

# CHEMISTRY ASSOCIATE IN SCIENCE AND CERTIFICATE OF ACHIEVEMENT



The chemistry major prepares students to transfer to four-year institutions for continued study in the field of chemistry. The program outlined below fulfills the lower division requirements recommended by the American Chemical Society and is typical of requirements at four-year transfer institutions. Students should consult the catalog of the transfer institution for specific requirements. Assistance in planning a course of study is available at the Counseling Center or from the Department of Chemistry faculty. The department recommends that students take one year of Russian or German (or high school equivalency) for credit under Humanities Area C, Section 2 of the associate degree general education requirements.

## Career Opportunities

<https://www.grossmont.edu/student-support/career-center/resources.php>

Analytical Chemist<sup>1</sup>  
 Biochemist<sup>1</sup>  
 Biotechnologist<sup>1</sup>  
 Chemistry Teacher<sup>1</sup>  
 Dentist<sup>1</sup>  
 Environmental Technician<sup>2</sup>  
 Forensic Specialist<sup>1</sup>  
 Industrial Health Engineer<sup>1</sup>  
 Laboratory Technician  
 Pharmacist<sup>1</sup>  
 Physician<sup>1</sup>  
 Research Chemist<sup>1</sup>  
 Safety Manager  
 Sanitarian<sup>2</sup>  
 Veterinarian<sup>1</sup>  
 Water-quality Analyst

<sup>1</sup> Bachelor's Degree or higher required.

<sup>2</sup> Bachelor Degree normally recommended.

The Program-level Student Learning Outcomes (PSLOs) below are outcomes that students will achieve after completing specific degree / certificate requirements in this program. Students will:

1. Analyze and interpret (evaluate) qualitative and quantitative data in order to identify trends, identify substances, and communicate results in a laboratory report.
2. Predict physical and chemical properties and changes of matter.
3. Employ a particulate and microscopic view of matter to explain macroscopic phenomena.

## Associate Degree Major Requirements

Code	Title	Units
CHEM-141	General Chemistry I	5
CHEM-142	General Chemistry II	5
Select one of the following:		5
CHEM-231	Organic Chemistry I	
CHEM-241 & CHEM-241L	Organic Chemistry I Lecture and Organic Chemistry I Laboratory	
Select one of the following:		5
CHEM-232	Organic Chemistry II	
CHEM-242 & CHEM-242L	Organic Chemistry II Lecture and Organic Chemistry II Laboratory	
Select sixteen (16) units from the following courses:		16
MATH-180	Analytic Geometry and Calculus I	
MATH-280	Analytic Geometry and Calculus II	
MATH-281	Multivariable Calculus	
MATH-285	Differential Equations	
PHYC-201	Mechanics and Waves	
PHYC-202	Electricity, Magnetism, and Heat	
PHYC-203	Light, Optics, and Modern Physics	
<b>Total Units</b>		<b>36</b>

Plus General Education (<https://catalog.gcccd.edu/grossmont/admission-information/general-education-transfer/>) and Elective Requirements

## Certificate of Achievement

Any student who wishes to complete only the requirements listed above qualifies for a Certificate of Achievement in Chemistry. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.