

# CHEMISTRY, ASSOCIATE IN SCIENCE DEGREE FOR TRANSFER

**Banner Code:** 3\_AST\_CHEM

**Control Number:** 41639

**Financial Aid Eligible**

Chemistry is the study of matter, defined as anything that has mass and takes up space, and the changes that matter can undergo when it is subject to different environments and/or changes in its physical conditions. The five major fields of study contained within the subject of chemistry include analytical chemistry (including forensics), biochemistry, inorganic chemistry, organic chemistry, and physical chemistry.

The core concepts of chemistry are influential in other disciplines as the principles and analytical tools of chemistry are used to target biological processes inside living cells and organisms. Processes in the field of chemistry may be successfully used in determining and/or predicting different geological phenomena and events and progressions. Chemistry is integral in medicine such as in the development of medications and surgical materials as well as laboratory tests. Chemistry can help us to understand, monitor, protect and improve the environment around us by utilizing tools and techniques to measure air and water pollution.

Associate Degrees for Transfer (AA-T or AS-T) are open to all Coastline students. Students who do not plan on transferring to a California State University school should consult their Counselor regarding the benefits of an AA-T/AS-T degree based on their goals. Students earning an AA-T or AS-T and intending on transferring to a California State University school receive transfer admission benefits for specific majors at many California State University campuses. Visit the Transfer Information (<https://catalog.cccd.edu/catalog-archive/2024-2025/coastline/transfer-information/>) catalog page for more information.

## Program Level Student Learning Outcomes

Upon completion of this program, students will be able to:

1. Explain three fundamental processes present in chemistry including atomic and molecular structure, chemical equilibrium with applications to acids and bases, thermodynamics, chemical kinetics, and reaction mechanisms.
2. Given the appropriate laboratory setting, design and apply the process of science to postulate a hypothesis, collect and interpret data and formulate a conclusion.
3. Communicate chemical concepts effectively in written and/or oral forms and locate, select and evaluate scientific information present in primary research literature, mass media, online or other sources.

## Associate Degree for Transfer Requirements

1. Minimum of 60 CSU-transferable semester units. A minimum of 12 units must be in residence within Coast Colleges (Coastline College, Golden West College, and/or Orange Coast College).

2. Minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework.
3. Completion of a minimum of 18 semester units in an Associate Degree for Transfer major as detailed in the catalog. All courses in the major must be completed with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.
4. Certified Completion of the California Intersegmental General Education Transfer Curriculum (CalGETC - Coastline Option 2 General Education pattern).

| Course                                                      | Title                                             | Units  |
|-------------------------------------------------------------|---------------------------------------------------|--------|
| <b>Required Core</b>                                        |                                                   |        |
| Complete the following:                                     |                                                   |        |
| CHEM C180                                                   | General Chemistry A                               | 4      |
| CHEM C180L                                                  | General Chemistry A Lab                           | 1      |
| CHEM C185                                                   | General Chemistry B                               | 4      |
| CHEM C185L                                                  | General Chemistry B Lab                           | 1      |
| CHEM C220                                                   | Organic Chemistry A                               | 3      |
| CHEM C220L                                                  | Organic Chemistry A Lab                           | 2      |
| CHEM C225                                                   | Organic Chemistry B                               | 3      |
| CHEM C225L                                                  | Organic Chemistry B Lab                           | 2      |
| MATH C180                                                   | Calculus 1                                        | 5      |
| MATH C185                                                   | Calculus 2                                        | 5      |
| PHYS C185                                                   | Calculus Based Physics: Mechanics                 | 4      |
| PHYS C280                                                   | Calculus Based Physics: Electricity and Magnetism | 4      |
| Units Required for Major                                    |                                                   | 38     |
| CalGETC Pattern                                             |                                                   |        |
| Transfer Electives as needed to reach 60 transferable units |                                                   | Varies |
| <b>Total Units for Degree</b>                               |                                                   |        |