in affordability in the St. Louis region.

## Learn more at [chemistry.umsl.edu](http://chemistry.umsl.edu)

The University of Missouri–St. Louis is the largest public research university located in Missouri's most populous and economically important region. UMSL provides high-quality, affordable education to one of the most diverse student bodies in the state. No university is better connected to the surrounding region than UMSL. Seventy-three percent of our graduates stay in St. Louis. The region needs a well-equipped workforce with chemistry skills and UMSL is prepared to help you meet those needs. Choose the University of Missouri–St. Louis for chemistry.

## Career Opportunities

Analytical Chemist  
Business Development  
Chemical Engineer  
Chemical Sales and Marketing  
Field Service Engineer  
High School Chemistry Teacher  
Industrial Manager  
Instrumentation Specialist  
Laboratory Manager  
Preparative Chemist  
Product Developer  
Project Manager

### College of Arts & Sciences

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### Department of Chemistry

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