

# CHEMISTRY/BIOCHEMISTRY/ SECONDARY MAJOR, BACHELOR OF ARTS IN EDUCATION (BAE)

This major satisfies the endorsement for grades 5–12. See the Education Department for prerequisites and additional requirements.

**Grade Requirements:** due to the cumulative nature of chemistry courses, the department strongly recommends that students receive a grade  $\geq$ C in all prerequisite chemistry courses.

Secondary Education students must complete the required Secondary Education Core and the following courses.

## Required Courses

CHEM 171 & 171L & CHEM 172 & CHEM 172L & CHEM 173 & CHEM 173L	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LABORATORY I and GENERAL CHEMISTRY II and GENERAL CHEMISTRY LABORATORY II and GENERAL CHEMISTRY III and GENERAL CHEMISTRY LABORATORY III	15
CHEM 304	QUANTITATIVE ANALYSIS	6
CHEM 316 & 316L	ENVIRONMENTAL CHEMISTRY and ENVIRONMENTAL CHEMISTRY LAB	5
or CHEM 141	SUSTAINABLE CHEMISTRY	
CHEM 351	ORGANIC CHEMISTRY	4
CHEM 352	ORGANIC CHEMISTRY	4
CHEM 372	ORGANIC CHEM LABORATORY I	3
CHEM 390	CHEMICAL METHODS IN SECONDARY SCHOOL	2
CHEM 421	PHYSICAL CHEMISTRY	4
CHEM 422	PHYSICAL CHEMISTRY	4
CHEM 480	BIOCHEMISTRY	5
or CHEM 319	MODERN INORGANIC CHEMISTRY	
SCED 390	SCIENCE TEACHING METHODS	2

## Required Supporting Courses

MATH/HONS 161	CALCULUS I	5
MATH 162	CALCULUS II	5
MATH 163	CALCULUS III	5
PHYS 151	GENERAL PHYSICS I	4
PHYS 152	GENERAL PHYSICS II	4
PHYS 153	GENERAL PHYSICS III	4
PHYS 161	MECHANICS LABORATORY	1
PHYS 162	HEAT AND OPTICS LABORATORY	1
PHYS 163	ELECTRONICS LABORATORY I	1

## Required Senior Capstones—must be taken concurrently

SCED 490A	SCIENCE TEACHING CAPSTONE SEMINAR	3
SCED 490B	SCIENCE TEACHING CAPSTONE FIELD APPLICATION	2

Total Credits 89

Education (<http://catalog.ewu.edu/ps/se/>)

## Secondary Education Core

30-hour multicultural education field requirement		
EDUC 303 & EDUC 309 & EDUC 341 & EDUC 386A & EDUC 413	FOUNDATIONS OF ASSESSMENT and FOUNDATIONS OF SECONDARY CLASSROOM MANAGEMENT and SECONDARY STRATEGIES, MANAGEMENT, ASSESSMENT and FIELD EXPERIENCE AND PRACTICUM and CONTENT AREA LITERACY: MANAGEMENT AND ASSESSMENT FOR SECONDARY EDUCATION CANDIDATES	15
EDUC 386B & EDUC 427	FIELD EXPERIENCE AND PRACTICUM and GENERAL STUDENT TEACHING K-12 (These are variable credit courses. The minimum for each is 3 credits.)	6-15
EDUC 426	SECONDARY STUDENT TEACHING 7-12	12
Total Credits		33-42

## University Competencies and Proficiencies

English (<http://catalog.ewu.edu/undergraduate-degree/#newitemtext>)  
 Quantitative and Symbolic Reasoning (<http://catalog.ewu.edu/undergraduate-degree/#mathcompproficienciestext>)  
 Placement and Clearance Exams (<http://catalog.ewu.edu/placement/>)  
 Prior Learning/Sources of Credit AP, CLEP, IB (<http://catalog.ewu.edu/prior-learning/>)

## General Education Requirements (<http://catalog.ewu.edu/undergraduate-degree/#generaleducationrequirementsger>) (GER)

- Minimum Credits—180 cumulative credit hours
  - 60 upper-division credits (300 level or above)
  - 45 credits in residence (attendance) at Eastern, with at least 15 upper-division credits in major in residence at Eastern
- Minimum Cumulative GPA  $\geq$ 2.0

## Breadth Area Core Requirements (<http://catalog.ewu.edu/undergraduate-degree/#generaleducationcorerequirementsgecr>) (BACR)

Humanities and Arts (<http://catalog.ewu.edu/undergraduate-degree/#humanitiesandfineartsgecr>)  
 Natural Sciences (<http://catalog.ewu.edu/undergraduate-degree/#naturalsciencesgecr>)  
 Social Sciences (<http://catalog.ewu.edu/undergraduate-degree/#socialsciencesgecr>)

## University Graduation Requirements (<http://catalog.ewu.edu/undergraduate-degree/#universitygraduationrequirementsugr>) (UGR)

Diversity Course List (<http://catalog.ewu.edu/undergraduate-degree/#cultureandgenderdiversityintheuslisttext>)  
 Foreign Language (<http://catalog.ewu.edu/undergraduate-degree/#foreignlanguageugrtext>) (for Bachelor of Arts)  
 Global Studies Course List (<http://catalog.ewu.edu/undergraduate-degree/#internationalstudiesrequirementtext>)  
 Minor or Certificate (<http://catalog.ewu.edu/undergraduate-degree/#majorminororcertificateugrtext>)  
 Senior Capstone Course List (<http://catalog.ewu.edu/undergraduate-degree/#capstonecourselisttext>)

All admitted students must officially Declare a Major (<https://inside.ewu.edu/center-for-academic-advising-and-retention/academic-planning-tools/declare-your-major/>) by the time they reach 90 credits (junior standing).

Application for Graduation (use EagleNET (<https://inside.ewu.edu/eaglenet/>)) must be made at least two terms in advance of the term you expect to graduate (undergraduate and post-baccalaureate).

Use the Catalog Archives (<https://catalog.ewu.edu/archives/>) to determine two important catalog years (<http://catalog.ewu.edu/undergraduate-degree/#activecatalogruletext>).

SOAR (<https://soar.ewu.edu/selfservice/general/home.html>) calculates based on these two catalog years.

1. The catalog *in effect at the student's first term* of current matriculation is used to determine **BACR** (Breadth Area Credit Requirements) and **UGR** (Undergraduate Graduation Requirements).
2. The catalog *in effect at the time the student declares a major or minor* is used to determine the program requirements.

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**Students who successfully earn a BAE in Chemistry/Biochemistry/Secondary from EWU should be able to do the following:**

- apply best practices to teach Chemistry that are outlined in the Next Generation Science Standards;
- demonstrate effective strategies for teaching Chemistry to a community of diverse students;
- demonstrate understanding of core concepts in Chemistry;
- describe the procedures for responding to potential safety hazards in the laboratory, classroom, and field;
- shows evidence of integrating the 3 dimensions of the Next Generation Science Standards.