

# CHEMISTRY, BACHELOR OF SCIENCE

College of Letters & Science

## The Major Programs

Chemistry studies the composition of matter, its structure, and the means by which it is converted from one form to another.

### The Program

We offer several degree programs leading to the Bachelor of Arts (A.B.) and the Bachelor of Science (B.S.). To meet and discuss these programs with our staff advisors, see Academic Advising (<https://chemistry.ucdavis.edu/undergraduate/academic-advising/>).

The general B.S. degree in Chemistry is the one chemistry program offered by our department that is certified by the American Chemical Society (<http://www.acs.org/content/acs/en.html>) (ACS). Students in this program pursue a strong foundation in math and physics, in addition to chemistry, taking the higher-level sequences of all course options. This degree provides a strong foundation in experimental processes, instrumentation, and quantitative analysis. Students will be well-prepared to apply their chemistry knowledge to a wide array of applications, including environmental, pharmaceutical, materials, and industrial chemistry.

### Career Alternatives

Graduates will be able to successfully pursue their career objectives in advanced education in professional and/or graduate schools, a scientific career in government or industry, a teaching career in the school systems or other related career tracks.

### Major Advisor

To contact a major advisor in the Department of Chemistry, see Academic Advising (<https://chemistry.ucdavis.edu/undergraduate/academic-advising/>).

### Honors & Honors Program

The student must take courses CHE 194HA, CHE 194HB, and CHE 194HC, and complete a capstone research project (typically a written honors thesis). For more information, see Undergraduate Research (<https://chemistry.ucdavis.edu/undergraduate/undergraduate-research/>).

### Graduate Study

The Department of Chemistry offers programs of study and research leading to M.S. and Ph.D. degrees in Chemistry. Detailed information regarding graduate study may be obtained by contacting the Graduate Advisor, Department of Chemistry. See also Graduate Studies (<http://gradstudies.ucdavis.edu/>).

## Chemistry—American Chemical Society Accredited Program

Code	Title	Units
<b>Preparatory Subject Matter</b>		
Chemistry		15

CHE 004A & CHE 004B & CHE 004C	General Chemistry for the Physical Sciences & Engineering and General Chemistry for the Physical Sciences & Engineering and General Chemistry for the Physical Sciences & Engineering
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<b>Physics</b>		15
PHY 009A & PHY 009B & PHY 009C	Classical Physics and Classical Physics and Classical Physics	
PHY 009D	Modern Physics (may be taken, but not required.)	
<b>Mathematics</b>		16
MAT 021A & MAT 021B & MAT 021C & MAT 021D	Calculus and Calculus and Calculus and Vector Analysis	
Choose One:		4
MAT 022A & 022AL	Linear Algebra and Linear Algebra Computer Laboratory	
MAT/BIS 027A	Linear Algebra with Applications to Biology	
Choose One:		3-4
MAT 022B	Differential Equations	
MAT/BIS 027B	Differential Equations with Applications to Biology	
Preparatory Subject Matter Subtotal		53-54
<b>Depth Subject Matter</b>		
<b>Chemistry</b>		
CHE 105	Analytical & Physical Chemical Methods	4
CHE 108	Molecular Biochemistry	3
CHE 110A	Physical Chemistry: Introduction to Quantum Mechanics	4
CHE 110B	Physical Chemistry: Properties of Atoms & Molecules	4
CHE 110C	Physical Chemistry: Thermodynamics, Equilibria & Kinetics	4
CHE 115	Instrumental Analysis	4
CHE 124A	Inorganic Chemistry: Fundamentals	3
CHE 124B or CHE 124C	Inorganic Chemistry: Main Group Elements Inorganic Chemistry: D & F Block Elements	3
CHE 124L	Laboratory Methods in Inorganic Chemistry	2
CHE 125	Advanced Methods in Physical Chemistry	4
CHE 128A	Organic Chemistry	3
CHE 128B	Organic Chemistry	3
CHE 128C	Organic Chemistry	3
CHE 129A	Organic Chemistry Laboratory	2
CHE 129B	Organic Chemistry Laboratory	2
CHE 129C	Organic Chemistry Laboratory	2
At least 4 additional upper division units in Chemistry (CHE) <sup>1</sup>		4
Depth Subject Matter Subtotal		54
<b>Recommended</b>		
CHE 194HA	Undergraduate Honors Research	
CHE 194HB	Undergraduate Honors Research	
CHE 194HC	Undergraduate Honors Research	

CHE 199	Special Study for Advanced Undergraduates
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<b>Total Units</b>	<b>107-108</b>

<sup>1</sup> Except Chemistry CHE 107A & CHE 107B.