

## Chemistry - Professional Chemistry Emphasis, B.S.

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### Requirements

This bachelor's degree in professional chemistry prepares a student for employment as a chemist. It also prepares a student for further study in a graduate degree or professional program. This degree is designed to meet American Chemical standards for a bachelor degree. Job opportunities for students with this degree are very good. Students with this degree can have careers in test laboratories, government laboratories, hospital laboratories, research and development, quality control, manufacturing, and many other areas.

In obtaining this degree, students will learn how to:

- Use modern scientific instruments and interpret results
- Apply principles used in chemistry to solve everyday problems
- Think analytically
- Use problem solving skills
- Categorize information
- Apply learned math skills
- Develop laboratory skills

### Total Program Credits: 120

Matriculation Requirements:			
To matriculate into the Chemistry degree, students must have adviser approval, and completed CHEM 1210, CHEM 1220, CHEM 1250, and CHEM 1260 all with a C- or higher.			
General Education Requirements:			40 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGL 1005	Literacies and Composition Across Context CC (5.0)	
	ENGL 2010	Intermediate Academic Writing CC	3
	MATH 1210	Calculus I QL	4
Complete one of the following:			3
	HIST 1700	American Civilization AS (3.0)	
	HIST 2700	US History to 1877 AS (3.0)	
and	HIST 2710	US History since 1877 AS (3.0)	
	HIST 1740	US Economic History AS (3.0)	
	POLS 1000	American Heritage SS (3.0)	
	POLS 1100	American National Government AS (3.0)	
Complete the following:			
	PHIL 2050	Ethics and Values IH	3
or	PHIL 205G	Ethics and Values IH GI	
or	PHIL 205H	Ethics and Values IH	
	HLTH 1100	Personal Health and Wellness TE (2.0)	
or	EXSC 1097	Fitness for Life TE	2
Distribution Courses:			
	BIOL 1610	College Biology I BB	4
	CHEM 1210	Principles of Chemistry I PP <sup>1</sup>	4
	CHEM 1220	Principles of Chemistry II PP <sup>2</sup>	4
	Fine Arts		3

	Humanities		3
	Social/Behavioral Science		3
Discipline Core Requirements:			41 Credits
	CHEM 1215	Principles of Chemistry I Laboratory <sup>3</sup>	1
	CHEM 1225	Principles of Chemistry II Laboratory <sup>4</sup>	1
	CHEM 1250	Chemistry Cornerstone- Research and Careers	1
	CHEM 1260	Chemistry Cornerstone- Ethics	1
	BIOL 1615	College Biology I Laboratory	1
	CHEM 2310	Organic Chemistry I	4
	CHEM 2315	Organic Chemistry I Laboratory	1
	CHEM 2320	Organic Chemistry II	4
	CHEM 2325	Organic Chemistry II Laboratory	1
	CHEM 3000	Analytical Chemistry	2
	CHEM 3005	Analytical Chemistry Laboratory	2
	CHEM 3600	Biological Chemistry	3
	CHEM 3605	Biological Chemistry Lab	1
	CHEM 4000	Instrumental Analysis WE	2
	CHEM 4005	Instrumental Analysis Laboratory	2
	MATH 1220	Calculus II	4
	PHYS 2210	Physics for Scientists and Engineers I PP	4
	PHYS 2220	Physics for Scientists and Engineers II PP	4
	PHYS 2215	Physics for Scientists and Engineers I Lab	1
	PHYS 2225	Physics for Scientists and Engineers II Lab	1
Emphasis Requirements:			40 Credits
	CHEM 3060	Physical Chemistry I WE	4
	CHEM 3065	Physical Chemistry I Lab	1
	CHEM 3070	Physical Chemistry II	4
	CHEM 3075	Physical Chemistry II Lab	1
	CHEM 3100	Advanced Inorganic Chemistry	4
	CHEM 3115	Advanced Inorganic Chemistry Lab	1
	MATH 2210	Calculus III	4
	MATH 2280	Ordinary Differential Equations	3
	PHYS 3300	Mathematical Physics	3
Chemistry Electives (15 credits) from the following:			15
	CHEM 3020	Environmental Chemistry (3.0)	
	CHEM 3025	Environmental Chemistry Laboratory (1.0)	
	CHEM 3080	Physical Chemistry III (3.0)	
	CHEM 3300	Biomolecular Modeling and Simulations (4.0)	
	CHEM 3620	Biological Chemistry II (3.0)	
	CHEM 3800	Energy Use on Earth (3.0)	
	CHEM 4030	Radiochemistry (3.0)	

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<a href="#">CHEM 4600</a>	Structure Determination (3.0)	
<a href="#">CHEM 4605</a>	Structure Determination Laboratory (1.0)	
<a href="#">CHEM 4800</a>	Pharmacology (3.0)	
<a href="#">CHEM 482R</a>	Chemistry Internship (1-4)	
<a href="#">CHEM 489R</a>	Undergraduate Research in Chemistry (1-4)	
<a href="#">CHEM 491R</a>	Advanced Topics in Inorganic Chemistry (3.0)	
<a href="#">CHEM 495R</a>	Advanced Topics in Organic Chemistry (3.0)	
<a href="#">CHEM 496R</a>	Special Topics in Chemistry (1-4)	
<a href="#">CHEM 499R</a>	Independent Study and Research (1-4)	
<a href="#">PHYS 2800</a>	Introduction to Materials Physics (3.0)	
<a href="#">PHYS 3500</a>	Thermodynamics (3.0)	
<a href="#">PHYS 4250</a>	Nuclear Physics (3.0)	
<a href="#">PHYS 4510</a>	Quantum Mechanics I (3.0)	
<a href="#">PHYS 4520</a>	Quantum Mechanics II (3.0)	
<a href="#">PHYS 4800</a>	Solid State Physics (3.0)	

### **Graduation Requirements:**

1. Completion of a minimum of 120 semester credits with a minimum of 40 upper-division credits.
2. Overall grade point average of 2.0 (C) or above with a minimum of 2.25 in Major.
3. Residency hours -- minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
4. Completion of GE and specified departmental requirements.
5. A minimum of 54 credit hours must be in the major with a minimum of 20 credits taken at UVU. A minimum of 28 chemistry credits must be upper-division.
6. Complete all chemistry and physics courses with a minimum grade of "C-" or better.
7. Successful completion of at least one Global/Intercultural course.

Footnote:	
1 To be taken with <a href="#">CHEM 1215</a> Principles of Chemistry I Laboratory	
2 To be taken with <a href="#">CHEM 1225</a> Principles of Chemistry II Laboratory	
3 To be taken with <a href="#">CHEM 1210</a> Principles of Chemistry I PP	
4 To be taken with <a href="#">CHEM 1220</a> Principles of Chemistry II PP	

### Chemistry - Professional Chemistry Emphasis, B.S. Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in [Wolverine Track](#).

Semester 1	Course Title	Credit Hours
CHEM 1210	Principles of Chemistry I PP	4
CHEM 1215	Principles of Chemistry I Laboratory	1
MATH 1210*	Calculus I QL	4
ENGL 1010	Introduction to Academic Writing CC	3
American Institutions		3
Semester total:		15
Semester 2	Course Title	Credit Hours
MATH 1220	Calculus II	4
CHEM 1220	Principles of Chemistry II PP	4
CHEM 1225	Principles of Chemistry II Laboratory	1
ENGL 2010	Intermediate Academic Writing CC	3
Social/Behavioral Science		3
Semester total:		15
Semester 3	Course Title	Credit Hours
BIOL 1610	College Biology I BB	4
BIOL 1615	College Biology I Laboratory	1
CHEM 2310	Organic Chemistry I	4
CHEM 2315	Organic Chemistry I Laboratory	1
Fine Arts		3
Humanities		3
Semester total:		16
Semester 4	Course Title	Credit Hours
CHEM 2320	Organic Chemistry II	4
CHEM 2325	Organic Chemistry II Laboratory	1
PHIL 205G	Ethics and Values IH GI	3
PHYS 2210	Physics for Scientists & Engineers I PP	4
PHYS 2215	Physics for Scientists & Engineers I Lab	1
HLTH 1100 or EXSC 1097	Personal Health & Wellness TE or Fitness for Life TE	2
Semester total:		15
Semester 5	Course Title	Credit Hours
CHEM 1250	Chemistry Cornerstone- Research and Careers	1
MATH 2210	Calculus III	3
PHYS 2220	Physics for Scientists and Engineers II PP	4
PHYS 2225	Physics for Scientists and Engineers II Lab	1
Chemistry Electives		6
Semester total:		15

Semester 6	Course Title	Credit Hours
CHEM 3000	Analytical Chemistry	2
CHEM 3005	Analytical Chemistry Laboratory	2
CHEM 1260	Chemistry Cornerstone- Ethics	1
MATH 2280	Ordinary Differential Equations	3
Chemistry Electives		6
Semester total:		14
Semester 7	Course Title	Credit Hours
CHEM 3100	Advanced Inorganic Chemistry	4
CHEM 3115	Advanced Inorganic Chemistry Lab	1
CHEM 3060	Physical Chemistry I WE	4
CHEM 3065	Physical Chemistry Lab I	1
PHYS 3300	Mathematical Physics	3
Semester total:		13
Semester 8	Course Title	Credit Hours
CHEM 3070	Physical Chemistry II	4
CHEM 3075	Physical Chemistry II Lab	1
CHEM 3600	Biological Chemistry	3
CHEM 3605	Biological Chemistry Lab	1
CHEM 4000	Instrumental Analysis WE	2
CHEM 4005	Instrumental Analysis Laboratory	2
Chemistry Electives		4
Semester total:		17
Degree total:		120