Chemistry: Chemistry Option

Bachelor of Arts (BA)

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. 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 other fields. If you are interested in a rewarding career that provides financial security, promotes self-respect and gives you the opportunity to work on stimulating and breakthrough projects, then a career in chemistry may be right for you.

This degree option offers a broad exposure to chemistry and requires a minor. Students interested in pursuing careers that use chemistry, such as patent law, technical sales, and environmental testing should choose this major.

Chemistry students will...
- Gain a rigorous foundation in chemistry, science, and math in the context of a broad university education.
- Interact closely with experienced faculty in and out of the classroom who are recognized for their writing, training, professional affiliations, and expertise.
- Study in the state-of-the-art, first-rate learning environment provided by the newly renovated Magill Hall of Science.
- Have opportunities to pursue research and scholarship that develop independent thinking and problem solving.
- Have employment opportunities within the department that can provide chemistry-related work experience prior to graduation.

Career Planning
Approximately 35-40% of chemistry graduates pursue graduate or professional study immediately upon graduation. Employment opportunities for chemists exist in a variety of fields, such as biotechnology, chemical manufacturing, environmental monitoring and compliance, industrial hygiene, materials science, pharmaceutical manufacturing, product development, quality control, sales (pharmaceuticals, chemicals, instruments), and technical management.

Internship Opportunities, 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
- Sigma-Aldrich
- 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 (School of Medicine, Graduate School)
- University of Notre Dame
- University of Wisconsin – Madison
- Washington University
- Numerous other graduate/professional programs of study and employers

Career Services, located in Academic Hall 057, provides professional career advising to guide students in their career development.

| Demonstrated Career Proficiency is a Requirement of all Southeast Students |
|---|---|
| CL001/CL002 First Semester | Complete the FOCUS2 assessment and develop a Career Action Plan. |
| CL003 Junior Year | Students gain information about career planning and job searching resources. |
| CL004 Senior Year | Students demonstrate advanced proficiency by identifying a position in their field, developing a cover letter, and tailoring a resume for the position. Materials are critiqued to ensure preparedness for a successful job search. |

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**Degree Map**

**Bachelor of Arts (BA)**

This is a guide based on the 2014-2015 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 DegreeWorks to monitor their individual progress.

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**Curriculum Checklist**

Business students must be admitted to the College of Business prior to enrolling in upper division (300 level or above) business courses.

**Chemistry Required Courses – 36 Hours Required**

- CH185 General Chemistry (5)
- CH186 Foundations of Inorganic Chemistry (3)
- CH187 Inorganic Chemistry and Qualitative Analysis Laboratory (2)
- CH271 Foundations of Analytical Chemistry (5)
- CH311 Foundations of Physical Chemistry (4)
- CH313 Physical Chemistry Laboratory (3)
- CH341 Foundations of Organic Chemistry (4)
- CH342 Organic Chemistry Laboratory I (1)
- 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 – 15-21 Hours Required**

**University Studies Requirements (not already listed above):**

- UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literary Expression, Behavioral Systems, Living Systems, Development of a Major Civilization, Economic Systems, Political Systems, Social Systems, and one IU/UI3XX*

* Note: Two IU/UI3XX courses are required if CH531 Foundations of Biochemistry is taken rather than UI331 Foundations of Biochemistry.

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**Sample Four-Year Plan**

**Chemistry: Chemistry Option**

Requirements for the 2014-2015 Undergraduate Bulletin

<table>
<thead>
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<th>Course #</th>
<th>Hrs</th>
<th>Course #</th>
<th>Hrs</th>
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<tr>
<td>UI100</td>
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<td>CH186</td>
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<td>Written Expression</td>
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<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>14</td>
<td>Total</td>
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</table>

**First Year**

- CH271   5  CH341   4  
- PH120/020 5  CH342   1  
- Economic Systems 3  PH121/021 5  
- Minor Course 3  Artistic Expression 3  
- Oral Expression 3  
- Total 16  Total 16  

Note: (summer courses are encouraged to avoid 18 hour semesters)

**Second Year**

- CH311 4  UI443 3  
- CH313 3  IU/UI3XX 3  
- Behavioral Systems 3  Minor Course 3  
- Living Systems 3  Minor Course 3  
- Political Systems 3  Elective 3  
- Total 16  Total 15  

**Third Year**

- CH531 or UI331 3  CH498 1  
- Literary Expression 3  CH533 2  
- Develop. of Major Civil. 3  Minor Course 3  
- Minor Course 3  Electives 8  
- Elective 3  
- Total 15  Total 14  

Degree requirements for all students: a minimum of 120 credit hours, completion of University Studies program, career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the freshman and senior levels.

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 DegreeWorks for additional graduation requirements (i.e. minimum GPA and coursework) for your program of study.

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**To learn more**

Office of Admissions
(573) 651-2590
admissions@semo.edu
www.semo.edu

**To explore the College of Science, Technology, and Agriculture online, visit**

www.semo.edu/costa/

**For advising**

College of Science, Technology and Agriculture
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