A career in chemistry provides ample opportunities for you to make an innovative and positive difference. Chemists develop the new materials which enable modern technological advances. Biochemists study proteins and enzymes and genes to cure diseases and improve crop production. Medicinal chemists design new drugs to combat diseases around the world. Chemistry-related businesses and industries are at the forefront of the nation’s economic growth.

A degree in chemistry will also prepare you for a career in a variety of health-related professions, including choices such as medicine, dentistry, veterinary science, pharmacy and public health. If you want to teach chemistry, you should pursue the bachelor of arts in education, offered by the College of Education.

WSU’s Department of Chemistry occupies a 98,000 square-foot modern teaching and research facility. Recently renovated McKinley Hall houses state-of-the-art instrumentation and 11 faculty members doing frontier-level research in all sub-disciplines of chemistry. Our department offers you a broad choice of degrees, including American Chemical Society-certified BS degrees in chemistry and biochemistry, the BS in chemistry-pre-medicine, a BA in chemistry, and field majors in biochemistry and chemistry/business. The BS and BA programs can lead to masters and doctoral degrees in chemistry, both of which are offered at Wichita State.

**Bachelor of Science in Chemistry**

Chemists involved in the research and development of new products are responsible for change in many vital areas. The BS in chemistry is for you if you are interested in developing new medicines and vaccines, biomaterials and biosensors, ceramic materials, alternative energy sources, pollution control devices, clean industrial resources, disease- and insect-resistant food crops, cosmetics and food additives—all products that improve the quality of life.

When you receive the BS in chemistry or the biochemistry option – both certified by the American Chemical Society – you are prepared in the fundamentals of inorganic, organic, analytical, and physical chemistry and biochemistry, and will have valuable experience doing original research. You will be ready for a career in chemistry or advanced study in chemistry, medicine or other related fields.

**Bachelor of Arts in Chemistry**

Chemistry-related research meets the challenge of the future head on. Chemists create the materials necessary for an improved quality of life, such as gasoline, plastics, pharmaceutical drugs and food. They design products to moderate environmental chemicals and develop new energy sources for the future. Wichita State’s BA degree in chemistry prepares you for a wide variety of entry-level positions. The BA program requires fewer hours of chemistry than the BS, but by taking additional courses, you may earn certification by the American Chemical Society.

**Bachelor of Science in Chemistry Pre-Medicine**

New research in medicine and treatment modalities means more career opportunities for people with specialized chemistry backgrounds. The chemistry pre-medicine program, with its background in the molecular basis of life processes, is excellent preparation if you are interested in further studies in such professional areas as medicine, dentistry, veterinary medicine, optometry or pharmacy.

**Admission**

When you choose to study chemistry, you will be admitted to the Fairmount College of Liberal Arts and Sciences. You will be assigned a faculty advisor in the chemistry department who will help you develop your program of study and outline specific requirements. If you are still deciding on a major when you start at Wichita State, the Liberal Arts and Sciences Advising Center can help you explore career and major options.

**Related Opportunities**

To broaden your scope, chemistry majors may participate in the American Chemical Society Student Affiliates and regional and national meetings of the American Chemical Society. If eligible, you may be selected for University academic honor societies such as Phi Kappa Phi and Mortar Board.

**General Education Program**

**Well-Rounded Learning**

Wichita State strives to offer the most complete college experience possible to produce well-rounded, successful Shocker graduates. Through general education courses, students explore subjects outside of their major, expanding their knowledge, perspective and skills and making a positive impact on their career and life.
Benefits of general education courses:
- Improved critical thinking skills
- Better communication, written and spoken
- Increased analytical reasoning and problem solving
- An acquired knowledge of natural and social science, the arts and humanities

Improve skills by taking courses that include diversity content, study abroad experiences, service learning and experience-based learning.

Major Requirements

BS Chemistry (ACS Certified)

1. American Chemical Society certified
2. General Chemistry (211, 212) - 10 credit hours
3. Organic Chemistry (531, 532) - 10 credit hours
4. Inorganic Chemistry with lab (514, 515, 516) - 8 credit hours
5. Analytical Chemistry (523) - 4 credit hours
6. Instrumental Methods (524) - 4 credit hours
7. Physical Chemistry with lab (545, 546, 547) - 8 credit hours
8. Biochemistry (661 or both 662 & 663) - 3 or 6 credit hours
9. Independent Study & Research (690) - 2 credit hours
10. General Biology I (210) - 4 credit hours
11. Precalculus Mathematics & Calculus I-III - 18 credit hours
12. University Physics I & II with labs - 10 credit hours
13. Professional electives - 4 credit hours

If the Biochemistry option is desired, Chemistry 662 and 663 must be taken, and add:
- Biochemistry lab (664) - 3 credit hours
- General Biology II (211) - 4 credit hours
- Molecular Cell Biology (420) - 4 credit hours

BA Chemistry

1. General Chemistry (211, 212) - 10 credit hours
2. Organic Chemistry (531, 532) - 10 credit hours
3. Analytical Chemistry (523) - 4 credit hours
4. Instrumental Methods (524) - 4 credit hours
5. Physical Chemistry with lab (545, 546, 547) - 8 credit hours
6. Precalculus Mathematics & Calculus I-III - 18 credit hours
7. University Physics I & II with labs - 10 credit hours
8. Foreign Language - 15-20 credit hours
9. Other options are available to include study of inorganic or biochemistry.

KSDegreeStats.org

BS Chemistry - Pre-medicine

1. General Chemistry (211, 212) - 10 credit hours
2. Organic Chemistry (531, 532) - 10 credit hours
3. Analytical Chemistry (523) - 4 credit hours
4. Biochemistry (662, 663) - 6 credit hours
5. Independent Study & Research (690) - 2 credit hours
6. Upper-division Chemistry Electives - 12-13 credit hours
7. Calculus I & II - 10 credit hours
8. Physics courses above 200 (one year sequence) - 10 credit hours
9. General Biology (210, 211) - 4 credit hours
10. Advanced biology elective(s) - 8-10 credit hours

BS Chemistry, Chemistry/Business Field Major

1. General Chemistry (211, 212) - 10 credit hours
2. Organic Chemistry (531, 532) - 10 credit hours
3. Analytical Chemistry (523) - 4 credit hours
4. Inorganic or Instrumental Methods - 3 or 4 credit hours
5. Biochemistry (either 661 or 662 & 663) - 3 or 6 credit hours
6. Calculus I or Business Calculus - 5 or 3 credit hours
7. Accounting (210 and 220) - 6 credit hours
8. Economics (201 and 202) - 6 credit hours
9. Legal Environment of Business - 3 credit hours
10. Financial & Organizational Management (FIN 340, MGMT 360) - 6 credit hours
11. Marketing (300, 405, 608) - 9 credit hours

BS Chemistry, Field Major, Biochemistry

1. General Chemistry (211, 212) - 10 credit hours
2. Organic Chemistry (531, 532) - 10 credit hours
3. Analytical Chemistry (523) - 4 credit hours
4. Biochemistry (662, 663, 664) - 9 credit hours
5. Special Topics in Biochemistry (666) - 3 credit hours
6. Research in Biochemistry (669) - 4 credit hours
7. General Biology (210, 211) - 8 credit hours
8. Genetics (419) - 4 credit hours
9. Molecular Cell Biology (420) - 4 credit hours
10. Calculus I or Business Calculus - 5 or 3 credit hours
11. Precalculus Mathematics (112) - 5 credit hours
12. General College Physics (213, 214) - 10 credit hours
13. Biochemistry electives - 21 credit hours

Please contact the chemistry department for specific course information or visit our Web site at www.wichita.edu/chem.

There are additional requirements to earn certification to teach chemistry. Consult the College of Education or request the “Secondary Education: Sciences” information sheet. Some of the complementary courses listed will count toward the General Education requirements.

Benefits of general education courses:
- Improved critical thinking skills
- Better communication, written and spoken
- Increased analytical reasoning and problem solving
- An acquired knowledge of natural and social science, the arts and humanities

Improve skills by taking courses that include diversity content, study abroad experiences, service learning and experience-based learning.

For more information on Chemistry at WSU visit wichita.edu/chemistry or call (316) 978-3120.