



Major in BioChemistry, B.S.

2018-2019

Additional Sources of Information

WEBSITE:

www.swau.edu

DEPARTMENT CONTACTS:

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The Bachelor of Science in Biochemistry is one of four exciting Chemistry programs offered by Southwestern Adventist University's Department of Mathematics and Physical Sciences. The other programs are the Bachelor of Arts in Chemistry, the Bachelor of Science in Chemistry and Bachelor of Science in Physical Science -Secondary Teacher Certification with concentration in Chemistry. The aim of the chemistry program is to develop in students the ability to think critically and creatively. The chemistry curriculum is designed to provide the student with a strong background in the areas of organic chemistry, biochemistry, analytical chemistry and physical chemistry. The major will serve as a solid foundation upon which the candidate can build a professional career or a more specialized graduate program.

Job Market

Most of Southwestern Adventist University's Chemistry graduates have chosen to pursue careers in medicine, pharmacy, dentistry or clinical laboratory science. There are many other career options for chemistry majors. These include graduate school, entry level positions in academia, industry, analytical labs, pharmaceutical labs, the government and the chemical industry. National interest in STEM (Science, Technology, Engineering and Mathematics) disciplines have highlighted the need for graduates trained in these areas, at all academic levels and as a matter of highest national significance.

Job Outlook

The Bureau of Labor Statistics reports that: "Employment of chemists and materials scientists is expected to increase by 4 percent from 2010 to 2020, slower than the average for all occupations. Chemists and materials scientists with an advanced degree, particularly those with a Ph.D., are expected to experience better opportunities."

Earnings

Earning potential is also affected by geographic location and by whether one pursues a career in industry, academia or in a government related organization. In the period from 2012 to 2015 salaries for inexperienced B.A./B.S., M.S. and Ph.D. graduates ranged from \$77K-\$78.5K, \$79K-\$89.5K and \$100K-\$108K respectively. (*Chemical and Engineering News, Nov 9, 2015.*)

Educational Qualifications

Bachelor degree candidates are generally qualified for entry level positions in most career fields. Getting a graduate or professional degree will significantly increase the earning potential of the holder of a first degree.

General Education Requirements

To view general education requirements for this major please visit catalog.swau.edu/Undergraduate/2018-2019.





BIOL 111	General Biology I.....	4	CHEM 231	Organic Chemistry I.....	4
BIOL 112	General Biology II.....	4	CHEM 232	Organic Chemistry II.....	4
BIOL 340	Cellular and Molecular Biology I.....	4	CHEM 341	Physical Chemistry I.....	4
BIOL—Electives chosen from:		4	CHEM 431	Biochemistry I.....	3
<i>BIOL 330 Bacteriology and Virology</i>		4	CHEM 432	Biochemistry I Lab.....	1
<i>BIOL 410 Human Physiology</i>		4	CHEM 433	Biochemistry II.....	3
<i>BIOL 450 Histology</i>		4	CHEM 434	Biochemistry II Lab.....	1
CHEM 111	General Chemistry I.....	4	CHEM 475	Research Methods in Chemistry.....	4
CHEM 112	General Chemistry II.....	4	CHEM	Electives upper division.....	4
CHEM 201	Research Methods in the Physical Sciences....	1			
CHEM 221	Modern Analytical Chemistry.....	4			
				TOTAL:	57

REQUIRED COGNATES

MATH 181	Calculus I.....	3	PHYS 121	General Physics I.....	4
MATH 182	Calculus II.....	3	PHYS 122	General Physics II.....	4
MATH 283	Calculus III.....	3			

SAMPLE FOUR-YEAR SCHEDULE

	FIRST SEMESTER	SECOND SEMESTER
<i>First Year</i>	CHEM 111—General Chemistry I.....4 BIOL 111—General Biology I.....4 ENGL 121—Freshman Composition.....3 UNIV 111—Wellness for Life.....2 Computer Science Elective.....3 TOTAL.....16	CHEM 112—General Chemistry II.....4 BIOL 112—General Biology II.....4 COMM 111—Speech.....3 MATH 121—PreCalculus.....3 Religion Elective.....3 TOTAL.....17
<i>Second Year</i>	CHEM 231—Organic Chemistry I.....4 CHEM 202—Modern Analytical Chemistry.....4 PHYS 121—General Physics I.....4 ENGL 220—Research Writing.....3 KINA Activity Elective.....1 TOTAL.....16	CHEM 231—Organic Chemistry II.....4 CHEM 201—Research Methods in the Physical Sciences....1 PHYS 122—General Physics II.....4 MATH 181—Calculus I.....4 History/Social Science Elective.....3 TOTAL.....16
<i>Third Year</i>	CHEM 431—Biochemistry I.....3 CHEM 432—Biochemistry I Lab.....1 MATH 182—Calculus II.....3 BIOL 340—Cell & Molecular Biology I.....4 BIOL 341—Cell & Molecular Biology II.....4 TOTAL.....15	CHEM 433—Biochemistry II.....3 CHEM 434—Biochemistry II Lab.....1 CHEM—Upper Division Elective.....4 MATH 383—Calculus III.....4 Religion Elective.....3 KINA Activity Elective.....1 TOTAL.....16
<i>Fourth Year</i>	ENGL—Literature Elective.....3 Religion Elective.....3 History/Social Science Elective.....3 CHEM 341—Physical Chemistry I.....4 Fine Arts Elective.....3 TOTAL.....16	CHEM 475—Research Methods in Chemistry.....4 BIOL—Upper Division Elective.....4 History/Social Science Elective.....3 Upper Division Religion Elective.....3 TOTAL.....14