

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

This program is recommended for students planning to go directly into professional fields of biochemistry, for students planning to attend graduate school in biochemistry, molecular biology or pharmacology and for students planning to enter professional schools such as medicine, veterinary medicine or pharmacy.

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

Required Courses

CHEM 151	GENERAL CHEMISTRY	5
CHEM 152	GENERAL CHEMISTRY	5
CHEM 153	GENERAL CHEMISTRY	5
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	3
CHEM 431	PHYSICAL CHEMISTRY LABORATORY	1
CHEM 480	BIOCHEMISTRY	5
CHEM 481	INTERMEDIARY METABOLISM	5
CHEM 482	INTEGRATED TOPICS IN BIOCHEMISTRY AND BIOPHYSICS	3
CHEM 483	BIOCHEMISTRY LABORATORY	2
CHEM 484	BIOCHEMISTRY LABORATORY	2
CHEM 491	SENIOR THESIS	4-6

Select one of the following four courses 3-5

CHEM 419	ADVANCED INORGANIC CHEMISTRY	
CHEM 420	INSTRUMENTAL ANALYSIS	
CHEM 423	PHYSICAL CHEMISTRY	
CHEM 454	CLINICAL CHEMISTRY	

Select one of the following three courses 4

CHEM 395	INTERNSHIP	
CHEM 498	SEMINAR	
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
MATH 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	INSTRUMENTATION LAB I	1

Suggested—a computer programming course is strongly recommended. See your chemistry/biochemistry advisor.

Total Credits 126-130

For information on General Education, see Undergraduate Degree (<http://catalog.ewu.edu/archives/2015-2016/undergraduate-degree>).

Student Learning Outcomes—students will

- 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;
- 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.