

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

This program is approved by the American Chemical Society and it is recommended for those students who plan to become professional chemists. It provides a broad and strong background in the fundamentals of chemistry and an excellent foundation for graduate school or a career in industry.

Notes:

- a computer programming course is strongly recommended—see your chemistry/biochemistry advisor;
- the department strongly recommends that students receive a grade ≥ 2.0 in all prerequisite chemistry courses.

Required Courses

CHEM 151	GENERAL CHEMISTRY	5
CHEM 152	GENERAL CHEMISTRY	5
CHEM 153	GENERAL CHEMISTRY	5
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 419	ADVANCED INORGANIC CHEMISTRY	5
CHEM 420	INSTRUMENTAL ANALYSIS	5
CHEM 421	PHYSICAL CHEMISTRY	4
CHEM 422	PHYSICAL CHEMISTRY	3
CHEM 423	PHYSICAL CHEMISTRY	3
CHEM 431	PHYSICAL CHEMISTRY LABORATORY	1
CHEM 432	PHYSICAL CHEMISTRY LABORATORY	2
CHEM 433	PHYSICAL CHEMISTRY LABORATORY	2
CHEM 480	BIOCHEMISTRY	5
CHEM 491	SENIOR THESIS	4-6
Choose from the following courses		3
CHEM 498	SEMINAR	
CHEM 499	DIRECTED STUDY	

Required Supporting Courses

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
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Total Credits 109-111

For information on General Education, see Undergraduate Degree (<http://catalog.ewu.edu/archives/2016-2017/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.