

# Chemistry: Chemistry Option

## Bachelor of Arts (BA)

# Chemistry Option

Chemistry is the branch of natural science that deals with the properties and classification of matter, the changes that matter undergoes and the energy associated with these changes. Chemists study substances at the atomic and molecular level and how different substances interact with each other. Research by chemists increases our knowledge about chemicals and their roles in the natural world and has led to the discovery and development of new and improved products and advances in medicine, agriculture, food processing and many other fields. Chemists are employed by industry, government, academia, non-profits and in the entrepreneurship sector. Those interested in a challenging and rewarding career that provides financial security, promotes self-respect and offers the opportunity to work on stimulating and breakthrough projects should consider a career in chemistry.

### Becoming Career Ready...

/ Faculty-mentored research and guidance will help you develop the professional skills needed for success in a competitive job market and/or advanced study in graduate and professional programs.

/ The BA Chemistry program prepares graduates to enter the workforce in a variety of fields, such as chemical and pharmaceutical manufacturing, product development, quality control, sales (pharmaceuticals, chemicals, instruments), technical marketing, cheminformatics, chemical safety and hygiene, hazardous waste management, environmental protection, regulatory affairs and technical writing, to name a few. Example job titles include chemist, research scientist, quality assurance manager and associate research scientist. The BA Chemistry curriculum also provides an excellent basis for graduate and professional areas of study.

/ 100% of Southeast programs offer real-world experience. BA Chemistry students earn this experience through undergraduate research or an internship.

/ BA Chemistry students will study in the state-of-the-art, first-rate learning environment provided by the recently renovated Magill Hall of Science while gaining hands-on experience and training using a variety of lab equipment, chemical instruments and tools in laboratory courses and undergraduate research.

/ The path to a successful career starts with you! You can maximize your career development by working closely with Career Services and Southeast faculty – they are here to help you connect your passions, interests and skills to jobs and opportunities in the field. Career Services provides professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities and more.

### Internships, Employment Opportunities, Graduate Schools and Programs of Recent Graduates:

- Biokyowa
- Buzzi Unicem USA
- Eli Lilly
- Exxon Mobil
- Monsanto
- Pharmacia (currently part of Pfizer)
- PPG Industries
- Proctor and Gamble
- MilliporeSigma
- Missouri State Highway Patrol Crime laboratory
- Indiana University
- John Hopkins University
- Penn State University
- Purdue University
- Southern Illinois University (School of Medicine)
- Texas A & M
- University of Illinois (School of Medicine, Graduate School)
- University of Missouri – Columbia (School of Medicine, Graduate School)
- University of Notre Dame
- University of Wisconsin – Madison
- Washington University
- Numerous other graduate/professional programs of study and employers

### Special Options with Chemistry

Southeast offers a Master of Natural Science in Applied Chemistry.

### Career Information

To learn more about career opportunities in chemistry visit:  
<https://www.acs.org/content/acs/en/careers/college-to-career.html>.

According to the United States Bureau of Labor Statistics, there were 96200 chemistry related jobs in 2016. This number is expected to increase by 7% by 2026. Source:  
<https://www.bls.gov/ooh/life-physical-and-social-science/chemists-and-materials-scientists.htm>.

### Transfer and Dual Credit Students

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at [semo.edu/transfercredit](http://semo.edu/transfercredit).

**To learn more**  
Office of Admissions  
(573) 651-2590  
[admissions@semo.edu](mailto:admissions@semo.edu)  
[semo.edu](http://semo.edu)

**To explore**  
the College of Science,  
Technology, Engineering and  
Mathematics online, visit  
[semo.edu/stem](http://semo.edu/stem)

**For advising**  
Center for Academic Advising  
[semo.edu/advising](http://semo.edu/advising)

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This is a guide based on the 2019-2020 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use Degree Works to monitor their individual progress.

### CURRICULUM CHECKLIST

*"Critical Courses" are italicized and bolded. Data shows that students who have completed this course in the first two years and have earned the noted grade are most likely to complete this program of study.*

#### Chemistry: Chemistry option – minor required

##### Chemistry Required Courses:

- \_\_\_ *CH185 General Chemistry (5)*
- \_\_\_ *CH186 Foundations of Inorganic Chemistry (3)*
- \_\_\_ CH187 Inorganic Chemistry and Qualitative Analysis Laboratory (2)
- \_\_\_ CH271 Foundations of Analytical Chemistry (5)
- \_\_\_ CH306 Survey of Physical Chemistry (3)
- \_\_\_ CH313 Physical Chemistry Laboratory (3)
- \_\_\_ *CH340 Essentials of Organic Chemistry (5)*
- \_\_\_ CH498 Professional Presentation in Chemistry (1)
- \_\_\_ CH531 Foundations of Biochemistry (3)
- \_\_\_ OR
- \_\_\_ UI331 Foundations of Biochemistry (3)
- \_\_\_ CH533 Biochemistry Laboratory (2)
- \_\_\_ UI443 Professional Experience in Chemistry (3)

##### Additional Requirements – 13 Hours Required

- \_\_\_ MA139 Applied Calculus (3)
- \_\_\_ PH120/020 Introductory Physics I (5)
- \_\_\_ PH121/021 Introductory Physics II (5)

*Note: Completion of an experiential learning project (undergraduate research or internship) in the major is required. The departmental advisor should be consulted for information about this requirement.*

#### Minor required for this option – 15-21 Hours

**General Education Requirements** – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 3 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination

NOTE: This option is ideally suited to those who wish to double major.

### SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
<b>FIRST YEAR</b>	UI100	3	<i>CH186</i>	3
	EN100	3	CH187	2
	<i>CH185/085/005</i>	5	Minor Course	3
	<i>MA139</i>	3	General Education	3
			General Education	3
	<b>Total</b>	<b>14</b>	<b>Total</b>	<b>14</b>
Milestone: maintain 2.0 cumulative GPA				
<b>SECOND YEAR</b>	CH271/071	5	PH121/021	5
	<i>CH340/040</i>	5	Minor Course	3
	PH120/020	5	General Education	3
			General Education	3
			General Education	3
	<b>Total</b>	<b>15</b>	<b>Total</b>	<b>17</b>
Milestone: maintain 2.0 cumulative GPA				
<i>(summer courses are encouraged to avoid 18 hour semesters)</i>				
<b>THIRD YEAR</b>	CH306	3	UI443	3
	CH313	3	IU/UI3XX	3
	General Education	3	Minor Course	3
	General Education	3	Minor Course	3
	General Education	3	Elective	3
	<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>
Milestone: maintain 2.0 cumulative GPA				
<b>FOURTH YEAR</b>	CH531 or UI331	3	CH498	1
	General Education	3	CH533	2
	General Education	3	Minor Course	3
	Minor Course	3	Electives	9
	Elective	3		
	<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>
Milestone: maintain 2.0 cumulative GPA				

A "Milestone" signifies a significant stage for a student in the completion of a degree.

**Degree requirements for all students:** a minimum of 120 credit hours, completion of the General Education program, Writing Proficiency Exam (WP003).

A minimum 2.0 GPA in the major and overall are required to graduate with a BA in Chemistry degree.

Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements (i.e. minimum GPA and coursework) for your program of study.