

# CHEMISTRY - ASSOCIATE OF SCIENCE DEGREE (AS)

Explore More About This Program: <https://cwi.edu/program/chemistry>

## Degree Quick Facts

- **Instructional School:** Math and Science
- **Department:** Physical Sciences
- **Program Code:** CHEM.AS
- **Program Type:** Academic Transfer
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

## Degree Requirements

Course	Course Title	Min Credits
<b>General Education Requirements</b>		
<i>Complete the following course to fulfill the Connecting with Ideas requirement:</i>		
CWI 101	Connecting With Ideas	3
<i>Complete the following courses to fulfill the GEM 1 requirement:</i>		
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
<i>Complete the following course to fulfill the GEM 2 requirement:</i>		
GEM 2 - Oral Communication course		2
<i>Complete the following course to fulfill the GEM 3 requirement:</i>		
MATH 147 or MATH 170	College Algebra and Trigonometry Calculus I	5
<i>Complete the following courses to fulfill the GEM 4 requirement:</i>		
PHYS 211	Physics for Scientists and Engineers I	4
PHYS 211L	Physics for Scientists and Engineers I Lab	1
Select one of the following options:		4
Option 1:		
CHEM 101	Introduction to Chemistry <sup>1</sup>	
CHEM 101L	Introduction to Chemistry Lab <sup>1</sup>	
Option 2:		
CHEM 111	General Chemistry I <sup>1</sup>	
CHEM 111L	General Chemistry I Lab <sup>1</sup>	
<i>Complete the following courses to fulfill the GEM 5 requirement:</i>		
GEM 5 - Humanistic & Artistic Ways of Knowing course		3
GEM 5 - Humanistic & Artistic Ways of Knowing course <sup>2</sup>		3
<i>Complete the following courses to fulfill the GEM 6 requirement:</i>		
SCIE 102	Ethics in Science <sup>3</sup>	3
GEM 6 - Social & Behavioral Ways of Knowing course <sup>2</sup>		3
<i>Complete the following course to fulfill the Global Perspectives requirement:</i>		
Global Perspectives course		3
<b>Major Requirements</b>		
CHEM 111	General Chemistry I <sup>4</sup>	3
CHEM 111L	General Chemistry I Lab <sup>4</sup>	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Lab	2
CHEM 298	Organic Chemistry I	3
CHEM 298L	Organic Chemistry I Lab	2
MATH 170	Calculus I <sup>5</sup>	5
Select 1-10 credits from the Major Electives course list below to bring the total credits earned to 60		1-10
<b>Minimum Credit Hours Required</b>		<b>60</b>

- <sup>1</sup> Students who have prior experience with chemistry are strongly encouraged to take the Chemistry Placement exam at the CWI Assessment Center. Passing the Chemistry Placement exam will allow students to register directly into CHEM 111 General Chemistry I and will enable them to complete additional credits from the Major Electives list.
- <sup>2</sup> Course must come from a different discipline.
- <sup>3</sup> This course fulfills the Ethical Reasoning requirement for an associate degree from CWI.
- <sup>4</sup> If students completed CHEM 111 General Chemistry I to fulfill their GEM 4 requirement, they must take an additional four (4) credits of coursework from the Major Electives course list below.
- <sup>5</sup> If students completed MATH 170 Calculus I to fulfill their GEM 3 requirement, they must take an additional five (5) credits of coursework from the Major Electives course list below.

## Chemistry: Major Electives

Course	Course Title	Min Credits
BIOL 111	Biology I	3
BIOL 111L	Biology I Lab	1
CHEM 253	Quantitative Analysis	3
CHEM 253L	Quantitative Analysis Lab	2
CHEM 299	Organic Chemistry II	3
CHEM 299L	Organic Chemistry II Lab	2
MATH 175	Calculus II	4
PHYS 212	Physics for Scientists and Engineers II	4
PHYS 212L	Physics for Scientists and Engineers II Lab	1

## Plan of Study Guide

*The course sequence listed below is strongly recommended in order to complete your program requirements. Please register for each semester as shown using the Student Planning tool in myCWI. Plans may be modified to fit the needs of part-time students by adding additional semesters. Consult your Student Success Advisor for any questions regarding this course sequence plan.*

### First Year

Fall	Credit Hours	
Select one of the following options (GEM 4):	4	
Option 1:		
CHEM 101	Introduction to Chemistry <sup>1</sup>	
CHEM 101L	Introduction to Chemistry Lab <sup>1</sup>	
Option 2:		
CHEM 111	General Chemistry I (GEM 4) <sup>1</sup>	
CHEM 111L	General Chemistry I Lab (GEM 4) <sup>1</sup>	
CWI 101	Connecting With Ideas	3
ENGL 101	Writing and Rhetoric I (GEM 1) <sup>2</sup>	3
MATH 147 or MATH 170	College Algebra and Trigonometry (GEM 3) or Calculus I	5
<b>Total Semester Credit Hours</b>		<b>15</b>
<b>Spring</b>		
CHEM 111	General Chemistry I <sup>3</sup>	3
CHEM 111L	General Chemistry I Lab <sup>3</sup>	1
ENGL 102	Writing and Rhetoric II (GEM 1)	3
MATH 170	Calculus I <sup>4</sup>	5
SCIE 102	Ethics in Science (GEM 6) <sup>5</sup>	3
GEM 2 - Oral Communication course		2
<b>Total Semester Credit Hours</b>		<b>17</b>

### Second Year

Fall	Credit Hours	
CHEM 112	General Chemistry II	3

CHEM 112L	General Chemistry II Lab	2
PHYS 211	Physics for Scientists and Engineers I (GEM 4)	4
PHYS 211L	Physics for Scientists and Engineers I Lab (GEM 4)	1
GEM 5 - Humanistic & Artistic Ways of Knowing course		3
Global Perspectives course		3
<b>Total Semester Credit Hours</b>		<b>16</b>
<b>Spring</b>		
CHEM 298	Organic Chemistry I	3
CHEM 298L	Organic Chemistry I Lab	2
GEM 5 - Humanistic & Artistic Ways of Knowing course <sup>6</sup>		3
GEM 6 - Social & Behavioral Ways of Knowing course <sup>6</sup>		3
Major Electives	Select the needed amount of credits from the list below to bring the total earned to 60	1-10
<b>Total Semester Credit Hours</b>		<b>12</b>
<b>Minimum Credit Hours Required</b>		<b>60</b>

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<sup>2</sup> It is possible to get prior learning assessment (PLA) credit for ENGL 101 if the student successfully passes ENGL 102. Visit the [CWI Prior Learning Assessment](#) webpage for more information.

<sup>3</sup> If students completed CHEM 111 General Chemistry I to fulfill their GEM 4 requirement, they should complete four (4) credits of coursework from the Major Electives course list instead or complete CHEM 112 General Chemistry II and CHEM 112L General Chemistry II Lab during this semester.

<sup>4</sup> If students completed MATH 170 Calculus I to fulfill their GEM 3 requirement, they should complete five (5) credits of coursework from the Major Electives course list instead.

<sup>5</sup> This course fulfills the Ethical Reasoning requirement for an associate degree from CWI.

<sup>6</sup> Course must come from a different discipline.

## Chemistry: Major Electives

Course	Course Title	Min Credits
BIOL 111	Biology I	3
BIOL 111L	Biology I Lab	1
CHEM 253	Quantitative Analysis	3
CHEM 253L	Quantitative Analysis Lab	2
CHEM 299	Organic Chemistry II	3
CHEM 299L	Organic Chemistry II Lab	2
MATH 175	Calculus II	4
PHYS 212	Physics for Scientists and Engineers II	4
PHYS 212L	Physics for Scientists and Engineers II Lab	1

## Additional Advising Notes:

- Students who plan to transfer should select elective courses based on the needs of their transfer institutions. See 2+2 agreements with the appropriate institution for more information.
- Please be sure to check the courses required for your final degree at the four-year institution you plan to attend after finishing at CWI. It is **absolutely imperative** that you know which classes are required to obtain a bachelor's degree at that institution.

## Program Learning Outcomes

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

- Attain the knowledge and skills in basic chemistry that will allow for success in further academic pursuits within the chemistry discipline.
- Obtain the general education needed to appreciate the role of chemistry in social, environmental, and political issues.
- Understand the scientific method and apply it effectively within a controlled environment.
- Evaluate their experimental results and determine appropriate conclusions.
- Understand and represent quantitative scientific data in various graphical forms.
- Develop and increase skills of both verbal and written communication within the sciences.

- Develop and increase skills in critical thinking and analytical reasoning through quantitative analyses.
- Become skilled in the use of analytical equipment currently used in the chemical industry.