CHEMISTRY, BACHELOR OF SCIENCE WITH A CONCENTRATION IN CHEMISTRY EDUCATION

To obtain a B.S. with a major in Chemistry and a concentration in Chemistry Education, a student must fulfill university, college, and departmental requirements.

Chemistry, Bachelor of Science with a Concentration in Chemistry Education Requirements

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS - 34 Hours Required		
Minimum of "C-"required		
Fundamental Skills		**15**
Writing – 6 hrs.		
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	
Oral Communication – 3 hrs.		
CMST 1110	PUBLIC SPEAKING FUNDS	
or CMST 2120	ARGUMENTATION AND DEBATE	
Quantitative Literacy – 3 hrs.		
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING	
or MATH 1130	QUANTITATIVE LITERACY	
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS	
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT	
Data Literacy – 3 hrs.		
Select one from the following:		
STAT 1100	DATA LITERACY AND VISUALIZATION	
STAT 1530	ELEMENTARY STATISTICS	
Until Fall 2028, students can satisfy this requirement with an approved data literacy course, or any approved natural or social science general education course.		
Breadth of Knowledge		**13**
Social Science – 3 hrs.		
Humanities – 3 hrs.		
Natural & Physical Science (must complete a lab) – 4 hrs.		
Arts – 3 hrs.		
Individual and Social Responsibility		**6**
Cultural Knowledge – 3 hrs.		
Civic Knowledge and Engagement – 3 hrs.		
MAJOR REQUIREMENTS		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
Chemistry Major with a Concentration in Education - 97 Hours Required		
A Bachelor of Science Degree in chemistry with a concentration in education requires a minimum of 39 credits of course work in chemistry and a minimum of 39 credits in the College of Education, Health, and Human Sciences.		
Required Chemistry Coursework		**34**
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (** ^)	
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY (^)	
CHEM 2250	ORGANIC CHEMISTRY I (^)	
CHEM 2260 & CHEM 2274	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY LABORATORY (^)	
CHEM 2400 & CHEM 2404	QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB (^)	
CHEM 2500	INTRODUCTION TO INORGANIC CHEMISTRY (^)	
CHEM 3350 & CHEM 3354	PHYSICAL CHEMISTRY I and PHYSICAL CHEMISTRY I LABORATORY (^)	
CHEM 3360	PHYSICAL CHEMISTRY II (^)	
CHEM/BIOL 4650	BIOCHEMISTRY I (^)	
CHEM/BIOL 4654	BIOCHEMISTRY I LABORATORY (^)	
CHEM 4900	SENIOR ASSESSMENT IN CHEMISTRY	
Additional credit hours of chemistry must come from the following		**5**
Analytical		
CHEM 3030	ENVIRONMENTAL CHEMISTRY (^)	
CHEM 3424	SPECTROMETRIC CHARACTERIZATIONS (^)	
CHEM 4400	INSTRUMENTAL ANALYSIS (^)	
CHEM 4404	INSTRUMENTAL ANALYSIS LABORATORY (^)	
Biochemistry		
CHEM/BIOL 4660	BIOCHEMISTRY II (^ with the following lab)	
CHEM/BIOL 4664	BIOCHEMISTRY II LABORATORY (^)	
CHEM 4670	PROTEIN PURIFICATION AND CHARACTERIZATION (^)	
Chemistry Education		
CHEM 3720	CHEMISTRY TEACHING STRATEGIES	
Inorganic		
CHEM 3514	INORGANIC PREPARATIONS (^)	
CHEM 4500	ADVANCED INORGANIC CHEMISTRY (^)	
CHEM 4510	SOLID STATE INORGANIC CHEMISTRY (^)	
CHEM 4540	GEOCHEMISTRY (^)	
Medicinal		
CHEM 3710	ESSENTIALS OF MEDICINAL CHEMISTRY (^)	
Nuclear		
CHEM 4320	NUCLEAR CHEMISTRY (^)	
Organic		
CHEM 3210	INTRODUCTION TO MOLECULAR MODELING (^)	
CHEM 4230	ADVANCED ORGANIC CHEMISTRY - SYNTHESIS (^)	
CHEM 4240	ADVANCED ORGANIC CHEMISTRY - MECHANISM (^)	

CHEM 4250	ADVANCED ORGANIC CHEMISTRY: MECHANISMS AND MODELING (^)	
Physical		
CHEM 3364	PHYSICAL CHEMISTRY II LABORATORY (^)	
Polymer		
CHEM 4310	POLYMER CHEMISTRY (^)	
Research		
CHEM 4950	CHEMISTRY PROJECTS (^)	
CHEM 4960	CHEMISTRY PROBLEMS (^)	
Internship		
CHEM 4810	CHEMISTRY INTERNSHIP (^)	
Special Topics		
CHEM 4930	SPECIAL TOPICS IN CHEMISTRY (^)	
Select all of the following Educator Preparation Program Requirements		**39**
SPED 3800	DIFFERENTIATION AND INCLUSIVE PRACTICES (^)	
TED 2100	EDUCATIONAL FOUNDATIONS (^)	
TED 2200	HUMAN RELATIONS FOR BIAS-FREE CLASSROOMS (** ^)	
or TED 2060	EQUITY, LANGUAGE, AND CULTURAL LITERACY	
TED 2380	DEVELOPMENT AND LEARNING IN ADOLESCENCE (^)	
TED 2400	PLANNING FOR EFFECTIVE TEACHING (^)	
TED 3550	SECONDARY CLASSROOM MANAGEMENT (^)	
TED 3690	LITERACY AND LEARNING (^)	
TED 4000	SPECIAL METHODS IN THE CONTENT AREA (^)	
TED 4600	CLINICAL PRACTICE AND SEMINAR: ELEMENTARY OR SECONDARY LEVEL (^)	
To graduate certified to teach high school chemistry, a biology and geology course are required. BIOL 1450 is required and CHEM 4540/GEOL 1104 are recommended.		
Other Required Coursework		**9**
MATH 1950	CALCULUS I (^)	
MATH 1960	CALCULUS II (^)	
Select one of the following sequences		**10**
Sequence I		
PHYS 2110 & PHYS 1154	GENERAL PHYSICS I - CALCULUS LEVEL and GENERAL PHYSICS LABORATORY I (** ^)	
PHYS 2120 & PHYS 1164	GENERAL PHYSICS II-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II (^)	
Sequence II		
PHYS 1110 & PHYS 1154	PHYSICS FOR LIFE SCIENCE I and GENERAL PHYSICS LABORATORY I (** ^)	
PHYS 1120 & PHYS 1164	PHYSICS FOR LIFE SCIENCE II and GENERAL PHYSICS LABORATORY II (^)	
To graduate with an ACS certified degree, see your chemistry advisor for proper course selection.		
College Breadth		
College of Arts and Sciences' college breadth requirement satisfied by this major		
BS Cognate Requirement		**0**
See major.		
ELECTIVES		
Elective hours as required to reach a total of 120 hours		

Chemistry, Bachelor of Science with a Concentration in Chemistry Education Four-year Plan

Freshman

Fall		**Credits**
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY	4
ENGL 1150	ENGLISH COMPOSITION I	3
MATH 1950	CALCULUS I	5
CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS or ARGUMENTATION AND DEBATE	3
Attend Durango Days; other campus events.		
Set up a Handshake account and take the Pathway U career assessment.		
Attend the Student Involvement & Volunteer Fair to explore student organizations.		
Make advising appointment for spring: Sept-Oct.		
Work with your advisor to develop your Pathway in Stellic.		
	Credits	**15**
Spring		
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY	4
MATH 1960	CALCULUS II	4
TED 2100	EDUCATIONAL FOUNDATIONS	3
TED 2200 or TED 2060	HUMAN RELATIONS FOR BIAS-FREE CLASSROOMS or EQUITY, LANGUAGE, AND CULTURAL LITERACY	3
Attend campus events such as major exploration week to get an idea of interests and career paths.		
Schedule a resume review with UNO Career Services.		
Visit faculty office hours and ask about undergraduate research opportunities.		
Make advising appointment for summer and fall: February – March.		
	Credits	**14**
Summer		
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	3
PHYS 2110 or PHYS 1110	GENERAL PHYSICS I - CALCULUS LEVEL or PHYSICS FOR LIFE SCIENCE I	4
PHYS 1154	GENERAL PHYSICS LABORATORY I	1
	Credits	**8**
Sophomore		
Fall		
CHEM 2250	ORGANIC CHEMISTRY I	3
CHEM 2400 & CHEM 2404	QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB	4
General Education Course or Elective		3
General Education Course or Elective		3
Attend the Career & Internship Fair to start networking with employers.		

Look for volunteer, research, or part-time work to gain experience.		
Join a student organization or club related to your field or interests.		
Make advising appointment for spring: Sept. - Oct.		
	Credits	**13**
Spring		
CHEM 2260 & CHEM 2274	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY LABORATORY	5
TED 2380	DEVELOPMENT AND LEARNING IN ADOLESCENCE	3
TED 2400	PLANNING FOR EFFECTIVE TEACHING	6
General Education Course or Elective		3
Attend a career fair for informational and networking purposes.		
Update your resume and LinkedIn profile with new experiences.		
Investigate and apply for summer internships, research, or study abroad programs.		
Make advising appointment for summer and fall: February – March.		
	Credits	**17**
Summer		
PHYS 2120 or PHYS 1120	GENERAL PHYSICS II-CALCULUS LEVEL (*) or PHYSICS FOR LIFE SCIENCE II	4
PHYS 1164	GENERAL PHYSICS LABORATORY II (*)	1
General Education Course or Elective		3
	Credits	**8**
Junior		
Fall		
BIOL 1450	BIOLOGY I	5
CHEM 3350 & CHEM 3354	PHYSICAL CHEMISTRY I and PHYSICAL CHEMISTRY I LABORATORY	4
CHEM 4650 & CHEM 4654	BIOCHEMISTRY I and BIOCHEMISTRY I LABORATORY	4
General Education Course or Elective		3
Apply for a paid internship or research assistantship.		
Attend a mock interview workshop or use online interview tools with Career Services.		
Start researching and visiting graduate programs or professional schools.		
Visit Career Center, continue updating resume.		
Make advising appointment for spring: Sept-Oct.		
	Credits	**16**
Spring		
CHEM 2500	INTRODUCTION TO INORGANIC CHEMISTRY	3
CHEM 3360	PHYSICAL CHEMISTRY II	3
TED 3550	SECONDARY CLASSROOM MANAGEMENT	3
TED 3690	LITERACY AND LEARNING	3
Advanced Chemistry Elective(s) towards the requisite additional 5 credit hours		1-4
Request letters of recommendation from faculty for jobs or grad school.		
Attend the All-Majors Career Fair with a plan to network.		
Meet with your advisor or submit for a graduation check-in to review remaining degree requirements		
Make advising appointment for summer and fall: February – March.		
	Credits	**13-16**
Senior		
Fall		
GEOL 1170	INTRODUCTION TO PHYSICAL GEOLOGY	4
SPED 3800	DIFFERENTIATION AND INCLUSIVE PRACTICES	3
TED 4000	SPECIAL METHODS IN THE CONTENT AREA	3
Advanced Chemistry Elective		1-3
General Education Course or Elective		3
Check in with Career Center for networking tips.		
Finalize graduate school applications or job search strategy.		
Attend a career fair and start applying for full-time jobs.		
Prepare for interviews and salary negotiations with Career Services.		
Make advising appointment for spring: Sept. - Oct.		
	Credits	**14-16**
Spring		
CHEM 4900	SENIOR ASSESSMENT IN CHEMISTRY	0
TED 4600	CLINICAL PRACTICE AND SEMINAR: ELEMENTARY OR SECONDARY LEVEL	12
Complete your final advising check before graduation.		
Polish your resume, cover letters, and LinkedIn profile.		
Stay connected by joining alumni networks and professional organizations.		
Apply for graduation via MavLink.		
	Credits	**12**
	Total Credits	**130-135**

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.

This plan is not a contract and curriculum is subject to change

Additional Information About this Plan:
University Degree Requirements: The minimum number of hours for a UNO undergraduate degree is 120 credit hours. Please review the requirements for your specific program to determine all requirements for the program. In order to graduate on-time (four years for an undergraduate degree), you need to take 30 hours each year.

Placement Exams: For Math, English, Foreign Language, a placement exam may be required. More information on these exams can be found at https://www.unomaha.edu/enrollment-management/testing-center/placement-exams/information.php

**Transfer credit or placement exam scores may change suggested plan of study