

CHEMISTRY AND BIOCHEMISTRY—CHEMISTRY MAJOR, BACHELOR OF ARTS (BA)

This program features less concentration in chemistry than the bachelor of science and is not intended to prepare students for employment as a professional chemist.

Notes:

- two years of a single high school foreign language or one year of a single college-level foreign language is required for this major;
- a minor is advised but not required for this option.

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 Courses

| | | |
|----------------------|--|----|
| CHEM 171 & 171L | GENERAL CHEMISTRY I and GENERAL CHEMISTRY LABORATORY I | 15 |
| CHEM 172 & CHEM 172L | GENERAL CHEMISTRY II and GENERAL CHEMISTRY LABORATORY II | |
| CHEM 173 & CHEM 173L | GENERAL CHEMISTRY III and GENERAL CHEMISTRY LABORATORY III | |
| CHEM 304 | QUANTITATIVE ANALYSIS | 6 |
| CHEM 351 | ORGANIC CHEMISTRY | 4 |
| CHEM 352 | ORGANIC CHEMISTRY | 4 |
| CHEM 353 | ORGANIC CHEMISTRY | 3 |
| CHEM 372 | ORGANIC CHEM LABORATORY I | 3 |
| CHEM 421 | PHYSICAL CHEMISTRY | 4 |
| CHEM 422 | PHYSICAL CHEMISTRY | 4 |
| CHEM 431 | PHYSICAL CHEMISTRY LABORATORY | 1 |
| CHEM 432 | PHYSICAL CHEMISTRY LABORATORY | 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 |

Electives—choose 300–level or above Chemistry and Biochemistry courses (exclusive of CHEM 390) 4

Suggested Supporting Course—see your chemistry/biochemistry advisor.

Completion of a computer programming course is strongly recommended.

Required Capstone

| | | |
|----------|---------------|---|
| CHEM 491 | SENIOR THESIS | 5 |
|----------|---------------|---|

or CHEM 490 ADVANCED INORGANIC CHEMISTRY OR SENIOR CAPSTONE

Total Credits 85

University Competencies and Proficiencies

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

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

- Humanities and Arts (<http://catalog.ewu.edu/undergraduate-degree/#humanitiesandfineartsgecrtext>)
- Natural Sciences (<http://catalog.ewu.edu/undergraduate-degree/#naturalsciencesgecrtext>)
- Social Sciences (<http://catalog.ewu.edu/undergraduate-degree/#socialsciencesgecrtext>)

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

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

- demonstrate a knowledge of major concepts in the areas of inorganic, organic; analytical, and physical chemistry;
- demonstrate sufficient preparation in chemistry to successfully compete in a science-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;
- 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.