

# CHEMISTRY/BIOCHEMISTRY MAJOR WITH FORENSIC SCIENCE OPTION, BACHELOR OF SCIENCE (BS)

The forensic science option prepares students for entry-level positions in state and federal forensic science labs as well as for graduate and professional schools.

## Major Declaration Requirements

Students must complete 45 hours of specified core courses with a combined minimum GPA  $\geq 3.0$  before being eligible to declare the forensic major (See note below).

It is assumed that the student will enter the program ready to take MATH 161.

**For all internships with law enforcement agencies, students will be required to pass a thorough background check.** Competitive internships at regional forensic labs are integrated into the curriculum along with research and independent study.

This option will require more than 12 terms (or 4 years) to complete at an average of 15 credits per term.

Note: these core courses are to be completed before formal acceptance into the forensics major and enrollment in the forensics science internship course: BIOL 171, BIOL 172, CHEM 140, CHEM 171, CHEM 171L, CHEM 172, CHEM 172L, CHEM 173, CHEM 173L, CHEM 304, PHYS 151.

**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.

## Required Chemistry Courses

CHEM 140	CRIMINALISTICS AND FORENSIC CHEMISTRY	5
CHEM 171 & 171L	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LABORATORY I	15
& CHEM 172 & CHEM 172L	and GENERAL CHEMISTRY II and GENERAL CHEMISTRY LABORATORY II	
& CHEM 173 & CHEM 173L	and GENERAL CHEMISTRY III and GENERAL CHEMISTRY LABORATORY III	
CHEM 304	QUANTITATIVE ANALYSIS	6
CHEM 319	MODERN INORGANIC CHEMISTRY	4
CHEM 351	ORGANIC CHEMISTRY	4
CHEM 352	ORGANIC CHEMISTRY	4
CHEM 353	ORGANIC CHEMISTRY	3
CHEM 372	ORGANIC CHEM LABORATORY I	3
CHEM 373	ORGANIC CHEM LABORATORY II	3
CHEM 420	INSTRUMENTAL ANALYSIS	5
CHEM 421	PHYSICAL CHEMISTRY	4
CHEM 422	PHYSICAL CHEMISTRY	4
CHEM 431	PHYSICAL CHEMISTRY LABORATORY	1
CHEM 445	TOPICS IN FORENSIC CHEMISTRY	5
CHEM 450	ADVANCED FORENSIC CHEMISTRY	5

CHEM 480	BIOCHEMISTRY	5
CHEM 495	INTERNSHIP	5
or CHEM 399	DIRECTED STUDY	
or CHEM 499	DIRECTED STUDY	

## Required Supporting Courses

BIOL 171	BIOLOGY I	5
BIOL 172	BIOLOGY II	5
BIOL 173	BIOLOGY III	5
BIOL 310	FUNDAMENTALS OF GENETICS	5
BIOL 438	MOLECULAR BIOLOGY	5
CRIM 300	INTRODUCTION TO THE CRIMINAL JUSTICE SYSTEM	5
MATH/HONS 161	CALCULUS I	5
MATH 162	CALCULUS II	5
MATH 163	CALCULUS III	5
MATH 380	ELEMENTARY PROBABILITY AND STATISTICS	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 Capstone

CHEM 491	SENIOR THESIS (variable credit—must be taken for 5 credits)	5
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Total Credits 151

## Suggested Supporting Courses

BIOL 301	MICROBIOLOGY	5
CMST 201	PUBLIC SPEAKING	5
CRIM 304	FORENSIC INQUIRY	5
POLI 306	BASIC CONCEPTS OF CRIMINAL LAW	5
TCOM 205	INTRODUCTION TO TECHNICAL COMMUNICATION	5

## University Competencies and Proficiencies

English (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#newitemtext>)  
 Quantitative and Symbolic Reasoning (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#mathcompproficiencytext>)  
 Placement and Clearance Exams (<http://catalog.ewu.edu/archives/2021-2022/placement/>)  
 Prior Learning/Sources of Credit AP, CLEP, IB (<http://catalog.ewu.edu/archives/2021-2022/prior-learning/>)

General Education Requirements (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#generaleducationrequirementstext>) (**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/archives/2021-2022/undergraduate-degree/#generaleducationcorerequirementsgecrtext>) (**BACR**)

Humanities and Arts (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#humanitiesandfineartsgecrtext>)

Natural Sciences (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#naturalsciencesgecrtext>)

Social Sciences (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#socialsciencesgecrtext>)

- demonstrate effective oral and written communication skills and critical thinking skills as related to the field of chemistry;
- demonstrate knowledge of safe practices in the handling, usage and disposal of chemicals.

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University Graduation Requirements (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#universitygraduationrequirementstext>) (**UGR**)

Diversity Course List (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#cultureandgenderdiversityintheuslisttext>)

Foreign Language (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#foreignlanguageugrttext>) (for Bachelor of Arts)

Global Studies Course List (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#internationalstudiesrequirementstext>)

Minor or Certificate (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#majorminororcertificateugrttext>)

Senior Capstone Course List (<http://catalog.ewu.edu/archives/2021-2022/undergraduate-degree/#capstonecourselisttext>)

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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/archives/2021-2022/undergraduate-degree/#activecatalogrulestext>).

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 BS in Chemistry/Biochemistry Major with Forensic Science with Biochemistry from EWU should be able to do the following:**

- demonstrate a broad-based knowledge of major concepts in the areas of inorganic, organic, analytical and physical chemistry;
- demonstrate sufficient preparation in chemistry to successfully compete in a graduate or professional program or to realize employment in a chemistry- or biochemistry-related career;
- demonstrate a capacity to use modern instrumentation and classical techniques for the analysis and/or separation of chemicals and an ability to interpret data;