



Chemistry

Degree

Chemistry, Associate of Science Degree for Transfer
Chemistry, Associate of Science Degree

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Associate of Science Degree for Transfer

The Associate of Science in Chemistry is an appropriate degree for students interested in transferring to a four-year university as a major in the sciences. This major will provide students with a full two years of chemistry education as well as a solid foundation in math and physics. Additionally, the degree provides the student employment opportunities within local industries as a laboratory technician.

Career opportunities in Chemistry for transfers are varied and broad, ranging from all chemical industries, physics, all other areas of the physical sciences, engineering, and all areas of the biological and environmental sciences and allied health fields including medicine. Examples of local industries include: agriculture, geo- and petrochemical businesses, analytical services and laboratories.

The AS-T degree offered is designed specifically for the California State University system. As suggested below, transfer to other colleges or universities may require additional courses; students must be sure to speak with completion advisors if they have any intentions of transferring to one of these other schools.

Requirements for AA-T or AS-T degrees:

The completion of 60 semester units that are eligible for transfer to the California State University, including the following:

- The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University – Breadth Requirements.
- A minimum of 18 semester units in a major area of emphasis, as determined by the district.
- The obtainment of a minimum grade point average of 2.0.
- The completion of all courses required for the major with a 'C' or better. A 'P' (Pass) grade is not acceptable for courses in the major.

Total Units: 36

Required Courses

Course #	Name	Units
CHEM B1A	General Chemistry I	5.0
CHEM B1B	General Chemistry and Chemical Analysis	5.0
CHEM B30A	Organic Chemistry for Science Majors, I	5.0
CHEM B30B	Organic Chemistry for Science Majors, II	5.0
MATH B6A	Analytic Geometry/Calculus I	4.0
MATH B6B	Analytic Geometry/Calculus II	4.0
PHYS B4A	Mechanics and Wave Motion	4.0
PHYS B4B	Heat, Electricity, and Magnetism	4.0

The Associate of Science for Transfer ("AS-T") Degree in Chemistry provides a pathway to students who are pursuing a career in the chemical-related sciences. This may be a position at a local industry's analytical, petroleum, or medical laboratory; or transfer to a CSU in the field of chemistry, biochemistry, other related sciences (biology/medicine); or perhaps a career in secondary teaching; or satisfying the needs of various disciplines within engineering. It serves the diverse needs of students who wish to obtain a strong understanding of the chemical sciences. In particular, the AS-T Degree in Chemistry allows students to learn the fundamental principles and practices of chemistry in order to create a solid foundation for their future personal, academic, or vocational endeavors. The AS-T Degree in Chemistry truly provides a solid preparation that is appropriate for a variety of scientific disciplines.

Students transferring to a CSU campus that accepts the AS-T Degree in Chemistry will be required to complete no more than 60 units after transfer to earn a bachelor's degree. This degree may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system (though many of those find it fully satisfies their requirements). Students should consult with an advisor/counselor when planning to complete the degree for more information on university admission and transfer requirements. This degree eliminates the additional Bakersfield College graduation requirements.

Program learning outcomes

Upon successful completion, the student will:

- The student shall be able to apply logical quantitative and qualitative reasoning in solving problems.
- The student shall be able to apply the methodologies of chemistry when approaching a problem.
- The student shall demonstrate a knowledge of and recognize the processes that explain natural chemical phenomena.

Category

Units in Major	36.0
CSU GE Breadth	31.0
Possible double counting of GE's	7.0
Degree Total	60.0

Note: The CSU GE Breadth pattern is not an option for students to complete this degree within 60 units because double counting is capped at 7 units maximum. Students must use the IGETC for STEM which allows students to take one Arts or Humanities course and one Social or Behavioral Science course after transfer.

Recommended Sequence

Semester 1

Course #	Name	Units
CHEM B1a	General Chemistry I	5.0
MATH B6a	Analytic Geometry and Calculus I	4.0
ENGL B1a	Expository Composition	3.0
ANTH B1	Physical Anthropology	3.0

Semester 2

CHEM B1B	General Chemistry and Chemical Analysis	5.0
MATH B6B	Analytic Geometry and Calculus II	4.0
ENGL B2	Advanced Composition and Critical Thinking	4.0
	or	
PHIL B9	Critical Thinking and Advanced Composition	3.0
	Art or Humanities elective	3.0

Semester 3

Course #	Name	Units
CHEM B30A	Organic Chemistry for Science Majors, I	5.0
PHYS B4A	Mechanics and Wave Motion	4.0
COMM B1	Public Speaking	3.0
	Art or Humanities elective	3.0

Semester 4

Course #	Name	Units
CHEM B30B	Organic Chemistry for Science Majors, II	5.0
PHYS B4B	Heat, Electricity, Magnetism	4.0
	Art or Humanities elective	3.0
	Art or Humanities elective	3.0

Chemistry

Associate of Science Degree

The Associate of Science in Chemistry is appropriate for students interested in transferring to a four-year university as a major in the sciences. The major will provide students with a complete general education in math and core physical sciences as well as an introduction to some basic computer systems skills. Additionally, the degree provides the student employment opportunities within local industries as a laboratory technician. Career opportunities in Chemistry for transfers, are varied and broad, ranging from all chemical industries, physics, all other areas of the physical sciences, engineering, and all areas of the biological sciences and allied health fields. Examples of local industries include: agriculture, geo and petrochemical businesses, analytical services and laboratories.

To Achieve the Associate in Science

Upon completion of the following courses with at least a 'C' grade in each course, the student will be awarded a Chemistry Associate in Science degree.

Program Learning Outcomes

Upon successful completion, the student will:

- demonstrate a knowledge of and recognize the processes that explain natural phenomena.
- apply the methodologies of science when approaching a problem.
- apply logical quantitative and qualitative reasoning in solving problems.

Total Units: 38

Required Courses

Course #	Name	Units
CHEM B1A	General Chemistry II	5.0
CHEM B1B	General Chemistry & Chemical Analysis	5.0
CHEM B18	Elementary Organic Chemistry	5.0
MATH B6A	Analytic Geometry/Calculus I	4.0
MATH B6B	Analytic Geometry/Calculus II	4.0
MATH B6C	Calculus III	4.0
COMP B2	Introduction to Computer Information Systems	3.0

Select 8 Units from the following:

Course #	Title	Units
PHYS B4A	Mechanics and Wave Motion	4.0
	<i>and</i>	
PHYS B4B	Heat, Electricity, Magnetism	4.0
	<i>or</i>	
PHYS B2A	General Physics-Mechanics & Heat	4.0
	<i>and</i>	
PHYS B2B	General Physics-Sound, Light, Electricity, Magnetism, Modern Physics	4.0

Electives

Course #	Title	Units
PHYS B4C	Optics & Modern Physics	4.0
BIOL B3B	General Biology II	5.0
	<i>or</i>	
BIOL B16	General Microbiology	5.0

Note: BIOL B3B no longer has BIOL B3A as prerequisite.

The courses in physics (PHYS B4A, B4b, B4c), math (MATH B6A through MATH B6C) and chemistry (CHEM B1A and B1B) are required as preparation for the major in chemistry at most transfer colleges and universities. See www.assist.org for specific major preparation courses for the CSUs and UCs. Two courses in English composition (ENGL B1A and ENGL B2 or PHIL B9) as well as general education courses are also required. Please consult with a counselor for more specific information and study the catalog of the senior institution to which you intend to transfer.