

# MAJOR IN NATURAL SCIENCES, CHEMISTRY EDUCATION CONCENTRATION

All Chemistry Education majors must maintain a 2.75 GPA and receive a C or better in all content and education courses for licensure. All Chemistry Education majors are expected to be prepared to take CHEM 111/CHEM 112 their first semester which requires MATH 118. All course work must be completed prior to Student Teaching (AUCC 4A/B/C requirement). Admission into the teacher licensure program is required for phase II education courses and above.

## Major Completion Map

### Distinctive Requirements for Degree Program:

#### Freshman

Semester 1		Critical	Recommended	AUCC	Credits
CHEM 111	General Chemistry I (GT-SC2)		X	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)		X	3A	1
CO 150	College Composition (GT-CO2)			1A	3
LIFE 102	Attributes of Living Systems (GT-SC1)		X	3A	4
Select one course from the following:					4
MATH 155	Calculus for Biological Scientists I (GT-MA1)		X	1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)		X	1B	
MATH 117, MATH 118 may be necessary for some students to fulfill pre-requisite requirements.		X			

#### Total Credits

16

Semester 2		Critical	Recommended	AUCC	Credits
CHEM 113	General Chemistry II		X		3
CHEM 114	General Chemistry Lab II		X		1
LIFE 103	Biology of Organisms-Animals and Plants (GT-SC1)		X	3A	4
Select one course from the following:					4
MATH 255	Calculus for Biological Scientists II		X	1B	
MATH 161	Calculus for Physical Scientists II (GT-MA1)		X	1B	
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )				3B	3
CHEM 111 & CHEM 112 must be completed by the end of Semester 2.		X			
MATH 124, MATH 125, MATH 126 may be necessary for some students to fulfill pre-calculus requirements.		X			

#### Total Credits

15

#### Sophomore

Semester 3		Critical	Recommended	AUCC	Credits
STAT 301	Introduction to Applied Statistical Methods				3
Select one course from the following:					3-4
CHEM 341	Modern Organic Chemistry I		X		
CHEM 345	Organic Chemistry I		X		
Select one course from the following:					5
PH 121	General Physics I (GT-SC1)		X	3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)		X	3A	
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )				3B	3
Science Elective					2
CHEM 113, CHEM 114 & MATH 155 or MATH 160 must be completed by the end of Semester 3.		X			

#### Total Credits

16-17

Semester 4		Critical	Recommended	AUCC	Credits
EDUC 275	Schooling in the United States (GT-SS3)	X		3C	3
EDUC 340	Literacy and the Learner	X			3

Select one group from the following: 4-5

## Group A:

CHEM 343	Modern Organic Chemistry II	X	
CHEM 344	Modern Organic Chemistry Laboratory	X	

## Group B:

CHEM 346	Organic Chemistry II	X	
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Select one course from the following: 5

PH 122	General Physics II (GT-SC1)	X	3A
PH 142	Physics for Scientists and Engineers II (GT-SC1)	X	3A

CO 150 & MATH 161 or MATH 255 must be completed by the end of Semester 4. X

**Total Credits****15-16****Junior**

<b>Semester 5</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
BC 351	Principles of Biochemistry		X		4
EDUC 350	Instruction I-Individualization/Management	X			3
EDUC 386	Practicum-Instruction I	X			1
EDUC 461A	Secondary Science and Technology Education I	X			3
Advanced Writing ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing</a> )				2	3
CHEM 341 or CHEM 345 and PH 121 or PH 141 must be completed by the end of Semester 5.		X			

**Total Credits****14**

<b>Semester 6</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
CHEM 261	Fundamentals of Inorganic Chemistry	X			3
CHEM 473	Foundations of Physical Chemistry	X			4
EDUC 461B	Secondary Science and Technology Education II	X			3
Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )				3D	3
Science Elective					3
LIFE 102 must be completed by the end of Semester 6.		X			

**Total Credits****16****Senior**

<b>Semester 7</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
CHEM 334	Quantitative Analysis Laboratory				1
CHEM 335	Introduction to Analytical Chemistry				3
EDUC 450	Instruction II-Standards and Assessment	X			4
EDUC 486E	Practicum: Instruction II	X			1
Select one group from the following:					4

## Group A:

AA 100	Introduction to Astronomy (GT-SC2)			3A
AA 101	Astronomy Laboratory (GT-SC1)			3A

## Group B:

GEOL 120	Exploring Earth - Physical Geology (GT-SC2)			3A
GEOL 121	Introductory Geology Laboratory (GT-SC1)			3A

Diversity, Equity, and Inclusion (<http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion>) 1C 3

**Total Credits****16**

<b>Semester 8</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
EDUC 485B	Student Teaching: Secondary	X		4A,4B,4C	11
EDUC 493A	Seminar: Professional Relations	X		4C	1

The benchmark courses for the 8th semester are the remaining courses in the entire program of study. X

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<b>Total Credits</b>	<b>12</b>
<b>Program Total Credits:</b>	<b>121</b>