

ASSOCIATE OF SCIENCE WITH A CONCENTRATION IN CHEMISTRY



The Associate of Science in Chemistry is based on the Ohio Guaranteed Transfer Pathway in Biology. It is recommended for students planning to start at Tri-C and transfer to a four-year institution to major in Chemistry.

A four-year degree in Chemistry can prepare students for a variety of careers in a number of industries including entry-level positions in quality control, research labs, forensic science, environmental science, agriculture, food processing and secondary education (7-12 Teaching Licensure required). A Chemistry degree also serves as a strong foundation for students planning to go on to pursue graduate studies in chemistry or related/sciences, medicine, pharmacy, dentistry, and veterinary medicine.

The Chemistry program at Cuyahoga Community College (Tri-C®) will provide students with the foundations in chemistry, mathematics, physics, scientific inquiry, essential laboratory skills, critical thinking, quantitative analysis, problem solving, and communication skills they need to succeed at their four-year institution.

It is important to note that some bachelor-degree granting programs may be competitive and admission into the program is not guaranteed. Students should check with individual institutions for their program admission requirements. In addition, some bachelor-degree granting institutions require additional general education courses outside of the Ohio Transfer Module and students may be required to take these courses in their junior or senior year. Students will still be able to follow this pathway and complete their bachelor's degree in approximately 60 additional credit hours.

Program contact: Learn more

- ENG-0995 Applied College Literacies or sufficient score on English Placement test to enroll in ENG-1010 College Composition I.
- Qualified Math Placement to enroll in MATH-1610 Calculus I
- Sufficient score on Chemistry Placement Test to enroll in CHEM-1300 or CHEM-1010 with a grade of "C" or higher. All students pursuing this program need to take the Chemistry Placement Test to determine eligibility to enroll in CHEM-1300, which is a required course. CHEM-1010 is only required for students whose score on the Chemistry Placement test doesn't qualify for CHEM-1300.

1. Apply the principles of chemistry to advanced scientific studies and/or applications of chemistry in society.

2. Demonstrate critical thinking and logical reasoning through the application of chemical theories to solve quantitative and qualitative problems.
3. Analyze, evaluate, and explain experimental results with factual reporting of data, methodology, and conclusions, which can be applied to repeat the experiment with a similar outcome.
4. Develop preparative skills to safely and effectively use various experimental techniques to collect laboratory data required to support chemical concepts and principles in advanced scientific studies and/or real world applications.
5. Apply the principles of organic chemistry to the interpretation and analysis of the properties, reactions, and synthesis of carbon-based molecules including those of biological, medicinal, and industrial relevance.
6. Solve problems in scientific studies and/or real world applications by using interpretative skills and applying mathematical methods.
7. Utilize effective communication skills to be successful when transferring to a four year program in Chemistry and pursuing a career in the field of Chemistry.

MATH-1140, MATH-1141, MATH-1200, MATH-1270, and MATH-1280 can no longer count towards fulfilling the college-level mathematics requirement. These courses were re-classified as developmental mathematics by the state of Ohio in 2016. Tri-C established a 5-year transitioning window for students who had completed these courses prior to 2016 to apply them towards meeting graduation requirements, which expired in Summer 2021. It is highly recommended to see a counselor to determine the appropriate math required for your current major.

First Semester		Credit Hours
GEN-1070	First Year Success Seminar	1
DEGR-XXXX	Arts and Humanities Requirement (see below list - must be from two different disciplines) ¹	3
Select one of the following:		5
CHEM-1300 & CHEM-130L	General Chemistry I and General Chemistry Laboratory I	
CHEM-130H	Honors General Chemistry I	
Select one of the following:		3
ENG-1010	College Composition I	
ENG-101H	Honors College Composition I	
Select one of the following:		5
MATH-1610	Calculus I	
MATH-161H	Honors Calculus I	
Credit Hours		17
Second Semester		Credit Hours
DEGR-XXXX	Social and Behavioral Sciences Requirement (see below list - must be from two different disciplines)	3
Select one of the following:		5
CHEM-1310 & CHEM-131L	General Chemistry II and General Chemistry Laboratory II	
CHEM-131H	Honors General Chemistry II	

Select one of the following: 5

MATH-1620	Calculus II	
MATH-162H	Honors Calculus II	

Select one of the following: 3

ENG-1020	College Composition II	
ENG-102H	Honors College Composition II	
ENG-2151	Technical Writing	

Credit Hours 16

Third Semester

PHYS-2310 General Physics I 5

CHEM-2300 Organic Chemistry I 5

DEGR-XXXX Elective² 3

DEGR-XXXX Social and Behavioral Science Requirement (see below list - must be from two different disciplines) 3

Credit Hours 16

Fourth Semester

CHEM-2310 Organic Chemistry II 5

PHYS-2320 General Physics II 5

Select from the following: 3

COMM-1010 Fundamentals of Speech Communication

COMM-101H Honors Speech Communication

DEGR-XXXX Arts and Humanities Requirement (see below list - must be from two different disciplines) 3

Credit Hours 16

Total Credit Hours 65

1

PHIL-2020 Ethics highly recommended.

2

CHEM-1010 can be used to fulfill elective credits if student does not place in to CHEM-1300 via Chemistry Placement Test.

Students must select at least one designated cultural sensitivity course and at least one designated Civic Responsibility course to fulfill their Arts & Humanities or Social & Behavioral Science requirements from the below lists. Students must also select courses from two different disciplines to fulfill Arts and Humanities and Social and Behavioral Science requirements. View full list of courses that can be selected to fulfill Arts and Humanities, Social and Behavioral Sciences, and Natural Sciences requirements here.

Recommended Cultural Sensitivity Electives

Code	Title	Credit Hours
ARTS AND HUMANITIES		
DANC-1100	Dance Appreciation	3
ENG-2310	American Literature I	3
ENG-2320	American Literature II	3
ENG-2410	Introduction to Literature: Poetry	3
ENG-2430	Introduction to Literature: Drama ¹	3
ENG-2510	African-American Literature I ¹	3
ENG-2520	African-American Literature II ¹	3
ENG-2601	Literature for Children and Adolescents ¹	3

ENG-2700	World Literature ¹	3
ENG-2710	Shakespeare	3
ENG-2730	Exploration of World Mythology ¹	3
HIST-2031	Islam to the Modern Middle East	3
HUM-1010	Introduction to Humanities	3
HUM-1020	The Individual in Society	3
HUM-102H	Honors Individual in Society	3
HUM-1030	The Individual in Cosmos	3
HUM-2020	Community Engagement Through the Humanities	3
MUS-1010	Survey of European Classical Music	3
MUS-1020	Survey of Jazz	3
MUS-1030	Survey of Rock and Roll	3
PHIL-2010	Comparative World Religions	3
PHIL-2020	Ethics	3
REL-1010	Introduction to Religious Studies	3
THEA-1010	Theatre Appreciation	3
THEA-2210	History of Theatre and Drama I	3
THEA-2220	History of Theatre & Drama II	3
SOCIAL AND BEHAVIORAL SCIENCES		
ANTH-1010	Cultural Anthropology	3
ANTH-2010	Peoples and Cultures of the World	3
HIST-1010	History of Civilization I	3
HIST-101H	Honors History of Civilization I	3
HIST-1020	History of Civilization II	3
HIST-102H	Honors History of Civilization II	3
HIST-1510	United States History to 1877	3
HIST-1700	History of Africa	3
HIST-2150	African American History to 1877	3
HIST-2660	Women in American History	3
POL-2070	International Relations	3
PSY-1010	General Psychology	3
PSY-2020	Life Span Development	4
PSY-2080	Abnormal Psychology	3
SOC-2100	Aging and Society	3
SOC-2410	Sociology of Gender	3
SOC-2550	Race and Ethnic Relations	3

Recommended Civic Responsibility Electives

Code	Title	Credit Hours
ARTS AND HUMANITIES		
HUM-1020	The Individual in Society	3
HUM-102H	Honors Individual in Society	3
HUM-1030	The Individual in Cosmos	3
PHIL-1000	Critical Thinking	3
PHIL-2020	Ethics	3
PHIL-202H	Honors Ethics	3
PHIL-2050	Bioethics	3
PHIL-2060	Business Ethics	3
SOCIAL AND BEHAVIORAL SCIENCES		
GEOG-2030	Environmental Geography	3
HIST-1510	United States History to 1877	3

HIST-1520	United States History Since 1877	3
HIST-152H	Honors United States History since 1877	3
POL-1010	American National Government	3
POL-101H	Honors American National Government	3
POL-1020	State & Local Government	3
POL-2030	Comparative Politics	3
POL-2070	International Relations	3
UST-1010	Introduction to Urban Studies	3
WGS-2120	Women and Politics	3