

Choose
UMSL

Chemistry, PhD

The department offers research specialization in the traditional areas of Inorganic, Organic, Physical and Analytical chemistry, and Biochemistry, as well as in the modern fields of organometallic, supramolecular, computational chemistry, laser spectroscopy, drug discovery, carbohydrate chemistry, nanoscience, magnetic molecules and the discovery of new materials. Our laboratories are equipped with the most modern instrumentation and computing resources. These include outstanding NMR, X-ray, Mass Spectrometry, Microscopy and Cell Culture facilities. The Chemistry Department has a strong research emphasis but is of medium size, allowing substantial interaction between research advisors and Ph.D. students. There is an international make-up to the faculty and postdoctoral fellows, and there are graduate students presently in the department from the United States and abroad.

Career Outlook

The greater St. Louis area is a major chemical industry, biotechnology and life sciences center and is home of government laboratories. Many of the chemical, biotechnology and life sciences companies in the area and nationwide need employees who are well-trained in all aspects of contemporary chemistry. This holds true for large companies as well as start-ups. PhD chemists will have an economic perspective in the St. Louis metropolitan region and nationwide. Former graduates are employed in research positions in the chemical and pharmaceutical industries, in academic positions, and in other areas such as high-tech computer applications.

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.

Future Career Options

- Material sciences
- Chemical catalysis
- Semiconductor industry
- Pigment and coatings industry
- Pharmaceutical industry
- Food sector
- Agricultural businesses
- Government laboratories
- Analytical and bioanalytical chemistry
- Higher education

Skills developed by degree completion

- Apply the principles, techniques, and concepts of contemporary synthetic, analytical and theoretical chemistry
- Competently apply laboratory techniques used in chemical and biochemical research, development and production
- Analyze and interpret data and make conclusions based on the data analysis
- Present data and their analysis effectively
- Define and solve problems
- Communicate scientific results clearly and effectively

5-YEAR ACADEMIC MAP

UMSL | Arts &
Sciences
University of Missouri–St. Louis

College of Arts and Sciences
Department of Chemistry & Biochemistry
316 Benton Hall
314-516-5311
umsl.edu/chemistry

Chemistry Advising
316 Benton Hall
314-516-5311
Email: gradchem@umsl.edu

Chemistry, PhD

Year

1

FALL SEMESTER (9 credit hours)

5000-Level Lecture Course (3)
5000-Level Lecture Course (3)
CHEM 6812: Introduction to Graduate Study in Chemistry (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)

SPRING SEMESTER (9 credit hours)

5000-Level Lecture Course (3)
5000-Level Lecture Course (3)
CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)

Year

2

FALL SEMESTER (9 credit hours)

5000-Level Lecture Course (3)
5000-Level Lecture Course (3)
CHEM 6832: Strategies for Independent Research Proposal Development (1)
CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6897: Chemistry Colloquium (1)

SPRING SEMESTER (6 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6822: Introduction to Graduate Research in Chemistry (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (2)

Year

3

FALL SEMESTER (6 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (3)

SPRING SEMESTER (4 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (1)

Year

4

FALL SEMESTER (4 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (1)

SPRING SEMESTER (4 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (1)

Year

5

FALL SEMESTER (4 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (1)

SPRING SEMESTER (4 credit hours)

CHEM 6X87: Problem Seminar (or equivalent) (1)
CHEM 6887: Graduate Student Seminar in Chemistry (1)
CHEM 6897: Chemistry Colloquium (1)
CHEM 6905: Chemical Research (1)

2023-2024

5-YEAR ACADEMIC MAP

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.

- Summer and Interession courses

Don't forget that summers and winter breaks are a way to fast-track your route to degree

- Apply for Graduation

Don't forget that students should apply for graduation one year prior to the intended graduation date, so apply prior to the deadline!



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Degree completed!

