

B.A. Chemistry

2023-24

WEBSITE

<https://swau.edu/MathPhy/chemistry/ba>

DEPARTMENT PERSONNEL

Chair

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The Bachelor of Arts in Chemistry 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 Science in Biochemistry, the Bachelor of Science in Chemistry, and Bachelor of Science in Physical Science -Secondary Teacher Certification with a 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 2018-2028, 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. Expected earned income for an individual with a BA or BS degree ranges from \$64,230 to \$129,950. (USA News, 2019)

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Required Courses

Item #	Title	Credits
CHEM 111	General Chemistry I	4
CHEM 112	General Chemistry II	4
CHEM 201	Research Methods in the Physical Sciences	1
CHEM 221	Modern Analytical Chemistry	4
CHEM 231	Organic Chemistry I	4
CHEM 232	Organic Chemistry II	4
CHEM 341	Physical Chemistry I	4
CHEM 431	Biochemistry I	3
CHEM 432	Biochemistry I Lab	1
CHEM 462	Inorganic Chemistry	3
CHEM 475	Research Methods in Chemistry	4
	CHEM Electives upper division	4
	Sub-Total Credits	40

Required Cognates

Item #	Title	Credits
MATH 181	Calculus I	4
PHYS 121	General Physics I	4
PHYS 122	General Physics II	4
	Sub-Total Credits	12

Recommended cognates:

Item #	Title	Credits
MATH 182	Calculus II	4
MATH 283	Calculus III	4
CSIS 110	Principles of Computer Programming I	3
PHYS 221	General Physics with Calculus I	1
PHYS 222	General Physics with Calculus II	1
	Sub-Total Credits	13

Sample 4 Year Curriculum

General Education Requirements

To view general education requirements for this major please visit: <https://catalog.swau.edu/core-curriculum-for-a-bachelors-degree>

First Year First Semester

Item #	Title	Credits
CHEM 111	General Chemistry I	4
COMM 111	Speech	3
ENGL 121	Freshman Composition	3
	History GE Requirement	3
UNIV 111	Wellness for Life	2
	Sub-Total Credits	15

First Year Second Semester

Item #	Title	Credits
CHEM 112	General Chemistry II	4
	History GE Requirement	3
MATH 180	Precalculus	4
	Minor Elective	3
	Religion GE Requirement	3
	Sub-Total Credits	17

Second Year First Semester

Item #	Title	Credits
CHEM 221	Modern Analytical Chemistry	4
CHEM 231	Organic Chemistry I	4
ENGL 220	Research Writing	3
	Kinesiology GE Requirement	1
PHYS 121	General Physics I	4
	Sub-Total Credits	16

Second Year Second Semester

Item #	Title	Credits
CHEM 201	Research Methods in the Physical Sciences	1
CHEM 232	Organic Chemistry II	4
	Kinesiology GE Requirement	1
MATH 181	Calculus I	4
PHYS 122	General Physics II	4
	Social Science GE Curriculum Guide	3
	Sub-Total Credits	17

Third Year First Semester

Item #	Title	Credits
	Beginning Language Requirement	4
CHEM 431	Biochemistry I	3
CHEM 432	Biochemistry I Lab	1
	Life and Physical Science GE Requirement	4
	Minor Elective	3
	Religion GE Requirement	3
	Sub-Total Credits	18

Third Year Second Semester

Item #	Title	Credits
	Beginning Language Requirement	4
	CHEM Electives upper division	4
	Fine Arts GE Requirement	3
	Literature GE Requirement	3
	Minor Elective	3
	Sub-Total Credits	17

Fourth Year First Semester

Item #	Title	Credits
CHEM 341	Physical Chemistry I	4
	Intermediate Language Requirement	3
	Minor Elective	3
	Minor Elective	3
	Religion GE Requirement	3
	Sub-Total Credits	16

Fourth Year Second Semester

Item #	Title	Credits
CHEM 462	Inorganic Chemistry	3
CHEM 475	Research Methods in Chemistry	4
	Intermediate Language Requirement	3
	Minor Elective	3
	Religion GE Requirement	3
	Sub-Total Credits	16

June 2023

Southwestern Adventist University—Office of Academic Administration