

Texas A&M University – College of Engineering -- Department of Computer Science and Engineering  
Degree Plan for the Bachelor of Arts in **Computing** (BA-COMP)  
Valid for the Fall 2019 catalog

**Undergraduate Required Areas: 120 credits**

Major Coursework: 34 credits

CSCE 110 or 111 or 206 (4 credits)  
CSCE 181 (1 credit; requires C or better)  
CSCE 121 (4 credits; requires C or better; prereq CSCE 110 or 111)  
CSCE 222 (3 credits; requires C or better; prereq calculus class)  
CSCE 221 (4 credits; requires C or better; prereq CSCE 121, coreq CSCE 222)  
CSCE 312 (4 credits; requires C or better; coreq CSCE 221 C or better)  
CSCE 314 (3 credits; requires C or better; coreq CSCE 221 C or better)  
CSCE 313 (4 credits; requires C or better; prereq CSCE 221 C or better, CSCE 312)  
CSCE 315 (3 credits; requires C or better); prereq CSCE 312, CSCE 314  
CSCE 481 (1 credit; requires C or better); prereq U3 or U4  
STAT 211 or STAT 301 or STAT 302 or STAT 303 (3 credits)

Supporting Coursework: 9 credits (prescribed electives) + CSCE 482 (3) + 29 credits (concentration electives)

9 credits from CSCE 300 and 400 level technical electives  
CSCE 482 (3 credits):  
29 credits of concentration electives, to be approved by the major

Communication: 9 credits

ENGL 103 or 104 (3 credits) (requires a grade of C or better)  
ENGL 203 or ENGL 210 or ENGL 241 (3 credits)  
COMM 203 or COMM 205 or COMM 243 (3 credits)

Mathematics: 6 credits

One of MATH 131, 142, 147, 151, 171  
Remaining hours from MATH 141, 148, 152, 172, PHIL 240

Life and Physical Sciences: 9 credits

Select from list at core.tamu.edu

Language, Philosophy and Culture: 3 credits

Select from list at core.tamu.edu

Creative Arts: 3 credits

Select from list at core.tamu.edu

Social and Behavioral Science: 3 credits

Select from list at core.tamu.edu

Citizenship: American history 6 credits + government/political science 6 credits

Select from list at core.tamu.edu

University Writing Req: 6 credits (Two courses with the UWRT or UCRT attribute)

CSCE 482 and CSCE 315 (expected)

Int'l & Cult Diversity (3) and Cultural Discourse (3): 6 credits

Select from list at icd.tamu.edu

### BA-COMP Prescribed Electives (9 hours required)

( ) CSCE 310	(prereq 221, C or better)	Database Systems
( ) CSCE 320	(prereq STAT 211, CSCE 222)	Principles of Data Science
( ) CSCE 402		Law & Policy in Cybersecurity
( ) CSCE 410	(prereq 313, 315)	Operating Systems
( ) CSCE 411	(prereq C or better in 221, 222)	Analysis of Algorithms 412
( ) CSCE 412	(prereq C or better in 315)	Cloud Computing
( ) CSCE 416	(prereq 312 or 350)	Hardware Design Verification
( ) CSCE 420	(prereq 221**)	Artificial Intelligence
( ) CSCE 421	(prereq MATH 304, STAT 211, CSCE 221)	Machine Learning
( ) CSCE 429+	(prereq 315)	Software Development, Globalization and Culture Abroad
( ) CSCE 430	(prereq 411)	Problem Solving Design
( ) CSCE 431	(prereq 315)	Software Engineering
( ) CSCE 433	(prereq 315)	Formal Languages and Automata
( ) CSCE 434	(prereq 315)	Compiler Design
( ) CSCE 435	(prereq 315)	Parallel Computing
( ) CSCE 436	(coreq 315)	Computer-Human Interaction
( ) CSCE 438	(prereq 315)	Distributed Objects Programming
( ) CSCE 440	(prereq 315)	Quantum Algorithms
( ) CSCE 441	(prereq 221)	Computer Graphics
( ) CSCE 442#	(prereq 221; coreq MATH 304 or 308)	Scientific Programming
( ) CSCE 443	(prereq 441)	Game Development
( ) CSCE 444	(prereq 315)	Structures of Interactive Information
( ) CSCE 445	(prereq 221)	Computers and New Media
( ) CSCE 446	(prereq C or better in 221 or 441)	Virtual Reality
( ) CSCE 447	(prereq C or better in 221 or 441)	Data Visualization
( ) CSCE 451	(prereq 313)	Software Reverse Engineering
( ) CSCE 452	(prereq 315)	Robotics and Spatial Intelligence
( ) CSCE 456#	(prereq 313, MATH 152)	Real-Time Computing
( ) CSCE 461	(prereq 350 or 315)	Embedded Systems for Medical Applications
( ) CSCE 462	(prereq 313)	Microcomputer Systems
( ) CSCE 463	(prereq 313)	Networks & Distributed Prog.
( ) CSCE 464	(prereq 313)	Wireless and Mobile Systems
( ) CSCE 465	(prereq 313 and 315)	Computer & Network Security
( ) CSCE 469#	(prereq 350)	Advanced Computer Architecture
( ) CSCE 470	(prereq 315)	Information Storage and Retrieval
( ) CSCE 477	(prereq CSCE/CYBR 201)	Cybersecurity Risk
( ) CSCE 489%	(prereq varies)	Special topics

Course prerequisites are subject to change. The prerequisites in effective at the time the course is taken will prevail for all courses. Consult the most recent undergraduate catalog for details.

# This course is not being taught on a regular basis

\*\*CSCE 420's prerequisite is being changed to CSCE 411

+ Study abroad course

% CSCE 489, special topics, may be taken multiple times as long as each course is a different one.

**Example four year plan—BA-COMP, 2019 catalog**

<b>FIRST YEAR</b>			
<b>Semester 1</b>		<b>Semester 2</b>	
CSCE 110 or 111 or 206	4	CSCE 121	4
CSCE 181	1	MATH course	3
MATH course	3	Science course	3
ENGL 104	3	University Core Curriculum elective	3
University Core Curriculum elective	3	Concentration elective	3
<b>TOTAL</b>	<b>14</b>	<b>TOTAL</b>	<b>16</b>

<b>SECOND YEAR</b>			
<b>Semester 3</b>		<b>Semester 4</b>	
CSCE 221	4	CSCE 312	4
CSCE 222	3	CSCE 314	3
Statistics course	3	Communications elective	3
Science course	3	Science course	3
Concentration elective	3	Concentration elective	3
<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>16</b>

<b>THIRD YEAR</b>			
<b>Semester 5</b>		<b>Semester 6</b>	
CSCE 313	4	CSCE elective	3
CSCE 315	3	University Core Curriculum elective	3
CSCE 481	1	Concentration elective	3
University Core Curriculum elective	3	Concentration elective	3
Concentration elective	3	Communications elective	3
<b>TOTAL</b>	<b>14</b>	<b>TOTAL</b>	<b>15</b>

<b>FOURTH YEAR</b>			
<b>Semester 7</b>		<b>Semester 8</b>	
CSCE elective	3	CSCE elective	3
University Core Curriculum elective	3	CSCE 482	3
University Core Curriculum elective	3	University Core Curriculum elective	3
Concentration elective	3	Concentration elective	3
Concentration elective	3	Concentration elective	2
<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>14</b>

Note: University Core Curriculum electives include those in the following categories: Creative Arts; Social and Behavioral Science; Citizenship, and Language, Philosophy, and Culture (7 courses in all). This example assumes that the student is able to take one International and Cultural Diversity class and one Cultural Diversity class that also fit into the University Core Curriculum category.

# BA COMP Four Year Plan

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1	2	3	4	5	6	7	8
CSCE 110/111/206 (4)	CSCE 121(4)	CSCE 221(4)	CSCE 312(4)	CSCE 313 (4)	CSCE Elective (3)	CSCE Elective (3)	CSCE Elective (3)
CSCE 181(1)	UCC (3)	CSCE 222(3)	CSCE 314(3)	CSCE 315 (3)		UCC (3)	CSCE 482 (3)
MATH 1 (3)	MATH 2 (3)	STAT (3)	COMM Elective (3)	CSCE 481 (1)	UCC (3)	UCC (3)	UCC (3)
ENGL 104 (3)	Science (3)	Science (3)	Science (3)	UCC (3)	Concentration Elective (3)	Concentration Elective (3)	Concentration Elective (3)
UCC (3)	Concentration Elective (3)	Concentration Elective (3)	Concentration Elective (3)	Concentration Elective (3)	Concentration Elective (3)	Concentration Elective (3)	Concentration Elective (2)
					COMM Elective (3)		
14 hours	16 hours	16 hours	16 hours	14 hours	15 hours	15 hours	14 hours

Arrows designate  
 Implied prerequisite .....→  
 Stated prerequisite ———→  
 Co-requisite - - - - -→

**Degree Plan Information for  
the BA in Computing (BA-COMP)  
2019 Catalog**

The Bachelor of Arts degree with a major in computing provides students with the opportunity to obtain computing knowledge and skills to be coupled with their non-computing interests in a wide variety of areas such as liberal arts, science, education, business, data science, robotics, etc. The degree allows students to build up strong computational fundamentals that are custom-fit to domains of interest that require such skills. The degree program is designed to provide flexibility in the choice of courses, both in computing and in the students' field of interest, so that students, after graduation, can have a broader range of career options, both in industry and in academia, reflecting the increasing demand for interdisciplinary talent where computing plays a major role.

Students who graduate from our major will have strong foundational skills in computing, both theoretical and practical. The degree plans that students develop will couple the strength in computing with a sound knowledge of their intersecting area of interest. To achieve this, the degree is designed as a 120 hour program, with flexibility in the choice of courses: 9 hours of prescribed electives in computer science and 29 hours of concentration electives. An additional focus is on development of writing and communications skills.

The University requires that all students have an approved degree plan in Howdy. The degree plan, which most students must complete by the Fall semester that is the third semester in residence (second semester for students who begin studies in a spring semester), also must be updated and approved on a yearly basis. **The BA in Computing also will require completion and approval of a supplementary degree plan before the University's plan will be approved.** The student will identify their non-computing focus area on this supplementary plan, will identify the electives that will make up the 29 hours of concentration electives, will obtain verification from the advisor(s) of the department(s) teaching the concentration electives that registration in the classes is feasible (e.g., not limited by unavailable prerequisites or non-waivable major restrictions), and will obtain faculty-level approval from the CSCE department (some of the CSCE academic advisors are also members of the faculty and will be able to provide this approval). A form will be available at the CSCE advising office for this.

Coursework towards a second degree, a second major, or associated with a previous baccalaureate degree, will generally be accepted as meeting the concentration elective requirement, assuming sufficient credits are available for the BA-COMP degree, without requiring additional approvals. Because of the sizable overlap between degree requirements, double degrees and double majors are not expected to be allowed with BS-CPSC, BS-CECN, or BS-CEEN.

***The example four year schedule:*** The four year example plan is just one of many possible arrangements of classes that will meet the requirements of BA-COMP in four academic years. The student should feel free to adjust the schedule as necessary if classes are unavailable. ENGL

104 is suggested in semester one primarily because the English department limits registration to freshmen and sophomores, although seats may be limited. If the student needs to take the class elsewhere, an equivalent class to ENGL 103 also will be accepted for this requirement.

**AP and IB credit:** The student is asked to consult with CSCE advising before accepting or rejecting AP or IB credit. This requirement is primarily so that we can assist the student in identifying all credits that are beneficial to accept, since the University's policy is that the decision cannot be changed once made. Specific information about AP and IB requirements can be found at [testing.tamu.edu](http://testing.tamu.edu).

**Credit transferred from other institutions:** The student should consult the transfer course equivalency website maintained by Texas A&M University admissions. If an equivalent TAMU course number is shown, the credit does not require further action by our office to be usable on the student's degree plan. If instead the course is listed as potentially transferrable but without specific equivalency shown (called a transfer "by title"), we will need to evaluate the course before determining if it can be used. If you take classes that need to be transferred to TAMU, request that an official transcript be sent by the institution directly to TAMU admissions.

**International and Cultural Diversity and Cultural Discourse classes:** Classes needed to meet the International and Cultural Diversity requirement and the Cultural Discourse requirement are not included in the 120 hours required for the degree since they can be "doubled up" with other University Core Curriculum requirements. ICD/CD classes are identified in the table at [core.tamu.edu](http://core.tamu.edu) and also a complete list is shown at [icd.tamu.edu](http://icd.tamu.edu).

**University writing requirement:** In addition to the communications requirements in the University Core Curriculum, TAMU requires that two writing (or communications) intensive classes be included in the major-specific courses required for the degree. These classes must be certified by the University but note that this does not imply that other classes do not include writing or communications as an integral part of their curriculum. This currently is provided in the Computing degree by CSCE 315 and CSCE 482.

**Residence Requirement:** TAMU requires that degree plans contain a minimum of 36 hours of coursework at the 300 to 400 level, completed at TAMU. The student should keep this requirement in mind in selecting courses for Concentration Electives.

**Foreign Language Requirement:** Proficiency in a foreign language is required to graduate from Texas A&M University. This requirement can be met by:

- Completing two units (two full years) of high school course work in the same foreign language.
- Completing two semesters (one full year) of course work at the college level in the same foreign language, or
- Demonstrating proficiency in a foreign language by examination. See catalog for additional requirements under graduation requirements and Foreign Language.

**Advising questions:** CSCE undergraduate advising can be reached by email to [ugrad-advisor@cse.tamu.edu](mailto:ugrad-advisor@cse.tamu.edu). The office phone number, open standard business hours, is 979-845-4087. We currently are using Navigate (available in your Howdy portal) for appointments.