

CHEMISTRY, ASSOCIATE IN SCIENCE FOR TRANSFER

Chemistry is the study of matter, including its composition, its properties, and the transformations it undergoes. Chemistry is considered “the central science” because it draws from physics and mathematics and its principles and applications constitute the foundation for other scientific disciplines including the biological sciences, the earth sciences, engineering, and medicine. A degree in chemistry affords excellent academic preparation for further study in any of these disciplines.

The Associate in Science in Chemistry for Transfer degree (AS-T in Chemistry) prepares students to pursue a Bachelor's degree in Chemistry at a California State University. Successful completion of the transfer degree guarantees the student acceptance to a California State University (but does not guarantee acceptance to a particular campus or major). Students must complete the Associate Degree for Transfer requirements to earn the AS-T degree.

Learning Outcomes

Upon successful completion of the program, students will be able to:

- Describe the particle nature of matter, explain the attractions and/or bonds between chemical units, and predict the physical and chemical properties they possess.
- Describe chemical compounds and their reactions using the fundamental language of chemistry, including the use of proper chemical names, molecular formulas, chemical equations, structural drawings, and reaction mechanisms.
- Predict the likelihood and extent of a chemical reaction by analyzing the kinetic and thermodynamic properties of the system.
- Solve chemistry-specific problems by identifying the essential parts of the problem, formulating a strategy for solving the problem, applying appropriate techniques to arrive at a solution, testing the correctness of the solution, and interpreting the results.
- Successfully execute chemistry experiments using standard laboratory equipment, modern instrumentation, and classical purification techniques.
- Communicate the concepts and results of chemistry experiments through effective writing and/or oral communication using the discipline standards for reporting and citation.
- Follow the proper procedures and regulations for safe handling and use of chemicals.

Associate in Science for Transfer Degree Major Requirements

Code	Title	Units
Required Core		
CHEM 1A	General Chemistry I	5
CHEM 1B	General Chemistry II	5
CHEM 12A	Organic Chemistry I	5
CHEM 12B	Organic Chemistry II	5
MATH 20A	Calculus with Analytic Geometry I	4
MATH 20B	Calculus with Analytic Geometry II	4
PHYS 3A	Science and Engineering Physics I	4
PHYS 3B	Science and Engineering Physics II	4

TOTAL MAJOR UNITS	36
Additional Requirements	27
Complete the Cal-GETC pattern.	
Total Units	63

Please refer to the program requirements section of the Catalog for information about associate degree requirements and certificate requirements including Information Competency, and General Education requirements.

The model sequence of coursework below is one pathway for students to complete the program. The information below is not an official educational plan. An MPC Counselor can assist you with creating a personalized education plan based on your academic, career, and personal goals. Visit MPC's Counseling website for more information about Counseling and up-to-date program requirements.

Suggested 2-Year Course Sequence

Year 1

Fall		Units
ENGL C1000	Academic Reading and Writing	3
MATH 20A	Calculus with Analytic Geometry I	4
CHEM 1A	General Chemistry I	5
Cal-GETC Area 3B (US-1 Course Recommended)		3
Units		15

Spring		Units
ENGL C1001	Critical Thinking and Writing	3
MATH 20B	Calculus with Analytic Geometry II	4
CHEM 1B	General Chemistry II	5
PHYS 3A	Science and Engineering Physics I	4
Units		16

Summer		Units
COMM C1000		3
Cal-GETC Area 4		3
Units		6

Year 2

Fall		Units
CHEM 12A	Organic Chemistry I	5
MATH 20C & PHYS 3B	Calculus of Several Variables and Science and Engineering Physics II	4
Cal-GETC Area 4 (US-2 & 3 Course Recommended)		3
Units		12

Spring		Units
CHEM 12B	Organic Chemistry II	5
Cal-GETC Area 3A		3
Cal-GETC Area 5B		3
Cal-GETC Area 6		3
Units		14
Total Units		63

MPC transfer programs are designed to enable students to complete lower-division requirements in preparation for transfer to a baccalaureate-granting institution.

The Student Transfer Achievement Reform Act (Senate Bill 1440, codified in California Education Code sections 66746-66749) guarantees

admission to California State University (CSU) system for any community college student who earns an Associate Degree for Transfer (ADT), although not to a particular campus or major. Upon transferring to a CSU campus that accepts the Associate in Arts for Transfer (AA-T) or Associate in Science for Transfer (AS-T), students will be required to complete no more than 60 upper-division units to earn a bachelor's degree in a same or similar major (unless designated as a "high-unit" major).

The following Associate Degree for Transfer requirements must be completed to earn the AA-T or AS-T degree:

- a. Minimum of 60 CSU-transferable semester units;
- b. Minimum grade point average (GPA) of 2.0 in all CSU-transferable coursework (while a minimum of 2.0 is required for admission, some majors may require a higher GPA);
- c. Completion of a minimum of 18 semester units as detailed in the Major Requirements;
- d. Completion of all courses in the major with a grade of C or better (or a "P" if the course is taken on a "Pass/No Pass" basis);
- e. Certified completion of the California General Education Transfer Curriculum (Cal-GETC) pattern.

All students should consult with a Counselor to discuss transfer pathways and specific university admission requirements. Visit MPC's Counseling website for more information about Counseling services provided by MPC and to connect with a Counselor.