COMPUTER SCIENCE - ASSOCIATE OF SCIENCE DEGREE (AS)

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

Degree Quick Facts

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

NOTE: Courses required for this program *may* have an additional fee; more information can be found on the Special Course Fees web page.

Degree Requirements

Course	Course Title	Min Credits
General Education Requirements [1]		
CWI 101	Connecting With Ideas	3
Global Perspectives course		3
ENGL 101	Writing and Rhetoric I (GEM 1)	3
ENGL 102	Writing and Rhetoric II (GEM 1)	3
COMM 101	Fundamentals of Oral Communication (GEM 2)	3
or COMM 112	Argumentation and Debate	
MATH 147	Precalculus (GEM 3) [2,3]	5
or MATH 170	Calculus I	
PHYS 211	Physics for Scientists and Engineers I (GEM 4)	4
PHYS 211L	Physics for Scientists and Engineers I Lab (GEM 4)	1
GEM 4 - Scientific Ways of Knowing course [4]		3
GEM 5 - Humanistic & Artistic Ways of Knowing course		3
GEM 5 - Humanistic & Artistic Ways of Knowing course [4]		3
GEM 6 - Social & Behavioral Ways of Knowing course		3
GEM 6 - Social & Behavioral Ways of Knowing course [4]		3
Major Requirements		
CPSC 121	Computer Science I [5]	4
CPSC 153	Navigating Computer Systems	1
CPSC 155	Introduction to Version Control	1
CPSC 208	Introduction to Full Stack Web Development	3
CPSC 221	Computer Science II [5]	3
MATH 170	Calculus I [3]	5
Select 3-8 credits from the Major Electives course list below to bring the total credits earned to at least 60 [6]		3-8
Minimum Credit Hours Required		**60**

[1] Students must select an "E" designated course to fulfill one of their general education requirements.

[2] In order to graduate, Computer Science majors are required to complete MATH 170 Calculus I. If students do not have high enough ACT, SAT, or CWI Math Diagnostic exam scores to place directly into MATH 170, they will need to complete MATH 147 Precalculus in their first semester to fulfill their GEM 3 requirement and the prerequisite requirement for MATH 170.

[3] MATH 170 Calculus I cannot count as both GEM 3 and a Major Requirement. If students completed MATH 170 to fulfill their GEM 3 requirement, they need to take five (5) additional elective credits from the Major Electives course list to get to a total of 60 credits for the degree.

[4] Course must come from a different discipline.

[5] Includes an integrated lab component.

[6] Review transfer institution requirements (if known) to help select the most beneficial elective course(s) from the Major Electives list below.

Computer Science: Major Electives

Course	Course Title	Min Credits
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Lab	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Lab	1
CPSC 111	Introduction to Python Programming	3
ENGL 202	Technical Communication	3
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	4
MATH 230	Introduction to Linear Algebra	3
MATH 275	Calculus III	4
MATH 285	Differential Equations with Matrix Theory	4
PHYS 212	Physics for Scientists and Engineers II	4
PHYS 212L	Physics for Scientists and Engineers II Lab	1

Degree Plan

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 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 147 or MATH 170	Precalculus (GEM 3) [1,2] or Calculus I	5
GEM 4 - Scientific Ways of Knowing course [3]		3
Total Semester Credit Hours		**14**

Spring		Credit Hours
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
MATH 170	Calculus I [2]	5
GEM 5 - Humanistic & Artistic Ways of Knowing course		3
GEM 6 - Social & Behavioral Ways of Knowing course		3
Total Semester Credit Hours		**17**

Second Year

Fall		Credit Hours
CPSC 121	Computer Science I [4]	4
CPSC 153	Navigating Computer Systems	1
CPSC 155	Introduction to Version Control	1
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]		3
Total Semester Credit Hours		**14**

Spring		Credit Hours
CPSC 208	Introduction to Full Stack Web Development	3
CPSC 221	Computer Science II [4]	3
GEM 6 - Social & Behavioral Ways of Knowing course [3]		3
Global Perspectives course		3

Major Electives	Select 3-4 elective credits from the list below to bring the total credits earned to at least 60 [5]	3-4
	Total Semester Credit Hours	**15**
	Minimum Credit Hours Required	**60**

Students must select an "E" designated (Ethical Reasoning) course to fulfill one of their General Education requirements.

[1]   In order to graduate, Computer Science majors are required to complete MATH 170 Calculus I. If students do not have high enough ACT, SAT, or CWI Math Diagnostic exam scores to place directly into MATH 170, they will need to complete MATH 147 Precalculus in their first semester to fulfill their GEM 3 requirement and the prerequisite requirement for MATH 170.

[2]   If students completed MATH 170 Calculus I to fulfill their GEM 3 requirement, they should complete 3-4 credits of coursework from the Major Electives course list during their second semester instead.

[3]   Course must come from a different discipline.

[4]   Includes an integrated lab component.

[5]   Students should work with their intended transfer institution to determine the most beneficial elective course(s) from the Major Electives list below.

Computer Science: Major Electives

Course	Course Title	Min Credits
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Lab	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Lab	1
CPSC 111	Introduction to Python Programming	3
ENGL 202	Technical Communication	3
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	4
MATH 230	Introduction to Linear Algebra	3
MATH 275	Calculus III	4
MATH 285	Differential Equations with Matrix Theory	4
PHYS 212	Physics for Scientists and Engineers II	4
PHYS 212L	Physics for Scientists and Engineers II Lab	1

Program Learning Outcomes

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

- Demonstrate ability to utilize computer language constructs and computer science principles to develop solutions for a wide variety of applications.
- Develop an understanding of fundamental computer language constructs and established computer science design principles along with their maintenance and performance trade-offs when comparing solutions.
- Apply knowledge of software development requirement artifacts and processes to produce solutions that meet the specified design goal in a timely manner.
- Communicate effectively the goals, functions, and use of an application through proper user interface design, presentation of solutions, and code documentation.
- Work together effectively in a team using frequent, professional communication to produce a solution while maintaining periodic, progress updates to the stakeholders.
- Develop life-long learning skills in preparation for continued professional development and future developments in computer science.