



Experience
Southeast...Experience
Success

DEPARTMENT OF CHEMISTRY

Bachelor of Science in Education (Grades 9-12) Chemistry Education

Chemistry is the branch of natural science that is concerned with the description and classification of matter, with the changes which matter undergoes, and with the energy associated with each of these changes. The BS in Ed (Unified Science - Chemistry Endorsement) - certifies one to teach any level chemistry course and first year biology, earth science, physics, and physical science courses in Missouri, but requires at least one extra semester to complete the requirements. It is one of two options in chemistry education. The BS in Ed (Chemistry Education) certifies one to teach high school chemistry courses only, and meets minimum State of Missouri certification requirements. Additional coursework and other requirements must be fulfilled in order to teach other high school science courses and Advanced Placement courses.

CAREER OPPORTUNITIES:

Secondary School Teacher, Environmental Educator, Pharmaceutical Sales Representative, Textbook Sales Representative, Educational Administration, Graduate School in Education or Chemistry, Chemical Industry

EMPLOYMENT OUTLOOK:

Excellent; there is a severe nationwide shortage of chemistry teachers. Contact the Career Services Office for current information on prospects for employment.

SUGGESTED HIGH SCHOOL PREPARATION FOR MAJOR:

4 units English, 3 units Science (Biology, Chemistry, Physics), and Math through Trigonometry and Pre-calculus.

Requirements for B. S. in Education Major – Chemistry Education

	Credit Hours
University Studies Core Curriculum (Not already included in Required Courses)	24*
The University Studies Core Must include:	
BS108 Biology for Living	3
OR	
BS218 Biological Science: A Process Approach	3
EN140 Rhetoric and Critical Thinking	3
PS103 U.S. Political Systems	3
SC105 Fundamentals of Oral Communication	3
US105 or US107 American History I or II	3
UI-100 First Year Seminar	3
EN100 English Composition	3
Required Chemistry Endorsement Courses (pre-requisites)	32
CH185 General Chemistry (MA102 or equiv)	5**
CH186 Foundations of Inorganic Chemistry (CH185)	3
CH187 Inorganic Chemistry and Qualitative Analysis Laboratory (CH186 pre or co)	2
CH271 Foundations of Analytical Chemistry (CH186 and CH187) (Fall Only)	4
CH311 Foundations of Physical Chemistry I (CH271, PH121 or PH231, MA139 or MA140) (Fall only)	4
CH313 Physical Chemistry Lab (CH311)	3
CH341 Foundations of Organic Chemistry I (CH186 and CH187)	4
CH342 Organic Chemistry Laboratory I (CH341 pre or co)	1
UI331 Foundations of Biochemistry (CH341 and CH342) (Fall only)	3**
UI443 Professional Experience in Chemistry (CH180, CH181, or CH185) (Spring only)	3**
Other Required Courses	25
MA134 College Algebra (MA 102 with a grade of CR or MA 095 with a grade of 'C' or higher or ACT Math score of 18-20 with MA 095 placement score of 14 or higher or ACT Math score of 21 or higher.)	3**
MA139 Applied Calculus (MA134 or equiv.)	3**
PH120/020 Introductory Physics I (MA133 and MA134 or equiv.)	5
PH121/021 Introductory Physics II (PH120)	5
OR	
PH230/030 General Physics I (MA140)	5
PH231/031 General Physics II (PH230, MA240 pre or co)	5
UI422 Scientific Reasoning	3**
Choose One of the Following:	
GO110 Physical Geology	3
GO220 Meteorology	3
GO320 Oceanography (GO220)	3
UI318 Earth Science: A Process Approach	3
Choose One of the Following:	
BI332 General Ecology	3
BS105 Environmental Biology	3

CH450/EV450 Environmental Chemistry (CH341 and CH342, or consent of instructor) (Spring only)	3
GO150 Earth Science: Environmental Hazards	3
GO305 Environmental Geoscience	3
UI360 Recycling and Waste Management	3
UI372 Earthquakes and Society	3
Professional Education Courses	44
Block 1	
PY 222 Development of the Adolescent	3**
ED 251 Intro to MSE Technology	2
ED 250 Intro to MSE Teaching	2
Block II	
EF 304 School & Society	2
SE 305 Secondary Block II Field Experience	2
SE 306 Theories of Learning & Management	2
SE 307 Teaching Reading/Secondary School	2
SE 308 Fund of High School Education	3
SE 275 Diversity in America's Schools	3**
Block III	
EX 390 Psychology & Educ of Except Child (3)	3
SE 300 Technology to Enhance Learning (2)	2
SE 320 Techniques of Teaching Science (3)	3
SE 370 Secondary Block III Field Experience (2)	2
Block IV	
EF 400 Seminar	1
SE 463 Student Teaching Sec. I	6
SE 464 Student Teaching Sec. II	6
WP003 75 Hour Writing Exam	0
CL001-004 Career Linkages	0
Minimum Degree Requirement	131

*Does not include hours for University Studies courses contained in core curriculum.

**University Studies course

Notes

2. CL001, CL002, CL003, CL004 (Career Linkage sessions) 0 credit (Required for students entering Southeast in fall, 2005 or later)
3. Courses offered both fall and spring unless otherwise indicated.

**B.S. in Education
(Chemistry Education)
A Possible 8 Semester Course Sequence***

First Semester	Hrs.	Second Semester	Hrs.
UI100 First Year Seminar	3	CH186 Foundations of Inorganic Chem.	3
CH185 General Chemistry Lecture	5	CH187 Inorganic Chem. and Qual. Anal. Lab	2
CH085 General Chemistry Lab.	0	MA139 College Algebra	3
CH005 General Chemistry Rec.	0	University Studies Elective	6
MA134 College Algebra	3	EN140 Rhetorical & Critical Thinking	3
EN100 English Composition	3		
University Studies Elective	3		
First Summer			
University Studies Elective**	3		
Third Semester			
Third Semester	Hrs.	Fourth Semester	Hrs.
PY-222 Develop. of the Adolescent	3	CH341 Foundations of Organic Chemistry	4
ED251 Intro. to MSE Technology	2	CH342 Organic Chemistry Lab I	1
ED250 Intro. to MSE Teaching	2	GO110 Physical Geology	3
CH271 Foundations of Anal. Chemistry	4	OR	
PH120 Intro. Physics I Lecture	5	GO220 Meteorology	3
PH020 Intro. Physics I Lab	0	OR	
		UI318 Earth Sci.: A Process Approach	3
		PH121 Intro. Physics II Lecture	5
		PH021 Intro. Physics II Lab	0
		University Studies Elective	3
Fifth Semester			
Fifth Semester	Hrs.	Sixth Semester	Hrs.
EF304 School & Society	2	UI443 Prof. Experience in Chemistry	3
SE305 Secondary Block II Field Exper.	2	UI422 Scientific Ethics	3
SE306 Theories of Learning and Manage.	2	EX 390 Psychology & Educ of Except Child	3
SE307 Teaching Reading/Second. School	2	SE 300 Technology to Enhance Learning	2
SE308 Fund. Of HS Education	3	SE 320 Techniques of Teaching Science	3
SE275 Diversity in America's Schools	3	SE 370 Secondary Block III Field Experience	2
University Studies Elective	3	WP003 75 Hour Writing Exam	0
Seventh Semester			
Seventh Semester	Hrs.	Eighth Semester	Hrs.
UI331 Foundations of Biochemistry	3	EF400 Seminar	1
CH311 Foundations of Physical Chemistry	4	SE463 Student Teaching Section I	6
CH313 Physical Chemistry Lab	3	SE464 Student Teaching Section II	6
BI/BS/CH/GO/UI Elective (See list)	3		
University Studies Electives	3		

*This is only provided as an example of an 8 semester study plan. The exact 8 semester sequence for each student will depend on a number of factors: Bulletin year under which a student begins at Southeast (odd or even), meeting of prerequisites, frequency of course offerings, transfer credits, number of repeated courses, etc. Each student should consult course offerings/rotations (provided under the requirements for the degree) and prepare their own 8 semester study plan in consultation with their academic advisor.

**Summer is recommended to avoid taking over 18 hours in any given semester.