Chemistry Education

Bachelor of Science in Education (BSED)

The B.S. Ed. in Chemistry Education prepares highly qualified teachers of chemistry. Students are certified to teach high school chemistry once all degree requirements and assessments are passed. Students have an exceptional program of professional preparation including field experiences, theory and pedagogy courses. The major is well rounded helping teachers develop a strong foundation of chemical knowledge. Once initial certification is obtained, additional areas of science may be added by passing the Missouri Content Assessment exams, as of present.

Science teachers are in high demand across most of the United States and particularly in Missouri. Because of this there are forgiveness programs for different types of Federal loans in return for teaching science in a high needs school district (most in Missouri). In addition, students may be eligible to participate in the TEACH grant program which can pay up to $16,000 in college costs over four years and has a similar loan forgiveness program. Be sure to consult the financial aid office for details.

Chemistry Education students will...

- Develop a strong knowledge of chemistry
- Learn up-to-date techniques for teaching in the sciences
- Have substantial and increasingly challenging teaching experiences in schools before student teaching
- Know how to differentiate instruction to help all students succeed
- Be prepared to integrate technology in teaching

Career Planning

Career preparation is part of the mission of Southeast. In fact, more than 90% of Southeast students participate in internships, clinical opportunities, student teaching, research assistantships, and study abroad.

98% of students who searched for teaching positions entered the field within two years of graduation.

Professional career counselors are available for all students. The Office of Career Services in Academic Hall 057 can provide students with professional career counseling, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

Employment Opportunities and Graduate Schools of Recent Graduates

- Graduate Schools: Southeast Missouri State – MNS in Applied Chemistry, Biology or Science Education; University of Missouri-Ph.D.; University of Miami, Ohio – Ph.D. in Chemistry Education
- Employment at schools in Cape Girardeau, Jackson, Orion, Kelly, Arcadia Valley, Farmington, Fredericktown, Sikeston, Dexter, Ste. Genevieve, Cuba, Sullivan, Scott County Central, Puxico, Ellington, Florida, Herculaneum, Perryville, Richland, St. Louis area, Windsor, Caledonia, Advance, Desoto, Kansas City, Rockwood, North City, South Iron County, California, Charleston, Portageville, Cape Career Center, Shawnee, Anna-Jonesboro. Most had secured positions by graduation.

Admission Requirements

Students graduating prior to spring 2017
- Cumulative 2.50 GPA
- Passage of CBASE or Missouri General Education Assessment (MoGEA)

Students graduating spring 2017 or later
- Cumulative 2.75 GPA
- Pass all sections of the Missouri General Education Assessment Current Pass Scores for MoGEA
  - English - 186
  - Math - 183
  - Science - 183
  - Social Studies – 183

All students must have:
- 42 hours of course credits
- Missouri Educator Profile (MEP) results on file
- Passage of all sections of the Missouri General Education Assessment (MoGEA) test.
- ED 280 Introduction to Teaching as a Profession with a grade of “B” or above
- PY222 Development of the Adolescent

Additional Information

The state of Missouri has high expectations for future educators. Students matriculating into education programs must meet the following standards to be recommended for licensure following degree completion.

Students graduating spring 2017 or later
- Cumulative 2.75 GPA
- GPA of 3.0 in area of content and pedagogy courses
- Pass the Missouri Content Area Exam in Chemistry
- Pass the Missouri Preservice Teacher Assessment
- Fulfill the assessment of the Missouri Educator Profile
- Complete a FBI background check

Demonstrated Career Proficiency is a Requirement of all Southeast Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PY222</td>
<td>Development of the Adolescent</td>
<td>3</td>
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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 & Agriculture online, visit
www.semo.edu/costa

For advising
Center for Academic Advising - North
(573) 651-5090
www.semo.edu/advising
advisingnorth@semo.edu

Chemistry
Education
This is a guide based on the 2016-2017 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.

**CURRICULUM CHECKLIST**

*Critical Courses* are italicized and bold. 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.

*(Curriculum pending state approval)*

**Education Courses- 47 Hours Required**

A grade of 'C' or better is required in education courses, with the exception of ED280 which requires a grade of 'B' or better.

- **ED280** Introduction to Teaching (3)
- **EF400** Student Teaching Seminar (1)
- **EX380** Psychology and Education of the Exceptional Child (3)
- **PY222** Development of the Adolescent (3)
- **SE307** Reading/Writing in the Content Area (3)
- **SE320** Techniques of Teaching Science (3)
- **SE350** Pedagogy 1: Principles of Effective Teaching (3)
- **SE355** Field II (3)
- **SE365** Pedagogy 2: Secondary School (4)
- **SE380** Advanced Field (3)
- **SE385** Pedagogy 3: Advanced Methods of Middle and Secondary Teaching (3)
- **SE390** Instructional Interventions for Middle and Secondary Students with Special Literacy Needs (3)
- **SE465** Student Teaching (12)

**Chemistry Education – 53 Hour Major - No Minor Required**

Required Courses:

- **CH 185** General Chemistry (5)
- **CH 186** Foundations of Inorganic Chemistry (3)
- **CH 187** Inorganic Chemistry & Qualitative Analysis (2)
- **CH 271** Foundations of Analytical Chemistry (5)
- **CH 306** Foundations of Physical Chemistry (3)
- **CH 341** Foundations of Organic Chemistry (4)
- **CH 342** Organic Chemistry Lab I (1)
- **CH 405** Engineering in Science Education (1)
- **MA 134** College Algebra (3)
- **MA 139** Applied Calculus (3)
- **PH 120** Introductory Physics I (5)
- **UI 331** Found of Biochemistry (3)
- **UI 422** Scientific Reasoning (3)
- **UI 443** Professional Experience in Chemistry (3)

Choose 3 Hours From:

- **BS 108** Biology for Living (3)
- **BS 218** Biological Science: A Process Approach (3)

Choose one of the following:

- **GO 110** Physical Geology (3)
- **GO 220** Meteorology (3)
- **GO 320** Oceanography (3)
- **UI 318** Earth Science: Process Approach (3)

Choose one of the following Environmental Science Electives:

- **BI 332** General Ecology (3)
- **BS 105** Environmental Biology (3)
- **CH 450/EV 450** Environmental Chemistry (3)
- **GO 150** Earth Science: Environmental Hazards (3)
- **GO 305** Environmental Geoscience (3)
- **UI 360** Recycling & Waste Management (3)
- **UI 372** Earthquakes & Society (3)

University Studies Requirements (not already listed above):

- UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literary Expression, Development of a Major Civilization, Economic Systems, Political Systems, Social Systems

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**SAMPLE FOUR-YEAR PLAN**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Fall Semester</th>
<th>Hrs</th>
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<td>Total</td>
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Milestone: Maintain 2.75 cumulative GPA, Complete MEP

| Course # | Spring Semester | Hrs | | |
|----------|-----------------|-----|-----|
| BS106 or BS218 | 3 | ED280 | 3 |
| CH271 | 5 | CH341 | 4 |
| MA139 | 3 | CH342 | 1 |
| Economic Systems | 3 | PH120 | 5 |
| Political Systems | 3 | Env. Science Elective | 3 |
| **Total** | 17 | Total | 16 |

Milestone: Maintain 2.75 cumulative GPA, Passing score MoGEA

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<th>Hrs</th>
<th>Course #</th>
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<td>SE350</td>
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<td>GO110 or 220 or 320 or UI 318</td>
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<td>UI331</td>
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<td>SE307</td>
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<td>UI422</td>
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<td>SE355</td>
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<tr>
<td>Artistic Expression</td>
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<tr>
<td>Oral Expression</td>
<td>3</td>
<td>UI443</td>
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Milestone: Passing score Mo Content Exam, GPA in major 3.0

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<th>Hrs</th>
<th>Course #</th>
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<td><strong>Total</strong></td>
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<td>Total</td>
<td>13</td>
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</table>

Milestone: all content and professional education coursework completed

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 University Studies program, career proficiencies (CUR101-104), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the senior level. Refer to the Undergraduate Bulletin or DegreeWorks for additional graduation requirements (i.e. minimum GPA and additional options) for your program of study.

Students have the option of adding another area of concentration or a minor to this degree.

Revised 3/28/2016