

COMPUTER SCIENCE - ASSOCIATE OF SCIENCE DEGREE (AS)

Explore More About This Program: <https://cwi.edu/program/computer-science>

Degree Quick Facts

- **Instructional School:** Communication and Information Technologies
- **Department:** Computer Science and Information Technology
- **Program Code:** CPSC.AS
- **Program Type:** Academic Transfer
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

Degree Requirements

Course	Course Title	Min Credits
General Education Requirements ¹		
<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 one of the following courses to fulfill the GEM 2 requirement:</i>		
COMM 101 or COMM 112	Fundamentals of Oral Communication Argumentation and Debate	3
<i>Complete the following course to fulfill the GEM 3 requirement:</i>		
MATH 170	Calculus I	5
<i>Complete the following courses to fulfill the GEM 4 requirement:</i>		
Select one of the following options:		4-5
Option 1:		
CHEM 111	General Chemistry I	
CHEM 111L	General Chemistry I Lab	
Option 2:		
PHYS 211	Physics for Scientists and Engineers I	
PHYS 211L	Physics for Scientists and Engineers I Lab	
<u>GEM 4 - Scientific Ways of Knowing course ²</u>		3-4
<i>Complete the following courses to fulfill the GEM 5 requirement:</i>		
<u>GEM 5 - Humanistic & Artistic Ways of Knowing course</u>		3
<u>GEM 5 - Humanistic & Artistic Ways of Knowing course ²</u>		3
<i>Complete the following courses to fulfill the GEM 6 requirement:</i>		
<u>GEM 6 - Social & Behavioral Ways of Knowing course</u>		3
<u>GEM 6 - Social & Behavioral Ways of Knowing course ²</u>		3
<i>Complete the following course to fulfill the Global Perspectives requirement:</i>		
<u>Global Perspectives course</u>		3
Major Requirements		
Select one of the following options:		5
Option 1:		
CHEM 112	General Chemistry II	
CHEM 112L	General Chemistry II Lab	
Option 2:		
PHYS 212	Physics for Scientists and Engineers II	
PHYS 212L	Physics for Scientists and Engineers II Lab	
CPSC 121	Computer Science I ³	4
CPSC 221	Computer Science II	3
ENGR 290	Engineering Capstone	2
Select 5-7 credits of the following to bring the total credits earned to 60: ⁴		5-7

ENGL 202	Technical Communication
MATH 175	Calculus II
MATH 176	Discrete Mathematics

Minimum Credit Hours Required **60**

- ¹ Student must select an "E" designated course to fulfill one of their general education requirements.
- ² Course must come from a different discipline.
- ³ Includes an integrated lab component.
- ⁴ Computer Science programs require very specific prerequisites to prepare students for the classes they will take in their junior year. In order to have a student complete their GEM certification and those prerequisites, it may be necessary that more than 60 credit hours be completed during their first two years.

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
CWI 101	Connecting With Ideas	3
ENGL 101	Writing and Rhetoric I (GEM 1)	3
MATH 170	Calculus I (GEM 3)	5
<u>GEM 4 - Scientific Ways of Knowing course</u> ¹		3-4
Total Semester Credit Hours		15

Spring

COMM 101 or COMM 112	Fundamentals of Oral Communication (GEM 2) or Argumentation and Debate	3
ENGL 102	Writing and Rhetoric II (GEM 1)	3
<u>GEM 5 - Humanistic & Artistic Ways of Knowing course</u>		3
<u>GEM 6 - Social & Behavioral Ways of Knowing course</u>		3
Major Electives	Select 3-4 credits from the list below ²	3-4
Total Semester Credit Hours		15

Second Year

Fall		
Select one of the following options (GEM 4):		4-5
Option 1:		
CHEM 111	General Chemistry I	
CHEM 111L	General Chemistry I Lab	
Option 2:		
PHYS 211	Physics for Scientists and Engineers I	
PHYS 211L	Physics for Scientists and Engineers I Lab	
CPSC 121	Computer Science I ³	4
<u>Global Perspectives course</u>		3
Major Electives	Select 3-4 credits from the list below to bring the total credits earned to 60 ²	3-4
Total Semester Credit Hours		14

Spring

Select one of the following options:		5
Option 1:		
CHEM 112	General Chemistry II	
CHEM 112L	General Chemistry II Lab	
Option 2:		
PHYS 212	Physics for Scientists and Engineers II	

PHYS 212L	Physics for Scientists and Engineers II Lab	
CPSC 221	Computer Science II	3
ENGR 290	Engineering Capstone	2
GEM 5 - Humanistic & Artistic Ways of Knowing course ⁴		3
GEM 6 - Social & Behavioral Ways of Knowing course ⁴		3
Total Semester Credit Hours		16
Minimum Credit Hours Required		60

¹ Course must come from a different discipline than other GEM 4 course choice (CHEM or PHYS).

² Computer Science programs require very specific prerequisites to prepare students for the classes they will take in their junior year. In order to have a student complete their GEM certification and those prerequisites, it may be necessary that more than 60 credit hours be completed during their first two years.

³ Includes an integrated lab component.

⁴ Course must come from a different discipline.

Computer Science: Major Electives

Course	Course Title	Min Credits
Select 5-7 credits from the list below to bring the total credits earned to 60:		
ENGL 202	Technical Communication	3
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	4

Additional Advising Notes:

- Students who plan to transfer should select elective courses based on the needs of their transfer institution. 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.
- It is possible to get prior learning assessment (PLA) credit for ENGL 101 if the student successfully passes ENGL 102 and pays for the credits for ENGL 101. Visit the [CWI Prior Learning Assessment](#) webpage for more information.

Program Learning Outcomes

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

- Understand the fundamentals of computer science.
- Apply fundamental principles and methods of computer science to a wide range of applications.
- Apply mathematical and scientific reasoning to a variety of computational problems.
- Design, correctly implement, and document solutions to significant computational problems.
- Develop proficiency in the practice of computing.
- Formulate solutions to computing problems.
- Analyze and compare alternative solutions to computing problems.
- Design and implement software systems that meet specified design and performance requirements.
- Apply algorithmic and mathematical concepts to the design and analysis of software.
- Apply sound principles to the synthesis and analysis of computer systems.
- Prepare for continued professional development.
- Work effectively in teams to design and implement solutions to computational problems.
- Communicate effectively, both orally and in writing.
- Think critically and creatively, both independently and with others.
- Recognize the social and ethical responsibilities of a professional working in computer science.
- Adapt to new developments in the field of computer science.