

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	3
or	ENGL 1005	Literacies and Composition Across Context (5.0)	
	ENGL 2010	Intermediate Writing/Academic Writing and Research	3
	MATH 1210	Calculus I	5
Complete one of the following:			3
	HIST 1700	American Civilization (3.0)	
	HIST 2700	US History to 1877 (3.0)	
and	HIST 2710	US History since 1877 (3.0)	
	HIST 1740	US Economic History (3.0)	
	POLS 1000	American Heritage (3.0)	
	POLS 1100	American National Government (3.0)	
Complete the following:			
	PHIL 2050	Ethics and Values	3
or	PHIL 205G	Ethics and Values	
or	PHIL 205H	Ethics and Values	
	HLTH 1100	Personal Health and Wellness (2.0)	
or	PES 1097	Fitness for Life	2
Distribution Courses:			
	BIOL 1610	College Biology I	4
	CHEM 1210	Principles of Chemistry I ¹	4
	CHEM 1220	Principles of Chemistry II ²	4
	Fine Arts		3

	Humanities		3
	Social/Behavioral Science		3
Discipline Core Requirements:			41 Credits
	CHEM 1215	Principles of Chemistry I Laboratory ³	1
	CHEM 1225	Principles of Chemistry II Laboratory ⁴	1
	CHEM 1250	Chemistry Cornerstone- Research and Careers	1
	CHEM 1260	Chemistry Cornerstone- Ethics	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	5
	PHYS 2210	Physics for Scientists and Engineers I	4
	PHYS 2220	Physics for Scientists and Engineers II	4
	PHYS 2215	Physics for Scientists and Engineers I Lab	1
	PHYS 2225	Physics for Scientists and Engineers II Lab	1
Emphasis Requirements:			39 Credits
	CHEM 3060	Physical Chemistry I	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	3
	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)	
	CHEM 4600	Structure Determination (3.0)	
	CHEM 4605	Structure Determination Laboratory (1.0)	

Chemistry - Professional Chemistry Emphasis, B.S.

CHEM 4800	Pharmacology (3.0)	
CHEM 482R	Chemistry Internship (1.0)	
CHEM 489R	Undergraduate Research in Chemistry (1.0)	
CHEM 491R	Advanced Topics in Inorganic Chemistry (3.0)	
CHEM 495R	Advanced Topics in Organic Chemistry (3.0)	
CHEM 496R	Special Topics in Chemistry (3.0)	
CHEM 499R	Independent Study and Research (1.0)	
PHYS 2800	Introduction to Materials Physics (3.0)	
PHYS 3500	Thermodynamics (3.0)	
PHYS 4250	Nuclear Physics (3.0)	
PHYS 4510	Quantum Mechanics I (3.0)	
PHYS 4520	Quantum Mechanics II (3.0)	
PHYS 4800	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 CHEM 1215 Principles of Chemistry I Laboratory	
2 To be taken with CHEM 1225 Principles of Chemistry II Laboratory	
3 To be taken with CHEM 1210 Principles of Chemistry I	
4 To be taken with CHEM 1220 Principles of Chemistry II	

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](#).

Milestone courses (pre-requisites for a course in one of the subsequent semesters) are marked in red and italicized.

Semester 1	Course Title	Credit Hours
<i>CHEM 1210</i>	Principles of Chemistry I	4
<i>CHEM 1215</i>	Principles of Chemistry I Lab	1
<i>MATH 1210*</i>	Calculus I	5
<i>ENGL 1010</i>	Introduction to Academic Writing	3
You Choose	American Institutions	3
	Semester total:	16
Note: *This degree plan starts from MATH 1210, Calculus I. If student hasn't completed the required MATH courses to take Calculus I then those additional MAT/MATH courses must be taken prior to starting this suggested degree sequence.		
Semester 2	Course Title	Credit Hours
<i>MATH 1220</i>	Calculus II	5
<i>CHEM 1220</i>	Principles of Chemistry II	4
<i>CHEM 1225</i>	Principles of Chemistry II Lab	1
<i>ENGL 2010</i>	Intermediate Writing Academic Writing and Research	3
You Choose	Social/Behavioral Science Distribution	3
	Semester total:	16
Semester 3	Course Title	Credit Hours
<i>BIOL 1610</i>	College Biology I	4
<i>CHEM 2310</i>	Organic Chemistry I	4
<i>CHEM 2315</i>	Organic Chemistry I Lab	1
You Choose	Fine Arts	3
You Choose	Humanities Distribution	3
	Semester total:	15
Semester 4	Course Title	Credit Hours
<i>CHEM 2320</i>	Organic Chemistry II	4
<i>CHEM 2325</i>	Organic Chemistry II Lab	1
PHIL 205G	Ethics and Values	3
<i>PHYS 2210</i>	Physics for Scientists & Engineers I	4
<i>PHYS 2215</i>	Physics for Scientists & Engineers I Lab	1
You Choose	Fitness for Life or Personal Health & Wellness	2
	Semester total:	15
Semester 5	Course Title	Credit Hours
CHEM 1250	Chemistry Cornerstone- Research and Careers	1

<i>MATH 2210</i>	Calculus III	3
<i>PHYS 2220</i>	Physics for Scientists and Engineers II	4
PHYS 2220	Physics for Scientists and Engineers II Lab	1
You Choose	Chemistry Electives *	6
	Semester total:	15
*Note: Choose from CHEM 3020, 3025, 3080, 3300, 3800, 4030, 4600, 4605, 4800, 482R, 489R, 491R, 495R, 496R, 499R or PHYS 2800, 3500, 4250, 4510, 4520, or 4800		
Semester 6	Course Title	Credit Hours
<i>CHEM 3000</i>	Analytical Chemistry	2
CHEM 3005	Analytical Chemistry Lab	2
CHEM 1260	Chemistry Cornerstone- Ethics	1
MATH 2280	Ordinary Differential Equations	3
You Choose	Chemistry Electives *	6
	Semester total:	14
*Note: Choose from CHEM 3020, 3025, 3080, 3300, 3800, 4030, 4600, 4605, 4800, 482R, 489R, 491R, 495R, 496R, 499R or PHYS 2800, 3500, 4250, 4510, 4520, or 4800		
Semester 7	Course Title	Credit Hours
CHEM 3100	Advanced Inorganic Chemistry	4
CHEM 3115	Advanced Inorganic Chemistry Lab	1
<i>CHEM 3060</i>	Physical Chemistry I	4
<i>CHEM 3065</i>	Physical Chemistry Laboratory 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	Physical Chemistry	3
CHEM 3605	Biological Chemistry Lab	1
CHEM 4000	Instrumental Analysis WE	2
CHEM 4005	Instrumental Analysis Lab	2
You Choose	Chemistry Electives *	3
	Semester total:	16
*Note: Choose from CHEM 3020, 3025, 3080, 3300, 3800, 4030, 4600, 4605, 4800, 482R, 489R, 491R, 495R, 496R, 499R or PHYS 2800, 3500, 4250, 4510, 4520, or 4800		
	Degree total:	120