

DEGREES & CERTIFICATES

CHEMISTRY ASSOCIATE OF SCIENCE (AS)

About the Program

The AS - Chemistry degree prepares students for transfer to four-year institutions for continued study in the field of chemistry or for pre-professional studies for medical and dental programs. This program fulfills the lower-division requirements recommended by the American Chemical Society and is typical of requirements at four-year institutions. The program also satisfies lower division requirements in chemistry for engineering and biology transfer majors. General Education courses should be selected carefully to meet the requirements of the intended transfer institution. Some transfer institutions require more general education units than are required by the A.S. degree. Students should consult the catalog of the transfer institution for requirements and should consult a counselor for additional information.

Program Goals and Objectives

The Chemistry Program offers a comprehensive curriculum to prepare students for transfer and completion of an Associate's degree with a strong emphasis on the hands-on use of research-grade instrumentation, chemical safety, and sustainable practices. The Program encourages and supports student participation in independent study projects and lab internships. Courses offered by the program fulfill many academic requirements including general education requirements in the Natural Sciences.

Career Opportunities

The AS Chemistry degree provides entry-level opportunities as chemical or general laboratory technicians in industry and academia. Bachelor's degree opportunities include careers in technician-level research and development, energy, biotechnology, forensic science, pharmaceuticals, materials research and production, petrochemicals, food science, environmental science, businesses requiring technical management, service and sales, technical and science writing, teaching science education; and entry into professional studies in medicine, dentistry, pharmacy, and others.

Program Outcomes

- Upon completion of the AS in Chemistry, students are able to demonstrate proficiency in solving complex problems in and conceptual understanding of General Chemistry as measured by the ACS Full-Year General Chemistry Exam.
- Upon completion of the AS in Chemistry, students are able to demonstrate proficiency in solving complex problems in and conceptual understanding of Organic Chemistry as measured by the ACS Full-Year Organic Chemistry Exam.
- Upon successful completion of an AS in Chemistry, students are able to design and conduct laboratory experiments, and analyze and interpret their data.
- Upon successful completion of an AS in Chemistry, students are able to effectively communicate the methods, analysis, results, and conclusions of their experiments.
- Upon successful completion of an AS in Chemistry, students are able to quantitatively analyze nature at the atomic scale by applying fundamental chemical concepts, ranging from atomic theory to organic synthesis.
- Upon successful completion of an AS in Chemistry, students are able to skillfully perform experimental measurements, techniques, and protocols, properly use standard laboratory instruments, and adhere to safe laboratory practices.

Learning and Career Pathway Maps

[View LPC Program Map](#)

Required Core: (40 units)

CHEM 1A General College Chemistry I.....	5
CHEM 1B General College Chemistry II.....	5
CHEM 12A Organic Chemistry I.....	5
CHEM 12B Organic Chemistry II.....	5
MATH 1 Calculus I.....	5
MATH 2 Calculus II.....	5
MATH 3 Multivariable Calculus.....	5
PHYS 1A General Physics I.....	5

List A: Select One (5 units)

PHYS 1B General Physics II.....	5
PHYS 1C General Physics III.....	5

Total Units for the Major.....45

Program-Based GE: (3 units)

CMST 1 Fundamentals of Public Speaking.....	3
CMST 10 Interpersonal Communication.....	3

Additional General Education and Elective Units..... 12