

MAJOR IN CHEMISTRY, FORENSIC CHEMISTRY CONCENTRATION

Requirements Effective Fall 2026

Chemistry majors must achieve a minimum grade of C (2.000) in all the listed courses required for the major in chemistry.

Freshman

		AUCC	Credits
CHEM 120 ¹	Foundations of Modern Chemistry (GT-SC2)	3A	4
CHEM 121 ¹	Foundations of Modern Chemistry Laboratory (GT-SC1)	3A	1
CHEM 192	Introductory Seminar in Chemistry		2
CHEM 241 ²	Foundations of Organic Chemistry		4
CHEM 242 ²	Foundations of Organic Chemistry Laboratory		1
CHEM 263	Foundations of Inorganic Chemistry		4
CHEM 264	Foundations of Inorganic Chemistry Laboratory		1
CO 150	College Composition (GT-CO2)	1A	3
MATH 155 or 160	Calculus for Biological Scientists I (GT-MA1)	1B	4
	Calculus for Physical Scientists I (GT-MA1)		
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		1C	3
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-and-humanities)		3B	3
Total Credits			30

Sophomore

CHEM 231	Foundations of Analytical Chemistry		3
CHEM 232	Foundations of Analytical Chemistry Lab		2
CHEM 321 or BC 351	Foundations of Chemical Biology		4
	Principles of Biochemistry		
CHEM 322	Foundations of Chemical Biology Laboratory		1
LIFE 102	Attributes of Living Systems (GT-SC1)	3A	4
PH 121 or 141	General Physics I (GT-SC1)	3A	5
	Physics for Scientists and Engineers I (GT-SC1)		
PH 122 or 142	General Physics II (GT-SC1)	3A	5
	Physics for Scientists and Engineers II (GT-SC1)		
MATH 271 or 161	Applied Mathematics for Chemists I		4
	Calculus for Physical Scientists II (GT-MA1)		
Select one group from the following:			5
Group A			
CS 150B	Culture and Coding: Python	3B	
Elective			
Group B			
CS 152	Python for STEM		
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-and-humanities)		3B	
Total Credits			33

Junior

CHEM 371	Fundamentals of Physical Chemistry		4
CHEM 372	Fundamentals of Physical Chemistry Lab	4A	1
CHEM 431	Instrumental Analysis	4B	3
MIP 300	General Microbiology		3
SOC 253	Intro to Criminology and Criminal Justice		3
SOC 275/ANTH 275	Introduction to Forensic Anthropology		3
Advanced Writing (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing) ³		2	3
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Social and Behavioral Science (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-science)		3C	3
Elective			3
Total Credits			29

Senior

BZ 350	Molecular and General Genetics		4
CHEM 333	Forensic Chemistry	4B	3
CHEM 434	Forensic Chemistry Laboratory		1
STAT 301 or 307	Introduction to Applied Statistical Methods		3
	Introduction to Biostatistics		
CHEM 493 or 499 ⁴	Senior Seminar	4C	2
	Senior Thesis		
In-depth Chemistry Courses (see list below)			6
Electives ⁵			9
Total Credits			28
Program Total Credits:			120

In-depth Chemistry Courses

At least 3 credits must come from laboratory course or lab components of lecture/laboratory courses: CHEM 312, CHEM 433, CHEM 440, CHEM 442, CHEM 456, CHEM 462, CHEM 477, or CHEM 498.

Code	Title	AUCC	Credits
CHEM 311	Introduction to Nanoscale Science		3
CHEM 312	Nanochemistry Laboratory		1
CHEM 315	Foundations of Polymer Chemistry		3
CHEM 320	Chemistry of Addictions		3
CHEM 338	Environmental Chemistry		3
CHEM 355	Foundations of Sustainable Chemistry		3
CHEM 433	Clinical Chemistry		3
CHEM 440	Advanced Organic Chemistry Laboratory	4B	2
CHEM 442	Chemistry of Hemp and Cannabis		3
CHEM 445	Synthetic Organic Chemistry	4B	3
CHEM 448	Medicinal Chemistry		3
CHEM 451	Foundations of Catalytic Chemistry		3
CHEM 456	Foundations of Sustainable Chemistry Lab		1
CHEM 461	Inorganic Chemistry	4B	3

CHEM 462	Inorganic Chemistry Laboratory	4B	2
CHEM 463	Applications of Spin in Chemistry		3
CHEM 465	Chemistry of Sustainable E-Waste Management		4
CHEM 476	Advanced Physical Chemistry	4B	3
CHEM 477	Advanced Physical Chemistry Laboratory	4B	1
CHEM 498	Research		1-3

¹ Students who complete General Chemistry in Freshman year (CHEM 111 or CHEM 107, CHEM 112 or CHEM 108, CHEM 113, CHEM 114) do not have to take CHEM 120 and CHEM 121.

² Students may complete the organic chemistry requirement by taking CHEM 341, CHEM 343, and CHEM 344. Students who take CHEM 245/CHEM 246 may complete the organic chemistry requirement by taking CHEM 343/CHEM 344. For both sets of these students, CHEM 343/CHEM 344 together count as an in-depth chemistry course.

³ CHEM 301 is recommended.

⁴ CHEM 499 by department approval. Students fulfilling the AUCC 4C requirement with CHEM 499 must write a thesis and present it to the department.

⁵ Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).