

# COMPUTER SCIENCE, BACHELOR OF SCIENCE

## Overview

### Mission Statement of Computer Science (CS) Program

The mission of the Computer Science program is to support the development of comprehensive computer science education and research programs that will prepare students to acquire relevant marketable skills to solve complex problems in computing, demonstrate professional responsibilities and ethics and work collaboratively in a diverse environment and gain appropriate knowledge for working as computing professionals and/or for graduate studies. The program fosters to increase campus, community and experiential awareness in computing and promote faculty and student research in the fields of computing.

## Requirements

### General Requirements

Code	Title	Credits
	Core Curriculum	42
	Required Support Courses	10
	Major (Required) Courses	36
	Teacher Certification Required Courses	31
	Electives	1
<b>Total Credits</b>		<b>120</b>

- 30 CSCI upper-division hours required for this degree must be completed at A&M-SA to satisfy residency requirement.
- Must complete at least 40 hours of major courses and major electives at A&M-SA.
- Must receive a grade of "C" or better in all MATH, CSCI, and CISA courses and their associated prerequisites for satisfactory passing grade.
- A minimum average GPA of 2.25 must be maintained in all CISA or CSCI core and elective courses to remain in program. Applies to transfer courses also.
- Academic credits transferred as substitution courses must be completed within previous five years of admission to A&M-SA.
- CIP Code: 11.0701

### Department probation and withdrawal:

For all departmental students in the Department of Computing and Cyber Security (CCS), to avoid department probation or withdrawal, the minimum GPA requirement in all CCS department courses (hereby called DCGPA) is 2.25. Courses with prefix CSCI, CISA, CETE, CSEC are departmental courses.

A student majoring in any of these disciplines is a departmental student: BS Computer Science (BSCS), BS Cyber Engineering Technology (BS-CETE), BS Cyber Security (BS-CSEC), BBA-Computer Information Systems (general and IA track) (BBA-CIS), and Bachelor of Applied Arts and Sciences (general and IA track) (BAAS-IT/BAAS-IT-IA).

### Department probation

After a departmental student has completed four departmental courses, if the DCGPA drops below 2.25, the student will be placed on a department probation that term. In order to get off of department probation, a student must bring their DCGPA to 2.25 or higher by the following term. If the student does not bring their DCGPA to a 2.25 in one semester or term, the student will then be placed on a department withdrawal. A student can be on probation a maximum of two times. After that, the student will be placed on department withdrawal instead of department probation.

### Department withdrawal

A student who has been placed on department probation and earns the DCGPA below 2.25 will be placed on department withdrawal. Because it is the first withdrawal, the student will be required to complete a departmental appeal, submit a personal letter, and an academic success plan of action to bring the DCGPA to 2.25 or higher by the following term. The plan has to be approved by the department chair or a designee. If a student is unable to bring the DCGPA to 2.25 or higher in one semester, the student will be required to select another major out of the department. A student can be on withdrawal only once. A second withdrawal will require a student to select a major out of the department.

Mandatory requirements for students on department probation and withdrawal

1. Meet with an Academic Success Coach for coaching on appropriate tutoring, study habits, etc.
2. Meet with their academic advisors and faculty mentors to seek guidance on computing course and careers.
3. Not register for more than 9 hours of departmental courses in the semester following probation/withdrawal.

Code	Title	Credits
<b>Core Curriculum</b> <sup>1</sup>		
ENGL 1301	Composition I	3
ENGL 1302	Composition II	3
	or ENGL 2311 Technical Writing	
MATH 2313	Calculus I	3
Select one of the following:		3
BIOL 1306	Gen Biology I-Attr Living Sys	
CHEM 1311	General Chemistry I	
GEOL 1301	Earth Sciences I	
PHYS 1301	General Physics I	
PHYS 2325	University Physics I	
Select one of the following:		3
BIOL 1307	Gen Biology II-Biol Organisms	
CHEM 1312	General Chemistry II	
GEOL 1302	Earth Sciences II	
PHYS 1302	General Physics II	
PHYS 2326	University Physics II	
Language/Philosophy /Culture		3
Creative Arts		3
American History		3
American History		3
Government/Political Science		3
Government/Political Science		3
Social and Behavioral Science		3
MATH 2314	Calculus II	3

MATH 1342	Introductory Statistics	3
MATH 1042	Intro Statistics Recitation	0
Subtotal:		42
<b>Departmental Requirements</b>		
Select one of the following:		1
BIOL 1106	General Biology I Lab	
CHEM 1111	General Chemistry Lab I	
GEOL 1101	Earth Sciences Lab I	
PHYS 1101	General Physics Lab I	
PHYS 2125	University Physics Lab I	
Select one of the following:		1
BIOL 1107	General Biology II - Lab	
CHEM 1112	General Chemistry Lab II	
GEOL 1102	Earth Sciences Lab II	
PHYS 1102	General Physics Lab II	
PHYS 2126	University Physics Lab II	
MATH 2113	Calculus I Lab	1
MATH 2114	Calculus II Lab	1
MATH 3340	Linear Algebra with Appl	3
Subtotal:		7
<b>University Requirements</b>		
UNIV 1301	First Year Seminar	3
CSCI 4101	Ethical Issues in Computing	1
Subtotal:		4
<b>Required Support Courses</b>		
CSCI 1436	Programming Fundamentals I	4
CSCI 1437	Programming Fundamentals II	4
CSCI 2322	Discrete Structures for Comput	3
CSCI 2325	Computer Organization	3
CSCI 2436	Programming Fundamentals III	4
Subtotal:		18
<b>Major Courses</b>		
CSCI 3304	Database Systems	3
CSCI 3321	Cyber Security	3
CSCI 3343	Algorithms	3
CSCI 3344	Computer Architecture	3
CSCI 3362	Operating Systems	3
CSCI 3366	Programming Languages	3
CSCI 4406	Computer Networks	4
CSCI 4316	Software Engineering I	3
CSCI 4317	Software Engineering II	3
CSCI 4321	Computer Security	3
CSCI 4391	Senior Project	3
Subtotal:		34
<b>Major Electives<sup>2</sup></b>		
Upper-Division CSCI Elective or Approved CISA/CETE Elective		3
Upper-Division CSCI Elective or Approved CISA/CETE Elective		3
Upper-Division CSCI Elective or Approved CISA/CETE Elective		3
Upper-Division CSCI Elective or Approved CISA/CETE Elective		3
Upper-Division CSCI Elective or Approved CISA/CETE Elective		3

Subtotal:	15
<b>Total Credits</b>	<b>120</b>

- 1 Other courses may satisfy core curriculum requirements. Courses listed under the core curriculum above are also specific degree requirements, and are recommended in the core to expedite degree completion.
- 2 Approved upper-division CISA courses that can be used as electives for majors and minors are: CISA 3309 Scripting Languages, CISA 4323 Computer Forensics, CISA 4324 Security Risk Analysis, CISA 4332 Business Intel/ Data Mining.

## Plan of Study

*This suggested plan of study is intended to be used as a guide in conjunction with official degree requirements outlined in the catalog. While this plan demonstrates a course of study that covers eight semesters, each student's academic path is unique and your timeline may look different. Students should regularly consult with academic advisors as they plan their course schedules as course offerings may vary.*

### First Year

First Semester	Credits	
ENGL 1301	Composition I <sup>1</sup>	3
MATH 2313	Calculus I <sup>1</sup>	3
MATH 2113	Calculus I Lab <sup>1</sup>	1
CSCI 1436	Programming Fundamentals I	4
HIST 1301	US History to 1865 (Replace CCSI 1136, 1336 with CSCI 1436) <sup>1</sup>	3
UNIV 1301	First Year Seminar	3
<b>Credits</b>		<b>17</b>

### Second Semester

ENGL 1302	Composition II <sup>1</sup> or ENGL 2311 or Technical Writing	3
MATH 2314	Calculus II <sup>1</sup>	3
MATH 2114	Calculus II Lab <sup>1</sup>	1
Life & Physical Science <sup>1,3</sup>		3
CSCI 1437	Programming Fundamentals II	4
Life & Physical Science Lab <sup>1,3</sup>		1
<b>Credits</b>		<b>15</b>

### Second Year

#### First Semester

GOVT 2305	Federal Government <sup>1</sup>	3
MATH 1342	Introductory Statistics <sup>1</sup>	3
MATH 1042	Intro Statistics Recitation	0
HIST 1302	US History from 1865 <sup>1</sup>	3
CSCI 2325	Computer Organization <sup>1</sup>	3
CSCI 2436	Programming Fundamentals III <sup>1</sup>	4
<b>Credits</b>		<b>16</b>

#### Second Semester

GOVT 2306	Texas Government <sup>1</sup>	3
Life & Physical Science <sup>1,3</sup>		3
Life & Physical Science Lab <sup>1,3</sup>		1
CSCI 2322	Discrete Structures for Comput <sup>1</sup>	3
Creative Arts		3

Language/Philosophy /Culture <sup>1</sup>	3
<b>Credits</b>	<b>16</b>
<b>Third Year</b>	
<b>First Semester</b>	
MATH 3340 Linear Algebra with Appl	3
CSCI 3304 Database Systems	3
CSCI 3366 Programming Languages	3
Social and Behavioral Science <sup>1</sup>	3
Upper Division CSCI Elective or Approved CISA Elective	3
<b>Credits</b>	<b>15</b>
<b>Second Semester</b>	
CSCI 3321 Cyber Security	3
CSCI 3343 Algorithms	3
CSCI 3344 Computer Architecture	3
CSCI 3362 Operating Systems	3
Upper Division CSCI or Approved CISA Elective	3
<b>Credits</b>	<b>15</b>
<b>Fourth Year</b>	
<b>First Semester</b>	
CSCI 4406 Computer Networks	4
CSCI 4316 Software Engineering I	3
Upper Division CSCI Elective or Approve CISA Elective	3
Upper Division CSCI Elective or Approve CISA Elective	3
CSCI 4101 Ethical Issues in Computing	1
<b>Credits</b>	<b>14</b>
<b>Second Semester</b>	
CSCI 4391 Senior Project	3
CSCI 4321 Computer Security	3
CSCI 4317 Software Engineering II	3
Upper Division CSCI Elective or Approve CISA Elective	3
<b>Credits</b>	<b>12</b>
<b>Total Credits</b>	<b>120</b>

<sup>1</sup> Course may be taken at a community college.

<sup>2</sup> Students complete NSA Cyber Certificate must take following electives:  
CISA 3309 Scripting Languages, CISA 4323 Computer Forensics,  
CISA 4324 Security Risk Analysis

<sup>3</sup> For transfer students, 40 hours of Major course + Major electives from A&M-SA are required.