Chemistry

at Benedictine University

Why study chemistry at Benedictine?

- The Chemistry program is approved by the American Chemistry Society (ACS).
- All Benedictine University Chemistry faculty members have a Ph.D. in one of the five major areas of chemistry, including organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry and biochemistry.
- Chemistry students use modern instruments and tools either in classroom laboratories or research laboratories. In-house instruments include a new 300-megahertz nuclear magnetic resonance spectrometer, several instruments capable of performing optical spectroscopy in order to observe real-time chemical reactions via kinetic analyses, an atomic absorption spectrometer, electrochemical work stations, gas and liquid chromatographs, an inert atmosphere dry glove-box with a solvent purification system and infrared and ultraviolet/visible spectrophotometers. Students also utilize specialized software and hardware capable of performing state-of-the-art electronic structure calculations to simulate chemical systems.
- All Chemistry students perform current and advanced chemical research that may be published in peer-reviewed journals.
- The Benedictine University student chapter of the ACS has received national awards and has been recognized as an outstanding chapter multiple times.
- Chemistry research students have presented their results at national ACS meetings and other regional and local meetings in the Chicago area.
- Benedictine University's proximity to Chicago gives students access to potential internships at numerous facilities off campus, such as Argonne National Laboratory, the DuPage County Forensic Science Center, Nalco, BP and other industrial, academic and government laboratories.
- The Birck Hall of Science is properly equipped with research and classroom laboratory space and modern equipment.
- Students have the opportunity to perform research during the summer months in our Natural Science Summer Student Research Program.
- Students have the option to become certified to teach chemistry at the high school level.

What careers are available with a degree in Chemistry?

Chemistry is the science of matter and its interactions. Anything that can be felt, seen, smelled, tasted and heard has something to do with chemicals. Career options with a chemistry degree are extensive. They range from working on cures for diseases and protecting our environment to making cosmetics and researching renewable energy sources. As a graduate of Benedictine, students will have not only gained technical skills but also the broad knowledge associated with a liberal arts education. A major in Chemistry at Benedictine prepares students for the technical skills and knowledge that are required to enter graduate or professional school and obtain a job in the chemical industry.

How does the program work?

Students completing a major in Chemistry will study all five areas of chemistry: organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry and biochemistry. Students will develop knowledge in spectral analysis, chemical literature, chemical research and learn advanced topics in chemistry taught by experts in their fields. Graduates will also have a strong background in calculus and physics, and have the option to complete minors in both areas. Chemistry majors must complete a research project and are encouraged to present their results at a professional meeting.

Recommended Program

Bachelor of Science in Chemistry

(Calculus I Math Placement)

FRESHMAN

Calculus for Physical Sciences I	5
Writing Colloquium	3
General Chemistry I and Lab	4
University Physics I and Lab	5
	17

Calculus for Physical Sciences II	4
Research Writing	3
General Chemistry II and Lab	4
University Physics II and Lab	5
	16

JUNIOR

Inorganic Chemistry	3
Classical Thermodynamics	3
Physical Chemistry I Lab	1
Advanced Chemistry * or elective	3
Mode of Inquiry electives	6
	16

Quantum and Statistical Mechanics	3
Physical Chemistry II Lab	1
Inorganic Synthesis Lab	1
Advanced Chemistry *or elective	3
Mode of Inquiry electives	6
	14

SOPHOMORE

Calculus with Analytics III	4
Organic Chemistry I and Lab	4
Analytical Chemistry I and Lab	4
Basic Speech	3
	15

Organic Chemistry II and Lab	4
Analytical Chemistry II and Lab	4
Research Literature	1
Catholic and Benedictine Intellectual Traditions (IDS 201)	3
Elective	3
	15

SENIOR

Advanced Chemistry* or elective	3
Research	2
Human Dignity and the Common Good (IDS 301)	3
Mode of Inquiry electives	6
	14

Advanced Chemistry* or elective	3
Research	2
Electives	6
Modes of Inquiry elective	3
	14

*Two advanced Chemistry courses are required.

Recommended Program

Bachelor of Science in Chemistry
(Introduction to Calculus Math Placement)

FRESHMAN

Introduction to Calculus I and Lab	5
Writing Colloquium	3
General Chemistry I and Lab	4
Mode of Inquiry elective	3
	15

Applications of Calculus I	4
Research Writing	3
General Chemistry II and Lab	4
Mode of Inquiry electives	6
	17

SOPHOMORE

Calculus for Physical Sciences II	4
Organic Chemistry I and Lab	4
University Physics I and Lab	5
Basic Speech	3
	16

Calculus III	4
Organic Chemistry II and Lab	4
University Physics II and Lab	5
Research Literature	1
Catholic and Benedictine Intellectual Traditions (IDS 201)	3
	17

JUNIOR

Classical Thermodynamics	3
Physical Chemistry I Lab	1
Analytical Chemistry I and Lab	4
Mode of Inquiry elective	3
	11

Quantum and Statistical Mechanics	3
Physical Chemistry II Lab	1
Analytical Chemistry II and Lab	4
Advanced Chemistry* or elective	3
Mode of Inquiry electives	6
	17

SENIOR

Inorganic Chemistry	3
Research	2
Advanced Chemistry* or elective	3
Human Dignity and the Common Good (IDS 301)	3
Mode of Inquiry elective	3
	14

Inorganic Synthesis Lab	1
Research	2
Advanced Chemistry* or elective	6
Electives	6
	15

Variations of this program are available to fit the student's needs.

*Two advanced Chemistry courses are required.