

# BACHELOR OF SCIENCE - EDUCATION - SUBJECT ENDORSEMENT IN CHEMISTRY (GRADES 7-12)

Students must complete the following program in addition to the Professional Education and Essential Studies requirements. It is strongly recommended that students pursuing this endorsement complete

- MATH 138 APPLIED CALCULUS as the Essential Studies SLO #4 requirement and
- GEOS 437 WORLD ENVIRONMENTAL ISSUES to fulfill the Essential Studies SLO #9 requirement.

A final grade of "C" or better must be attained in all endorsement area courses. To obtain a departmental recommendation, the student must complete a minimum of 9 credit hours from Chadron State College in BIOL, CHEM, GEOS, or PHYS.

Code	Title	Credits
Essential Studies ( <a href="http://catalog.csc.edu/undergraduate/essential-studies-program/">http://catalog.csc.edu/undergraduate/essential-studies-program/</a> )		
Professional Education Requirements ( <a href="http://catalog.csc.edu/secondary-education-requirements/">http://catalog.csc.edu/secondary-education-requirements/</a> )		
Core Requirements		
BIOL 136 & 136L	BIOLOGICAL SCIENCE and BIOLOGICAL SCIENCE LAB	3
CHEM 131 & 131L	COLLEGE CHEMISTRY I and COLLEGE CHEMISTRY I LAB	4
CHEM 132 & 132L	COLLEGE CHEMISTRY II and COLLEGE CHEMISTRY II LAB	4
CHEM 231 & 231L	SURVEY OF ORGANIC CHEMISTRY and SURVEY OF ORGANIC CHEMISTRY LAB	4
CHEM 310	CAPSTONE I: RESEARCH SEMINAR	1
CHEM 320	SUPERVISED STUDY IN LAB AND FIELD METHODS	1
CHEM 335 & 335L	BIOCHEMISTRY and BIOCHEMISTRY LABORATORY	4
CHEM 341 & 341L	QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB	4
CHEM 401	CAPSTONE II: SENIOR RESEARCH	1
CHEM 410	CAPSTONE III: SENIOR RESEARCH/THESIS	1
GEOS 231 & 231L	PHYSICAL GEOLOGY and PHYSICAL GEOLOGY LAB	4
Select one of the following:		4-5
PHYS 151 & 151L	COLLEGE PHYSICS I and COLLEGE PHYSICS I LAB	
PHYS 241 & 241L	UNIVERSITY PHYSICS I and UNIVERSITY PHYSICS I LAB	
Biology Electives		1
Upper division Chemistry electives		5
Total Credits		41-42