

MAJOR IN CHEMISTRY, MATERIALS 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

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
PH 121 or 141	General Physics I (GT-SC1) Physics for Scientists and Engineers I (GT-SC1)	X		3A	5
Select one course from the following:		X			4
Group A:					
MATH 271	Applied Mathematics for Chemists I				
Group B:					
MATH 161	Calculus for Physical Scientists II (GT-MA1)			1B	
Total Credits					14

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 course from the following:		X			4
Group A:					
MATH 272	Applied Mathematics for Chemists II				
Group B:					
MATH 261	Calculus for Physical Scientists III				
Total Credits					14

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 120 requires 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.

<i>Junior</i>					
Semester 5		Critical	Recommended	AUCC	Credits
CHEM 311	Introduction to Nanoscale Science	X			3
CHEM 371	Fundamentals of Physical Chemistry	X			4
CHEM 372	Fundamentals of Physical Chemistry Lab	X		4A	1
Advanced Writing (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)			X	2	3
Social and Behavioral Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)			X	3C	3
Total Credits					14
Semester 6		Critical	Recommended	AUCC	Credits
CHEM 315	Foundations of Polymer Chemistry	X			3
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-and-humanities)			X	3B	3
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	3D	3
Advanced Elective (see list on Program Requirements tab)			X		4
Elective			X		3
Total Credits					16
<i>Senior</i>					
Semester 7		Critical	Recommended	AUCC	Credits
Select three credits from the following courses:		X			3
CHEM 476	Advanced Physical Chemistry				
CHEM 477	Advanced Physical Chemistry Laboratory			4B	
CHEM 511	Solid State Chemistry				
CHEM 515	Polymer Chemistry				
ERHS 410	Environmental Health-Air and Waste Management				
Advanced Electives		X			6
Electives			X		7
Total Credits					16
Semester 8		Critical	Recommended	AUCC	Credits
CHEM 461	Inorganic Chemistry	X			3
CHEM 462	Inorganic Chemistry Laboratory	X		4B	2
CHEM 493 or 499 Senior Seminar				4C	2
Senior Thesis					
Advanced Elective (see list on Program Requirements tab)		X			3
Electives			X		6
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
Total Credits					16
Program Total Credits:					120