

# CHEMISTRY, A.S.-T

## Overview

An A.S.-T in Chemistry for Transfer will fulfill the requirements for students to transfer to a California State University institution as a Chemistry major. The courses in the A.S.-T in Chemistry for Transfer provide students with an ability to solve quantitative problems and think critically in regards to major concepts in chemistry, including the structure and property of matter, the interconversion of matter and energy via chemical reactions, and the application of scientific inquiry to problem-solving.

AS.CHEM.OPTBAST or AS.CHEM.OPTCAST

## Program Map

### Design Your Future!

Begin by exploring MSJC program maps to find career or transfer opportunities. Program maps show the recommended course sequence that leads to graduation or transfer. The maps were developed by program experts to give you the skills and knowledge you need to succeed.

- **Starting in Spring?** Choose Fall Semester 1 courses.
- **Are you a part-time student?** Start Fall Semester 1 courses and follow the course sequence.

## CSU: General Education Option B

Fall Semester 1		Units
MATH-211	Analytic Geometry and Calculus I	4
ENGL-101	College Composition	3
CHEM-101	General Chemistry I	5
COMM-100	Public Speaking	3
<b>Units</b>		<b>15</b>
Spring Semester 1		Units
CHEM-102	General Chemistry II	5
ENGL-103	Critical Thinking and Writing	3
MATH-212	Analytic Geometry and Calculus II	4
PS-101	Introduction to American Government and Politics	3
<b>Units</b>		<b>15</b>
Summer 1		Units
HIST-111 or HIST-112	U.S. History to 1877 or U.S. History Since 1865	3
<b>Units</b>		<b>3</b>
Fall Semester 2		Units
Select one of the following:		3
HIST/ETHS-160	Black History in the American Context	
LIT-275/275	Latinx/Chicanx Literature	
LIT-280/280	Multiethnic Literature (formerly ENGL-280)	
BIOL-150	General Biology I	4
CHEM-112	Organic Chemistry I	5
PHY-201	Mechanics and Wave Motion	4
<b>Units</b>		<b>16</b>

### Spring Semester 2

CHEM-113	Organic Chemistry II	5
PHY-202	Electricity and Magnetism	4
ART-104	World Art	3
HIST-104	World History Since 1500	3
<b>Units</b>		<b>15</b>
<b>Total Units</b>		<b>64</b>

## UC: General Education Option C

Fall Semester 1		Units
MATH-211	Analytic Geometry and Calculus I	4
ENGL-101	College Composition	3
CHEM-101	General Chemistry I	5
COMM-100	Public Speaking	3
<b>Units</b>		<b>15</b>

### Spring Semester 1

CHEM-102	General Chemistry II	5
ENGL-103	Critical Thinking and Writing	3
MATH-212	Analytic Geometry and Calculus II	4
PS-101 or HIST-111 or HIST-112	Introduction to American Government and Politics or U.S. History to 1877 or U.S. History Since 1865	3
PHIL-101 or ANTH-145	Introduction to Philosophy I or Introduction to Linguistic Anthropology (formerly Introduction to Language and Linguistics)	3
<b>Units</b>		<b>18</b>

### Summer 1

Select one of the following:		4
ASL-100	American Sign Language I	
FREN-101	Elementary French I	
SPAN-101	Elementary Spanish I	
<b>Units</b>		<b>4</b>

### Fall Semester 2

BIOL-150	General Biology I	4
CHEM-112	Organic Chemistry I	5
PHY-201	Mechanics and Wave Motion	4
<b>Units</b>		<b>13</b>

### Spring Semester 2

CHEM-113	Organic Chemistry II	5
PHY-202	Electricity and Magnetism	4
ART-104	World Art	3
Select one of the following:		3
PS/ETHS-103	Ethnic Politics in America	
HIST/ETHS-160	Black History in the American Context	
LIT/ETHS-240	American Indian Literature (formerly ENGL-240)	
LIT/ETHS-275	Latinx/Chicanx Literature	
LIT/ETHS-280	Multiethnic Literature (formerly ENGL-280)	
<b>Units</b>		<b>15</b>
<b>Total Units</b>		<b>65</b>

## Requirements

Course	Title	Credits
<b>Required Core Courses</b>		
CHEM-101	General Chemistry I	5
CHEM-102	General Chemistry II	5
CHEM-112	Organic Chemistry I	5
CHEM-113	Organic Chemistry II	5
PHY-201	Mechanics and Wave Motion	4
PHY-202	Electricity and Magnetism	4
or PHY-202H	Honors Electricity and Magnetism	
MATH-211	Analytic Geometry and Calculus I	4
MATH-212	Analytic Geometry and Calculus II	4
or MATH-212H	Honors Analytic Geometry and Calculus II	
<b>Total Units</b>		<b>36</b>

Course	Title	Credits
<b>Units for Major</b>		<b>36</b>
<b>CSU General Education for STEM or IGETC for STEM</b>		<b>31-33</b>

Possible double counting: 7

**Transferable Electives (as need to reach 60 CSU transferable units)**

**Total Units for A.S.-T Degree: 60 units**

The STEM General Education for a **STEM Associates Degree for Transfer (ADT)** can **only** be applied to the **Biology, Chemistry and Environmental Science ADT Degrees**.

The overall requirements for an approved STEM Associates Degree for Transfer (ADT) can be met by completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University. Completion of California State University General Education Breadth for STEM (CSUGE) requirements or the Intersegmental General Education Transfer Curriculum for STEM requirements (IGETC).

**CSUGE Breadth for STEM (33 units):** Students are to complete all CSUGE requirements. However, the CSUGE for STEM requires:

- **AREA A-** 9 semester units/12 quarter units: one course from A1, one course from A2, and one course from A3)
- **AREA B-** 9 semester units/12 quarter units: one course from B1, one course from B2, and one course from B3 (if not met in B1/B2), and one course from B4
- **AREA C-** 6 semester units/9 quarter units: one course from C1 and one course from C2
- **AREA D-** 3 semester units/ 4 quarter units: one course
- **AREA E-** 3 semester units/ 4 quarter units: one course
- **AREA F-** 3 semester units/ 4 quarter unit: one course.

**IGETC for STEM (31 units):** Students are to complete all IGETC requirements. However, the IGETC for STEM requires:

- **AREA 1** -9 semester units/12 quarter units: one course from 1A, one course from 1B, and one course from 1C for students transferring to a CSU
- **AREA 2-** 3 semester units/4 quarter units: one course
- **AREA 3-** 6 semester units/9 quarter units: one course from 3A and one course from 3B

- **AREA 4-** 3 semester units/4 quarter units: one course
- **AREA 5-** 7 semester units/9 quarter units: one course from 5A, one course from 5B, and one course from 5C if not met in 5A/5B
- **AREA 6** (for UC schools) meeting Language other than English (LOTE) competency (by completing at minimum, elementary language course; AP exam; high school course work)
- **AREA 7-** 3 semester units/ 4 quarter units: one course.

### Additional Requirements

- Students are to confirm that the CSU or UC major/program or college they are applying to accepts partial CSUGE and IGETC certification. Although CSUGE and IGETC for STEM is an option, it is important that students prioritize completing major-preparation courses for the specific campuses and programs students are considering.
- Completion of a minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.
- Completion of a minimum grade point average of 2.0.

ADTs also require that students earn a C or better in all courses required for the major or area of emphasis. A "P" (Pass) grade is acceptable if pass is defined as a grade of C or better. ADTs are intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. A student completing an ADT is guaranteed admission to the CSU system, but not a particular campus or major. Students should meet with a Counselor to develop a comprehensive educational plan to further understand university and transfer requirements.

## Career Exploration

Discover information about careers that interest you!

1. Take a **Career Quiz** (<https://msjc.emsicc.com/assessment/>) to learn about yourself and receive career suggestions based on your interests.
2. Search available **in-demand jobs** (<https://msjc.emsicc.com/browse-careers/>) in your career areas of interest and find up-to-date salaries and education requirements.
3. Find the **MSJC Program** (<https://msjc.emsicc.com/browse-programs/>) that connects your interests to a career.

Note: There are no guaranteed positions for students completing these programs. Education and work experience required will vary by employer. The salary and benefits for specific occupations will be dependent on work experience, education, background, and employer.