

Major in Chemistry (BS)

Science Option

120 hours

University Requirement – 2 hours

GSTD 1002 Freshman Seminar

General Education – 24 hours (Mathematics, natural science and physical science courses are included in the major.)

Chemistry – 49 hours

CHEM	1501	Background and Strategies in Chemistry (BASIC)
CHEM	1023/1021	University Chemistry I/Lab
CHEM	1123/1121	University Chemistry II/Lab
CHEM	2012/2001	Analytical Chemistry I/Lab
CHEM	3003/3001	Organic Chemistry I/Lab
CHEM	3103/3101	Organic Chemistry II/Lab
CHEM	3073	Biochemistry I
CHEM	3233	Intermediate Inorganic Chemistry
CHEM	3313/3311	Instrumentation I/Lab
CHEM	4313/4111	Instrumentation II/Lab
CHEM	4403/4401	Physical Chemistry: Thermodynamics/Lab
CHEM	4413/4411	Physical Chemistry: Quantum and Kinetics/Lab
CHEM	4051	Senior Seminar-Chemistry
CHEM	4701-3	Undergraduate Research*

*Three research hours required. American Chemical Society certified BS Chemistry degrees require 3 hours of research credit, which may be obtained at SAU or through another advisor-approved research activity or program

Select 1 hour from the following:

CHEM	3071	Biochemistry I Lab
CHEM	3231	Intermediate Inorganic Chemistry Lab

Select 2 or more hours from the following:

CHEM	4013	Advanced Organic Chemistry
CHEM	4033	Advanced Inorganic Chemistry
CHEM	4073	Biochemistry II
CHEM	4701-3	Undergraduate Research
CHEM	4791-3	Advanced Topics in Chemistry I
CHEM	4891-3	Advanced Topics in Chemistry II
CHEM	4991-3	Advanced Topics in Chemistry III

Biology – 4 hours

BIOL 1203/1201 Principles of Biology I/Lab

Physics – 8 hours

PHYS	2203/2201	University Physics I/Lab
PHYS	2213/2211	University Physics II/Lab

Mathematics – 18 hours

MATH	1045	Pre-Calculus Mathematics**
MATH	1525	Calculus I
MATH	1545	Calculus II
MATH	2563	Calculus III

**Taking both MATH 1023 College Algebra and MATH 1033 Plane Trigonometry is equivalent to MATH 1045 Pre-Calculus Mathematics.

Other Requirements – 6 hours

ENGL	3003	Advanced Professional Writing
SPCH	1113	Introduction to Public Speaking

Electives – 9 hours

College of Science and Engineering electives 4-9 hours.

University electives may be used but may not exceed 6 hours of the 9 total elective hours.

Chemistry Major – Science Option (BS)

Suggested Plan of Study

2018-2019 Catalog

Fall - Semester 1		Spring - Semester 2	
ENGL 1113 Composition I	3	ENGL 1123 Composition II	3
MATH 1045 Pre-Calculus Mathematics	5	MATH 1525 Calculus I	5
CHEM 1501 Background and Strategies in Chemistry (BASIC)	1	*HIST 1003 or 1013 World History I or II OR HIST 2013 or 2023 U.S. History I or II or PSCI 2003 American Government: National)	3
CHEM 1023/1021 University Chemistry I/Lab	4	CHEM 1123/1121 University Chemistry II/Lab	4
GSTD 1002 Freshman Seminar	2		
Total Semester Hours	15	Total Semester Hours	15
Fall - Semester 3		Spring - Semester 4	
World Literature I/II (ENGL 2213 or ENGL 2223)	3	CHEM 2012/2001 Analytical Chemistry/Lab	3
CHEM 3003/3001 Organic Chemistry I/Lab	4	CHEM 3103/3101 Organic Chemistry II/Lab	4
BIOL 1203/1201 Principles of Biology I/Lab	4	MATH 1545 Calculus II	5
SPCH 1113 Introduction to Public Speaking	3	ENGL 3003 Advanced Professional Writing	3
Total Semester Hours	14	Total Semester Hours	15
Fall - Semester 5		Spring - Semester 6	
MATH 2563 Calculus III	3	Chemistry Elective	2
PHYS 2203/2201 University Physics I/Lab	4	PHYS 2213/2211 University Physics II/Lab	4
CHEM 3313/3311 Instrumentation I/Lab or CHEM 4313/4311 Instrumentation II/Lab	4	CHEM 3073 Biochemistry I CHEM 3071 Biochemistry I Lab**	3-4**
Social Science choice (ECON 2103, FIN 2003, GEOG 2003, PSCI 2003, PSYC 2003, SOC 1003 or SOC 2003)	3	CHEM 3233 Intermediate Inorganic Chemistry CHEM 3231 Intermediate Inorganic Chem. Lab**	3-4**
Fine Arts/Humanities (ART 2013, HUM 2003, ENGL 2213, ENGL 2223, MUS 2003 or MUS 2013, PHIL 2403, THEA 2003 or Foreign Language)	3	Fine Arts/Humanities (ART 2013, HUM 2003, ENGL 2213, ENGL 2223, MUS 2003 or MUS 2013, PHIL 2403, THEA 2003 or Foreign Language)	3
Total Semester Hours	17		16
Fall - Semester 7		Spring - Semester 8	
CHEM 4403/4401 Physical Chemistry: Thermodynamics	4	CHEM 4413/4411 Physical Chemistry: Quantum and Kinetics/Lab	4
CHEM 4701 Undergraduate Research	1	CHEM 4702 Undergraduate Research	2
CHEM 4051 Senior Seminar – Chemistry	1	Electives	6
CHEM 3313/3311 Instrumentation I/Lab or CHEM 4313/4311 Instrumentation II/Lab	4	*HIST 1003 or 1013 World History I or II OR HIST 2013 or 2023 U.S. History I or II or PSCI 2003 American Government: National	3
Science and Engineering Elective	3		
Total Semester Hours	13	Total Semester Hours	15

Total hours required for major – 120

*Note: Must have six hours of history/government. Three hours must be World History I or II. Three hours must be U.S. History I, U.S. History II or American Government: National.

**Either CHEM 3231 or CHEM 3071 is required for chemistry core hours.

Chemistry Electives

CHEM 4013 Advanced Organic Chemistry	CHEM 4701-3 Undergraduate Research
CHEM 4033 Advanced Inorganic Chemistry	CHEM 4791-3 Advanced Topics in Chemistry I
CHEM 4043/4041 Advanced Analytical Chemistry/Lab	CHEM 4891-3 Advanced Topics in Chemistry II
CHEM 4073 Biochemistry II	CHEM 4991-3 Advanced Topics in Chemistry III