

MAJOR IN CHEMISTRY, FORENSIC CHEMISTRY CONCENTRATION

Major Completion Map

Distinctive Requirements for Degree Program:

TO PREPARE FOR FIRST SEMESTER: The curriculum for the new American Chemical Society Certified Chemistry major assumes students

enter college prepared to take calculus. Entering students who are not prepared to take calculus will need to fulfill pre-calculus requirements in the first semester. CHEM 111 and CHEM 120 require Algebra II as a prerequisite (this prerequisite is met by having Algebra II by test credit, transfer credit, or placement out of MATH 117 and MATH 118 on Math Placement Exam). Earned grades of C (2.000) or better are required in all listed courses for the major in chemistry. Students with credit for CHEM 111, CHEM 112, CHEM 113, CHEM 114 do not need to take CHEM 120, CHEM 121. Students with credit for CHEM 341, CHEM 343, CHEM 344 do not need to take CHEM 241, CHEM 242.

Freshman

Semester 1		Critical	Recommended	AUCC	Credits
CHEM 120	Foundations of Modern Chemistry (GT-SC2)	X		3A	4
CHEM 121	Foundations of Modern Chemistry Laboratory (GT-SC1)	X		3A	1
CHEM 192	Introductory Seminar in Chemistry	X			2
CO 150	College Composition (GT-CO2)	X		1A	3
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		X		1C	3
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-and-humanities)			X	3B	3

Total Credits

16

Semester 2		Critical	Recommended	AUCC	Credits
CHEM 241	Foundations of Organic Chemistry	X			4
CHEM 242	Foundations of Organic Chemistry Laboratory	X			1
CHEM 263	Foundations of Inorganic Chemistry	X			4
CHEM 264	Foundations of Inorganic Chemistry Laboratory	X			1
MATH 155 or 160	Calculus for Biological Scientists I (GT-MA1) Calculus for Physical Scientists I (GT-MA1)	X		1B	4

Total Credits

14

Sophomore

Semester 3		Critical	Recommended	AUCC	Credits
CHEM 231	Foundations of Analytical Chemistry	X			3
CHEM 232	Foundations of Analytical Chemistry Lab	X			2
LIFE 102	Attributes of Living Systems (GT-SC1)	X		3A	4
PH 121 or 141	General Physics I (GT-SC1) Physics for Scientists and Engineers I (GT-SC1)	X		3A	5
MATH 271 or 161	Applied Mathematics for Chemists I Calculus for Physical Scientists II (GT-MA1)				4

Total Credits

18

Semester 4		Critical	Recommended	AUCC	Credits
CHEM 321 or BC 351	Foundations of Chemical Biology Principles of Biochemistry	X			4
CHEM 322	Foundations of Chemical Biology Laboratory	X			1
PH 122 or 142	General Physics II (GT-SC1) Physics for Scientists and Engineers II (GT-SC1)	X		3A	5
Select one group from the following:					5

Group A

CS 150B Culture and Coding: Python

X 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					15
Junior					
Semester 5		Critical	Recommended	AUCC	Credits
CHEM 371	Fundamentals of Physical Chemistry	X			4
CHEM 372	Fundamentals of Physical Chemistry Lab	X		4A	1
SOC 275/ ANTH 275	Introduction to Forensic Anthropology	X			3
Advanced Writing (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)				2	3
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	3D	3
Total Credits					14
Semester 6		Critical	Recommended	AUCC	Credits
CHEM 431	Instrumental Analysis	X		4B	3
MIP 300	General Microbiology	X			3
SOC 253	Intro to Criminology and Criminal Justice	X			3
Social and Behavioral Science (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-science)			X	3C	3
Elective					3
Total Credits					15
Senior					
Semester 7		Critical	Recommended	AUCC	Credits
BZ 350	Molecular and General Genetics	X			4
CHEM 333	Forensic Chemistry	X		4B	3
CHEM 434	Forensic Chemistry Laboratory	X			1
STAT 301 or 307	Introduction to Applied Statistical Methods Introduction to Biostatistics	X			3
Elective			X		3
Total Credits					14
Semester 8		Critical	Recommended	AUCC	Credits
CHEM 493 or 499 Senior Seminar Senior Thesis		X		4C	2
In-depth Chemistry Courses (see list on Program Requirements tab)		X			6
Elective		X			6
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
Total Credits					14
Program Total Credits:					120