

# BACHELOR OF SCIENCE, MAJOR IN CHEMISTRY FOR PROFESSIONAL CHEMISTS

## Bachelor of Science, Major in Chemistry for Professional Chemists

**Core Curriculum** ([catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum](http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum))

Component Area I (Communication)		6
Component Area II (Mathematics) <sup>1</sup>		4
Component Area III (Life and Physical Sciences) <sup>2</sup>		8
Component Area IV (Language, Philosophy, and Culture)		3
Component Area V (Creative Arts)		3
Component Area VI (American History)		6
Component Area VII (Government/Political Science)		6
Component Area VIII (Social and Behavioral Sciences)		3
Component Area IX (Area IV elective or Oral Communication)		3
<b>Degree Specific Requirements</b>		
MATH 1420	Calculus I <sup>1</sup>	4
MATH 1430	Calculus II	4
PHYS 1301 & PHYS 1101	General Phy-Mechanics & Heat and General Physics Laboratory I	4
PHYS 1302 & PHYS 1102	Gen Phy-Snd,Lght, Elec, & Mag and General Physics Laboratory II	4
ENGL 3330	Intro To Technical Writing	3
<b>Major Core</b>		
<b>Major</b>		
CHEM 1411	General Chemistry I <sup>2</sup>	4
CHEM 1412	General Chemistry II <sup>2</sup>	4
CHEM 2323 & CHEM 2123	Organic Chemistry I: Lecture and Organic Chemistry I Lab	4
CHEM 2325 & CHEM 2125	Organic Chemistry II: Lecture and Organic Chemistry II: Lab	4
CHEM 2401	Quantitative Analysis	4
CHEM 3438	Biochemistry I	4
CHEM 4448	Physical Chemistry I	4
CHEM 4449	Physical Chemistry II	4
CHEM 4440	Instrumental Analytical Chem	4
CHEM 4260	Advanced Integrated Laboratory	2
CHEM 4367	Advanced Inorganic Chemistry	3
CHEM 4100	Chemical Literature Seminar	1
CHEM 4395	Undergrad Research In Chem	3
CHEM Advanced elective <sup>3</sup>		3-4
<b>Minor (if required)</b>		
A minor, including 6 advanced hours is required <sup>4</sup>		18
<b>Electives</b>		
General electives		7
Advanced electives		6
Total Hours		120-129

<sup>1</sup> MATH 1420 satisfies the Component Area II requirement, the 1 hour institutional component and the degree specific requirement.

<sup>2</sup> CHEM 1411 and CHEM 1412 satisfy the Component Area III requirement and the degree specific requirement.

<sup>3</sup> CHEM 3361, CHEM 3367, CHEM 3368, CHEM 3339, CHEM 4442, and CHEM 4443 are recommended.

<sup>4</sup> A minor in MATH, for instance, only requirements 10 additional hours beyond MATH 1420 and MATH 1430.

**Note**

A minor generally requires six semesters of coursework, a minimum of 18 credits (six advanced) in an approved field. Students should use elective and minor hours to satisfy the 42 advanced hour requirement.

**Teacher Certification**

Students seeking a background that will prepare them to teach chemistry at the secondary level might pursue a major in chemistry with a minor in secondary education, or they might major in chemistry, minor in another discipline, and seek alternative teaching certification.

**Emphasis in Biochemistry-Biotechnology**

Students seeking a background that will prepare them for the emerging technologies in biochemistry and biotechnology can select advanced courses that will lead to a major in chemistry and a minor in biology.

**First Year**

Fall	Hours Spring	Hours
CHEM 1411 <sup>1</sup>	4 CHEM 1412 <sup>1</sup>	4
MATH 1420 <sup>2</sup>	4 MATH 1430	4
ENGL 1301 <sup>3</sup>	3 ENGL 1302 <sup>3</sup>	3
HIST 1301 <sup>4</sup>	3 HIST 1302 <sup>4</sup>	3
UNIV 1301 <sup>5</sup>	3	
	17	14

**Second Year**

Fall	Hours Spring	Hours
CHEM 2323	3 CHEM 2325	3
CHEM 2123	1 CHEM 2125	1
PHYS 1301	3 PHYS 1302	3
PHYS 1101	1 PHYS 1102	1
CHEM 2401	4 Minor <sup>6</sup>	4
Component Area IV ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav">catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav</a> )	3 ENGL 3330	3
	15	15

**Third Year**

Fall	Hours Spring	Hours
CHEM 3438	4 CHEM 4449	4
CHEM 4448	4 Minor (Advanced) <sup>6</sup>	3
POLS 2305 <sup>7</sup>	3 POLS 2306 <sup>7</sup>	3
Elective	4 Component Area V ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav">catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav</a> )	3
	Component Area IX ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix">catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix</a> )	3
	15	16

**Fourth Year**

Fall	Hours Spring	Hours
CHEM 4440	4 CHEM 4260	2
CHEM 4100	1 CHEM 4367	3
CHEM Advanced Elective <sup>8</sup>	3-4 CHEM 4395	3
Minor (Advanced) <sup>6</sup>	3 Elective (Advanced)	3
Elective (Advanced)	3 Component Area VIII ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii">catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii</a> )	3
	14-15	14

Total Hours: 120-121

- 1 Satisfies Component Area III
- 2 Satisfies Component Area II
- 3 Satisfies Component Area I
- 4 Satisfies Component Area VI
- 5 or an elective
- 6 a minor requires 6 semester hours of coursework, a minimum of 18 credits (6 advanced) in an approved field
- 7 Satisfies Component Area VII
- 8 CHEM 3339, CHEM 3361, CHEM 3367, CHEM 3368, CHEM 4442, CHEM 4443 are recommended

Note: Students should use elective and minor hours to satisfy the 42-advanced hour requirement. Advanced hours are 3000 and 4000 level courses.