

BACHELOR OF SCIENCE, MAJOR IN CHEMISTRY FOR OTHER TECHNICAL CAREERS

Additional information: Reference the Program Landing Page (<https://www.shsu.edu/programs/bachelor-of-science-in-chemistry/>) for additional information, such as cost, delivery format, contact information, or to schedule a visit.

Code	Title	Hours
Bachelor of Science, Major in Chemistry for Other Technical Careers		
Core Curriculum		
Component Area I (Communication)		6
Component Area II (Mathematics) ¹		3
Component Area III (Life and Physical Science) ²		8
Component Area IV (Language, Philosophy, and Culture)		3
Component Area V (Creative Arts)		3
Component Area VI (U.S. History)		6
Component Area VII (Political Science/Government)		6
Component Area VIII (Social and Behavioral Sciences)		3
Component Area IX (Component Area Option) ¹		4
Degree Specific Requirements		
ENGL 3330	Introduction to Technical Writing	3
MATH 1420	Calculus I ¹	4
MATH 1430	Calculus II	4
PHYS 1301 & PHYS 1101 or PHYS 1411	General Physics-Mechanics and Heat and General Physics Laboratory I Introduction To Physics I	4
PHYS 1302 & PHYS 1102 or PHYS 1422	General Physics-Sound, Light, Electricity, and Magnetism and General Physics Laboratory II Introduction To Physics II	4
Major: Foundation		
CHEM 1411	General Chemistry I ²	4
CHEM 1412	General Chemistry II ²	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 4100	Chemical Literature Seminar	1
CHEM 4260	Advanced Integrated Laboratory	2
CHEM 4367	Advanced Inorganic Chemistry	3
CHEM 4395	Undergraduate Research In Chemistry	3
CHEM 4440	Instrumental Analytical Chemistry	4
CHEM 4448	Physical Chemistry I	4
Major: Prescribed Electives		
CHEM Advanced Electives ^{3,4}		3-4
Electives: Advanced		
Advanced Electives ⁴		12-13
Electives: General		
General Electives ⁴		7-8
Minor: Required		
A minor, including 6 advanced hours ^{5,6}		10
Total Hours		120-121

2 Bachelor of Science, Major in Chemistry for Other Technical Careers

- ¹ MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics), the one semester credit hour Core Curriculum requirement for Component Area IX (Component Area Option), and the Degree Specific requirement.
- ² CHEM 1411 and CHEM 1412 satisfy the Core Curriculum requirement for Component Area III (Life and Physical Science) and the Major requirement.
- ³ See the recommended CHEM Advanced Electives course listing below. In the spring of the third year, a student should choose either one four credit hour advanced chemistry elective and one three credit hour Prescribed Elective **or** choose one three credit hour advanced chemistry elective and one four credit hour Prescribed Elective.
- ⁴ Electives must be chosen to ensure 42 advanced hours and 120 overall hours for the degree. CHEM Advanced Electives, Advanced Electives, and General Electives will total 24 credit hours.
- ⁵ A minor generally requires six semesters of coursework, a minimum of 18 credits (six advanced) in an approved field. A minor in MATH, as a common example, only requires 10 additional hours beyond MATH 1420 and MATH 1430. Students should use elective and minor hours to satisfy the 42 advanced hour requirement.
- ⁶ The following minor cannot be paired with this degree program: Minor in Chemistry.

Code	Title	Hours
CHEM Advanced Electives ³		3-4
The following courses are recommended:		
CHEM 3339	Biochemistry II	3
CHEM 3361	Discoveries In Chemistry and Textiles	3
CHEM 3367	Introduction to Inorganic Chemistry	3
CHEM 3368	Environmental Chemistry	3
CHEM 3438	Biochemistry I	4
CHEM 4327	Polymer Chemistry	3
CHEM 4442	Air Quality	4
CHEM 4443	Structural Spectroscopic Methods	4

Notes

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

A grade of C or higher is required for CHEM 1411, CHEM 1412, CHEM 2123, CHEM 2125, CHEM 2323, CHEM 2325, CHEM 2401, CHEM 4448, and in all required Physics and Mathematics courses.

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. Advanced hours are 3000- and 4000-level courses.

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First Year

Fall	Hours	Spring	Hours
CHEM 1411 ¹		4 CHEM 1412 ¹	4
ENGL 1301 ²		3 ENGL 1302 ²	3
General Elective ⁵		3 HIST 1302 ³	3
HIST 1301 ³		3 MATH 1430	4
MATH 1420 ⁴		4	
		17	14

Second Year

Fall	Hours	Spring	Hours
Component Area IV		3 CHEM 2125	1
CHEM 2123		1 CHEM 2325	3
CHEM 2323		3 ENGL 3330	3

CHEM 2401		4 Minor ^{5,6}		4
PHYS 1301 & PHYS 1101 (or PHYS 1411)		4 PHYS 1302 & PHYS 1102 (or PHYS 1422)		4
		15	15	
Third Year				
Fall	Hours	Spring		Hours
Advanced Elective		3-4 Component Area IX		3
CHEM 4448		4 Advanced Elective ⁸		3-4
Minor Advanced ^{5,6}		3 CHEM Advanced Elective ⁸		3-4
POLS 2305 ⁷		3 General Elective POLS 2306 ⁷		4 3
		13	17-18	
Fourth Year				
Fall	Hours	Spring		Hours
Component Area VIII		3 Component Area V		3
Advanced Elective ⁸		4 Advanced Elective ⁸		3-4
CHEM 4100		1 CHEM 4260		2
CHEM 4440		4 CHEM 4367		3
Minor Advanced ^{5,6}		3 CHEM 4395		3
		15	14	

Total Hours: 120-121

- ¹ Satisfies Core Curriculum requirement for Component Area III (Life and Physical Science).
- ² Satisfies Core Curriculum requirement for Component Area I (Communication).
- ³ Satisfies Core Curriculum requirement for Component Area VI (U.S. History).
- ⁴ MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics), the one semester credit hour Core Curriculum requirement for Component Area IX (Component Area Option), and the Degree Specific requirement.
- ⁵ A minor generally requires six semesters of coursework, a minimum of 18 credits (six advanced) in an approved field. A minor in MATH, as a common example, only requires 10 additional hours beyond MATH 1420 and MATH 1430. Students should use elective and minor hours to satisfy the 42 advanced hour requirement.
- ⁶ The following minor cannot be paired with this degree program: Minor in Chemistry.
- ⁷ Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).
- ⁸ See the recommended CHEM Advanced Electives course listing below. In the spring of the third year, a student should choose either one four credit hour advanced chemistry elective and one three credit hour Prescribed Elective **or** choose one three credit hour advanced chemistry elective and one four credit hour Prescribed Elective.

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The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BS in Chemistry for Other Technical Careers is designed to provide graduates with the following marketable skills:

- Work safely with standard chemicals in a chemistry laboratory.
- Keep thorough and accurate records of chemistry experiments.
- Write final research reports and orally present results of experiments.
- Analyze and interpret experimental data, including spectrophotometric data.
- Understand the use of the major methods of purification of chemical compounds, including chromatographic techniques.