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 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.

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
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-and-humanities)			X	3B	3
Diversity and Global Awareness (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-global-awareness)			X	1C	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**

Junior

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 (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)			X	2	3
Social and Behavioral Sciences (http://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 (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-and-humanities)			X	3B	3
Historical Perspectives (http://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**

Senior

Semester 7		Critical	Recommended	AUCC	Credits
Select three credits from the following courses:		X			3
CHEM 476	Physical Chemistry II				
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 (See list on Program Requirements page.)		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
Select one course from the following:		X			2
CHEM 493	Senior Seminar			4C	
CHEM 499 or HONR 499	Senior Thesis Senior Honors Thesis			4C	
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**