CHEMISTRY (BA)

Program Description

If you are preparing for medical or dental school, a career in industrial laboratory science, medical science, pharmacy, or related fields, or to teach chemistry at the secondary level, this major is intended for you.

This major pairs well with the pre-professional heath sciences (PPHS) courses and it can also mesh well with the Honors Liberal Arts major.

Entering and Completing the Major

In order to earn a degree, you must complete at least one academic major. SPU encourages students to explore various academic paths, so if you change your mind about a major, or want to include an additional program, you are able to do so, as outlined below.

Note that the University encourages you to enter your chosen major(s) as soon as you have determined it and are eligible to join it, especially by the start of your junior year. Students who transfer as juniors and seniors should enter a major within their first two quarters at SPU.

- If this is your first quarter at SPU and you identified a major in this department as your first choice on your application for admission to the University, you have gained entry to the major. To change or add a major, follow these instructions (https://spu.atlassian.net/l/cp/a3th1keb/).
- If you are an SPU student with an SPU cumulative GPA of 2.0 or better, follow these instructions (https://spu.atlassian.net/l/cp/a3th1keb/) to enter a major in this department.
- The University requires a grade of C- or better in all classes that apply to a major; however, programs may require higher minimum grades in specific courses. You may repeat an SPU course only once for a higher grade.
- To advance in this program, meet with your faculty advisor regularly to discuss your grades, course progression, and other indicators of satisfactory academic progress. If your grades or other factors indicate that you may not be able to successfully complete the major or minor, your faculty advisor can work with you to explore options, which may include choosing a different major.
- You must complete the major requirements that are in effect in the SPU Undergraduate Catalog for the year you enter the major.

Chemistry (BA)

74 Credits Minimum, Including 38 Upper Division (UD)

Code	Title	Credits
General Core: Chemistry		
CHM 1211	General Chemistry I	5
CHM 1212	General Chemistry II	5
CHM 1213	General Chemistry III	3
CHM 2213	Inorganic Qualitative Analysis	2
CHM 2960	Introduction to Research Methods	1
CHM 3225	Quantitative Analysis and Equilibrium	5
CHM 3371	Organic Chemistry I	5
CHM 3372	Organic Chemistry II	5
CHM 3373	Organic Chemistry III	5
CHM 3410	Survey of Physical Chemistry	5
CHM 3540	Introductory Inorganic Chemistry	5
CHM 4361	Biochemistry	5
CHM 4898	Chemistry and Biochemistry Capstone Seminar	3
Section Credits Required		54
Required Mathematics and Physics Courses		
Select one of the following Groups:		10
Group A:		
MAT 1221	Survey of Calculus	
MAT 2360	Introduction to Statistics for the Sciences	
Group B:		
MAT 1234	Calculus I	
MAT 1235	Calculus II	
Select one of the following Groups:		10
Group A:		
PHY 1121	Physics for Science and Engineering	
PHY 1122	Physics for Science and Engineering	
Group B:		
PHY 1101	General Physics	
PHY 1102	General Physics	
Section Credits Required		20
Total Credits		**74**

Suggested Course Sequence

For Freshmen placed into CHM 1211 General Chemistry I Autumn quarter

This sequence is for students who aim to teach high school or do the Preprofessional Health Sciences (PPHS) path.

Course	Title	Credits
Freshman		
Autumn		
CHM 1211 & 1211L	General Chemistry I and General Chemistry I Lab	5
MAT XXXX [1]		
Ask PPHS Director to add you to event announcements list		
	Credits	**5**
Winter		
CHM 1212 & 1212L	General Chemistry II and General Chemistry II Lab	5
MAT XXXY		5
PPHS 1200	Introduction to the Health Professions (if desired)	
	Credits	**10**
Spring		
CHM 1213	General Chemistry III	3
MAT XXXZ		5
CHM 2213 & 2213L	Inorganic Qualitative Analysis and Inorganic Qualitative Analysis Lab	2
CHM 2960	Introduction to Research Methods	1
	Credits	**11**
Summer		
Students interested in becoming high school teachers should consult their EDU Advisor no later than Summer after Freshmen year. [3]		
PPHS students should consider shadowing and volunteering in professional health field.		
Consider SPU Study Abroad!		
	Credits	**0**

Sophomore		
Autumn		
CHM 3371 & 3371L	Organic Chemistry I and Organic Chemistry I Lab	5
PHY 1121 or PHY 1101	Physics for Science and Engineering or General Physics	5
	Credits	**10**
Winter		
CHM 3372 & 3372L	Organic Chemistry II and Organic Chemistry II Lab	5
PHY 1122 or PHY 1102	Physics for Science and Engineering or General Physics	5
	Credits	**10**
Spring		
CHM 3373 & 3373L	Organic Chemistry III and Organic Chemistry III Lab	5
	Credits	**5**
Junior		
Autumn		
CHM 3225 & 3225L	Quantitative Analysis and Equilibrium and Quantitative Analysis and Equilibrium Lab	5
PPHS 3400	Application Workshop	
	Credits	**5**
Winter		
CHM 3540 & 3540L	Introductory Inorganic Chemistry and Introductory Inorganic Chemistry Lab	5
	Credits	**5**
Spring		
CHM 3410 & 3410L	Survey of Physical Chemistry and Survey of Physical Chemistry Lab	5
	Credits	**5**
Senior		
Autumn		
CHM 4361 & 4361L	Biochemistry and Biochemistry Lab [5]	5
	Credits	**5**
Winter		
CHM 4898	Chemistry and Biochemistry Capstone Seminar	3
	Credits	**3**
	Total Credits	**74**

1

Take the Math Placement Exam before Fall freshman year. Take the calculus placement exam, too. If Pre-Calculus MAT 1110 Precalculus (or any other prior math course) is indicated by the placement, stay on sequence in your math journey by taking MAT 1110 Precalculus in Fall (or take the indicated pre-req math course your first quarter and then keep taking math courses in the following quarters to complete the required MAT courses for the degree as soon as possible). Take BIO 2101 General Biology later.

2

CHM 1213 General Chemistry III and CHM 2213 Inorganic Qualitative Analysis can be taken during Sophomore Spring because the only course they are a pre-req for is CHM 3540 Introductory Inorganic Chemistry.

3

Majors should do CHM 4960 Undergraduate Research in Chemistry/ Biochemistry Undergraduate Research during the academic year and/or do research during Summer.

4

CHM 3422 Statistical Thermodynamics cannot be taken as an elective if CHM 3410 Survey of Physical Chemistry is taken, unless special permission is granted (not allowed to double dip p-chem credits)

5

CHM 4361 Biochemistry may also be taken Fall junior year.

For Freshmen placed into CHM 1211 General Chemistry I Winter quarter

This sequence is for students who aim to teach high school or do the Preprofessional Health Sciences (PPHS) path.

Course	Title	Credits
Freshman		
Autumn		
CHM 1000	Preparation for General Chemistry	2
MAT XXXX [1]		5
Ask PPHS Director to add you to events mailing list		
	Credits	**7**
Winter		
CHM 1211 & 1211L	General Chemistry I and General Chemistry I Lab	5
MAT XXXY		5
PPHS 1200	Introduction to the Health Professions	
	Credits	**10**
Spring		
CHM 1212 & 1212L	General Chemistry II and General Chemistry II Lab	5
MAT XXXZ		5
CHM 2960	Introduction to Research Methods	1
	Credits	**11**
Summer		
Students who want to become high school teachers should consult their EDU Advisor no later than Summer after Freshman year. [2]		
PPHS students should consider shadowing and volunteering in professional health field.		
	Credits	**0**
Sophomore		
Autumn		
CHM 3371 & 3371L	Organic Chemistry I and Organic Chemistry I Lab	5
PHY 1121 or PHY 1101	Physics for Science and Engineering or General Physics	5
	Credits	**10**
Winter		
CHM 3372 & 3372L	Organic Chemistry II and Organic Chemistry II Lab	5
PHY 1122 or PHY 1102	Physics for Science and Engineering or General Physics	5
	Credits	**10**
Spring		
CHM 1213	General Chemistry III [3]	3
CHM 3373 & 3373L	Organic Chemistry III and Organic Chemistry III Lab	5
CHM 2213 & 2213L	Inorganic Qualitative Analysis and Inorganic Qualitative Analysis Lab	2
	Credits	**10**
Junior		
Autumn		
CHM 3225 & 3225L	Quantitative Analysis and Equilibrium and Quantitative Analysis and Equilibrium Lab	5

PPHS 3400	Application Workshop	
	Credits	**5**
Winter		
CHM 3540 & 3540L	Introductory Inorganic Chemistry and Introductory Inorganic Chemistry Lab	5
	Credits	**5**
Spring		
CHM 3410 & 3410L	Survey of Physical Chemistry and Survey of Physical Chemistry Lab	5
	Credits	**5**
Senior		
Autumn		
CHM 4361 & 4361L	Biochemistry and Biochemistry Lab [5]	5
	Credits	**5**
Winter		
CHM 4898	Chemistry and Biochemistry Capstone Seminar	3
	Credits	**3**
	Total Credits	**81**

1

Take the Math Placement Exam before Fall freshman year. Take the calculus placement exam, too. If Pre-Calculus MAT 1110 Precalculus or other pre-req math courses are indicated by the placement, stay on track in the math sequence by taking math your first quarter and continuing to take subsequent required math courses in the following quarters.

2

Majors should do CHM 4960 Undergraduate Research in Chemistry/ Biochemistry Undergraduate Research during the academic year and/or do research during Summer.

3

CHM 1213 General Chemistry III and CHM 2213 Inorganic Qualitative Analysis can be taken during Sophomore Spring because the only course they are a pre-req for is CHM 3540 Introductory Inorganic Chemistry.

4

CHM 3422 Statistical Thermodynamics cannot be taken as electives if CHM 3410 Survey of Physical Chemistry is taken, unless special permission is granted (not allowed to double dip p-chem credits)

5

CHM 4361 Biochemistry may also be taken fall senior year.