



**Biochemistry  
Bachelor of Science  
Arts & Sciences  
Traditional**

**Program Coordinator: S. Pickard**

The B.S. in Biochemistry provides students with an opportunity to receive a thorough scientific training in the context of a Christian worldview. This program integrates a strong understanding of chemical and biological principles and quantitative problem solving with the development of hands-on research skills. Also, the Biochemistry program includes a strong oral and written communication component. Thus, our students receive an educational experience that goes beyond the specific skills they need to be successful biochemists and helps them to develop into well-rounded individuals who are ready to take their places in society.

**Student Learning Outcomes**

1. Graduates will demonstrate proficiency in content knowledge, including chemistry problem solving techniques.
2. Graduates will demonstrate proficiency in traditional chemistry lab techniques.
3. Graduates will demonstrate proficiency in oral scientific communication.
4. Graduates will demonstrate proficiency in written scientific communication.

This major prepares a student for graduate work in Biochemistry as well as many areas of Chemistry or Biology. In addition, the minimum requirements of almost all medical, dental, veterinary, and pharmacy schools are met by a biochemistry major. It is valuable for those students who seek careers in the biotechnology industry, pharmaceutical industry, government, and science-based sales and marketing.

Due to the large number of courses that biochemistry shares in common with Biology and Chemistry, a student cannot simultaneously major in Biochemistry and major or minor in Biology, Chemistry, or Forensic Science.

**Comprehensive Assessment**

The Chemistry Capstone (CHEM 4930) and Comprehensive Assessment (CHEM 4990) are required for all Biochemistry majors. CHEM 4990 is an end of program exam which tests the student's knowledge of chemistry in the areas of Organic, Analytical and Physical. CHEM 4930 is review course designed to prepare the student for the end of program exam, and there is a letter grade assigned for CHEM 4930. Both CHEM 4990 and 4930 are normally taken during the Fall or Spring semester leading up to the student's graduation.

**Core Curriculum Requirements**

Biochemistry majors should fulfill specified categories of the King Core Curriculum by taking the courses indicated below. See the "The Core Curriculum" section of the catalog for additional details.

**Science**

CHEM 1110  
 General Chemistry I..... 4 s.h.

**Quantitative Literacy**

MATH 2350  
 Calculus I..... 4 s.h.

**Biochemistry Major Requirements**

The technology requirement for a biochemistry major is the minimum required by the university: namely, a laptop computer with a minimum of Microsoft Office 2010 or later, wireless capability, and a webcam.

The following courses are required for all biochemistry majors:

CHEM 1120  
 General Chemistry II ..... 4 s.h.

CHEM 2110  
 Organic Chemistry I & II..... 4 s.h.

CHEM 2120  
 Organic Chemistry II..... 4 s.h.

CHEM 3000  
 Analytical Chemistry I..... 4 s.h.

CHEM 4000  
 Physical Chemistry I..... 5 s.h.

*Choose from the following courses* ..... 4 s.h.

CHEM 3200  
 Analytical Chemistry II (4 s.h.)

CHEM 4200  
 Physical Chemistry II (4 s.h.)

BIOL 2110  
 General Biology I..... 4 s.h.

BIOL 2120  
 General Biology II ..... 4 s.h.

BIOL 3760  
 Genetics ..... 4 s.h.

BIOL 3770  
 Molecular Biology ..... 4 s.h.

BIOL 3300  
 Cell Biology..... 4 s.h.

BIOL 3700  
 Biochemistry..... 4 s.h.

BIOL 4670  
 Mammalian Toxicology ..... 4 s.h.

*Choose from the following courses* ..... 4 s.h.

BIOL 3250  
 Bioinformatics (4 s.h.)

BIOL 4400  
 Microbiology (4 s.h.)

BIOL 3600  
 Human and Mammalian Physiology (4 s.h.)

PHYS 2210	
General Physics I .....	4 s.h.
PHYS 2220	
General Physics II.....	4 s.h.
MATH 2360	
Calculus II.....	4 s.h.
IDST 4500	
Interdepartmental Science and Mathematics Seminar.....	2 s.h.
CHEM 4930	
Chemistry Capstone.....	1 s.h.
CHEM 4990	
Comprehensive Assessment .....	0 s.h.
<b>Summary of Total Credits</b>	
Core Curriculum .....	42 s.h.
Major Requirements.....	72 s.h.
Minor/Electives .....	10 s.h.
<b>Minimum to Earn Bachelor of Science .....</b>	<b>124 s.h.</b>