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Southeast...Experience  
Success

## DEPARTMENT OF CHEMISTRY

### Bachelor of Arts CHEMISTRY MAJOR (Chemistry Option)

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 Bachelor of Arts degree gives a student a broad exposure to chemistry, is somewhat less rigorous than the Bachelor of Science degree, and requires a minor. Students who elect to pursue careers which use chemistry, such as patent law, technical sales and environmental testing should choose this major.

**FACULTY ADVISOR:** Contact the department office (573-651-2162)

#### **CAREER OPPORTUNITIES:**

B.A. chemists employed by government or private industry are typically involved in research, product development, synthesis, analysis, quality control, industrial hygiene and safety, or testing for environmental regulation compliance. Many B.A. chemists tend to go into technical management, marketing, or sales (e.g. pharmaceuticals, chemicals, and instruments). Some use computer skills in information retrieval, computer modeling, process automation, and software development and evaluation. Others become technical writers.

#### **EMPLOYMENT OUTLOOK / SALARIES:**

In 2000, chemists and materials scientists held about 92,000 jobs in the U.S.A. This number is expected to grow by 10-20% by 2010. Much of this job growth will be concentrated in pharmaceutical companies and in firms that specialize in research and testing services. The median starting salary for BS chemists was around \$35,000 according to the ACS 2005 salary survey. ACS data shows a direct relationship between GPA and starting salaries for BS chemists, i.e. those with higher GPA's generally start at higher salaries. The median salary for all employed BS chemists was \$65,200 according to the ACS 2003 salary survey, with the median salary for all chemists being \$83,000.

#### **SUGGESTED HIGH SCHOOL PREPARATION FOR MAJOR:**

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

**Requirements for B.A. Chemistry Major – Chemistry Option– Minor Required**

	<u><b>Credit Hours</b></u>
<b>University Studies Core Curriculum</b>	<b>30*</b>
The University Studies Core Must include:	
Living Systems: BI151 Biological Reasoning	
<b>UI-100 First Year Seminar</b>	<b>3</b>
<b>University Studies Interdisciplinary Courses</b>	<b>6*</b>
<b><i>Required Courses (pre-requisites)</i></b>	<b>41</b>
CH185/005/085 General Chemistry I (MA095 or equiv)	5**
CH186 General Chemistry II (CH185)	3
CH187 Qualitative Analysis (CH186 pre or co)	2
CH271 Quantitative Analysis (CH187), (Fall)	4
CH310 Introduction to Physical Chemistry (CH271, MA139, PH121), (Fall)	5
CH341 Organic Chemistry I (CH186)	4
CH342 Organic Chemistry Lab I (CH341 pre or co)	1
CH498 Professional Presentation in Chemistry (UI443)	1
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
UI443 Professional Experience in Chemistry, (Spring)	3**
<b>Other Chemistry Requirements</b>	<b>2</b>
Chemistry Electives	2
<b>Minor Required for Degree</b>	<b>15-21<sup>#</sup></b>
<b>Electives</b>	<b>23-17<sup>##</sup></b>
EN100 English Composition	0-3
WP-003 75 Hour Writing Test	0
<b>Minimum Degree Requirement</b>	<b>120</b>

\*Does not include hours for University Studies courses included in core curriculum

\*\*University Studies course

<sup>#</sup>Typical credit hours required for most minors

<sup>##</sup>Number of electives depends on the minor selected

## Notes

1. Completion of an Experimental Learning Experience in the major (undergraduate research, internship) is required of all graduates. Requirement met by completion of CH498 Professional Presentation in Chemistry. Consult with your departmental advisor.
2. Required courses offered in both Fall and Spring semesters unless otherwise specified.
3. It is strongly recommended that B.A. chemistry majors take at least one upper division chemistry elective. For students seeking chemistry related employment immediately upon graduation, it is especially important to take classes that include coverage and use of chemical instrumentation, such as CH575 Chemical Instrumentation, CH447 Advanced NMR Techniques, and CH545 Organic Preparations and Characterization, since instrumentation is used extensively in industrial and forensic laboratories. This is especially important for B.A. chemistry majors since this degree program requires fewer hours in chemistry coursework than the B.S. in Chemistry degree program.
4. Completion of the California Critical Thinking Skills Tests is required after completion of 75 hours.
5. CL001, CL002, CL003, CL004 (Career Linkage sessions) 0 credit (Required for students entering Southeast in fall, 2005 or later)

**B.A. in Chemistry  
(Chemistry Option)  
Suggested 8 Semester Sequence<sup>♦</sup>**

<b>First Semester</b>	<b>Hrs.</b>	<b>Second Semester</b>	<b>Hrs.</b>
UI100 First Year Seminar	3	CH186 General Chemistry II	3
CH185 General Chemistry I Lecture	5	CH187 Qualitative Analysis	2
CH085 General Chemistry I Lab.	0	University Studies Electives	6
CH005 General Chemistry I Rec.	0	EN140 Rhetorical & Critical Thinking	3
MA139 Applied Calculus	3	Electives	3
EN100 English Comp.	3		
<b>Third Semester</b>	<b>Hrs.</b>	<b>Fourth Semester</b>	<b>Hrs.</b>
CH271 Quant. Analysis	4	CH341 Organic Chemistry I	4
PH120 Intro. Physics I Lecture	5	CH342 Organic Chemistry Lab I	1
PH020 Intro. Physics I Lab	0	PH121 Intro. Physics II Lecture	5
University Studies Electives	3	PH021 Intro. Physics II Lab	0
Electives	3	University Studies Electives	6
<b>Fifth Semester</b>	<b>Hrs.</b>	<b>Sixth Semester</b>	<b>Hrs.</b>
CH310 Intro. to Physical Chemistry	5	UI443 Prof. Experience in Chemistry	3
University Studies Electives	9	UI3XX University Studies*	3
Electives	2	Elective	9
		WP003 75 Hour Writing Exam	0
<b>Seventh Semester</b>	<b>Hrs.</b>	<b>Eighth Semester</b>	<b>Hrs.</b>
CHXXX Chemistry Elective	2	CH498 Professional Presentation in Chemistry	1
UI3XX University Studies	3	Electives	12
University Studies Electives	3		
Electives	6		

<sup>♦</sup>Assumes all prerequisites have been met for each course.

\*UI331 Biochem I (3) counts as both chemistry elective and UI3XX University Studies course.