

# BACHELOR OF SCIENCE (B.S.) MAJOR IN COMPUTER SCIENCE (COMPUTER ENGINEERING CONCENTRATION)

**Minimum required: 120  
semester credit hours**

## General Requirements

- The general education core curriculum courses are listed in the degree plan below along with the statewide component code number. See the General Education Core Curriculum (<http://mycatalog.txstate.edu/undergraduate/general-education-core-curriculum>) section of this catalog for the Texas State requirements and options in the core curriculum, including Honors courses.
- In addition to satisfying the University graduation requirements, students must earn a grade of C or higher in all computer science, computer engineering concentration, and mathematics courses used to satisfy the requirements of the computer science major.
- For transfer students, 26-32 semester credit hours in computer science (or their equivalents) may be transferred from a Texas public institution of higher education for the Computer Science Field of Study and be applied to the Bachelor of Science degree with a major in Computer Science at Texas State University. More information about the Field of Study (<http://mycatalog.txstate.edu/undergraduate/general-information/academic-policies/texas-legislative-requirements>) is available in the Academic Policies section of this catalog. If transferring additional computer science courses please contact the Department of Computer Science for assistance. The transferable Texas Common Course Number (TCCN) is listed below the Texas State University course number in the following course list.

Code	Title	Hours
CS 1319	Fundamentals of Computer Science	3
TCCN: COSC 1336 or 1436 (CS 1319 + 1 hour CS ELNA)		
CS 1428	Foundations of Computer Science I	4
TCCN: COSC 1337 or 1437		
CS 2308	Foundations of Computer Science II	3
TCCN: COSC 2336 or 2436 (CS 2308 + 1 hour CS ELNA)		
CS 2318	Assembly Language	3
TCCN: COSC 2325 or 2425 (CS 2318 + 1 hour CS ELNA)		
MATH 2471	Calculus I	4
TCCN: MATH 2313 or 2413		
MATH 2472	Calculus II	4
TCCN: MATH 2314 or 2414		
PHYS 1430	Mechanics	4
TCCN: PHYS 2425		
PHYS 2425	Electricity and Magnetism	4

TCCN: PHYS 2426	
Total	26-32

- Students pursuing this B.S. degree program are required to complete an additional 3 hours of English beyond the general education core curriculum. A grade of C or higher is required in these additional hours to satisfy the graduation requirements of the computer science major. Students may select from the following English courses. ENG 3303 or ENG 3313 is recommended.

Code	Title	Hours
ENG 2310	British Literature before 1785	3
ENG 2320	British Literature since 1785	3
ENG 2330	World Literature before 1600	3
ENG 2340	World Literature since 1600	3
ENG 2359	US Literature before 1865	3
ENG 2360	US Literature since 1865	3
ENG 3303	Technical Writing	3
ENG 3313	Scientific Writing	3

- Nine hours of writing intensive (WI) courses are required for graduation.
- Majors must complete a minimum of 36 advanced hours (3000 or 4000 level courses).
- Students pursuing this B.S. degree program are required to complete a total of 17 hours in mathematics from MATH 2471, MATH 2472, MATH 3305, MATH 2358, MATH 3398. Therefore, the requirements of a Mathematics or Applied Mathematics minor are included in this degree plan.
- If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of language taken in high school, then two semesters of the same modern language (1410 and 1420) must be taken at the college level, and the requirements will be added to the student's degree audit.
- The number of free electives a student will complete varies, depending on the number of hours needed to satisfy the 120 and/or the 36 advanced or 9 hours writing intensive requirements. Students should consult with the academic advisor before enrolling in any free elective courses to ensure that electives are needed.
- Computer Science majors with the Computer Engineering (CE) concentration must complete one CS project course from: CS 4318, CS 4326, CS 4371, CS 4380, or CS 4398. Cannot be the same computer science course completed to satisfy the CE concentration elective.
- The concentration in Computer Engineering consists of the following courses:

Code	Title	Hours
CS 3369	Embedded Computer Systems	3
EE 2400	Circuits I	4
EE 2420	Digital Logic	4
Select one of the following:		
CS 4310	Computer Networks	
CS 4318	Compiler Construction	
CS 4380	Parallel Programming	
CS 4388	Computer Graphics	

## Course Requirements

<b>Freshman</b>			
<b>First Semester Hours</b>		<b>Second Semester Hours</b>	
CS 1428	4	CS 2308	3
MATH 2471 (Mathematics Component Code 020)	4	MATH 2472	4
US 1100	1	ENG 1320 (Communication Component Code 010)	3
ENG 1310 (Communication Component Code 010)	3	PHIL 1305 or 1320 (Language, Philosophy & Culture Component Code 040)	3
COMM 1310 (Component Area Option Code 090/091)	3	MATH 2358	3
15		16	

<b>Sophomore</b>			
<b>First Semester Hours</b>		<b>Second Semester Hours</b>	
CS 2318	3	CS 2315	3
CS 3358	3	CS 3354	3
EE 2420	4	MATH 3398	3
Life & Physical Sciences Component Code 030 <sup>1</sup>	4	Life & Physical Sciences Component Code 030 <sup>2</sup>	4
ENG Literature (Component Area Option Code 090/094)	3	POSI 2310 (Government/Political Science Component Code 070)	3
17		16	

<b>Junior</b>			
<b>First Semester Hours</b>		<b>Second Semester Hours</b>	
CS 3339	3	CS 3398	3
EE 2400	4	MATH 3305	3
ENG Literature	3	Life & Physical Sciences <sup>1</sup>	4
Life & Physical Sciences <sup>1</sup>	4	HIST 1310 (American History Component Code 060)	3
		CS Concentration elective: select one of the following	3
		CS 4310	
		CS 4318	
		CS 4380	
		CS 4388	
14		16	

<b>Senior</b>			
<b>First Semester Hours</b>		<b>Second Semester Hours</b>	
CS 3369	3	Select one of the following:	3
CS 4328	3	CS 4318	
HIST 1320 (American History Component Code 060)	3	CS 4326	
ART 2313, DAN 2313, MU 2313, or TH 2313 (Creative Arts Component Code 050)	3	CS 4371	
		CS 4380	
		CS 4398	
		Math/Applied Math Minor	3

POSI 2320 (Government/Political Science Component Code 070)	3
Social & Behavioral Sciences Component Code 080	3
Electives	2
12	14

Total Hours: 120

<sup>1</sup> Computer Science majors must take sixteen hours (4 courses) of Life & Physical Sciences from: BIO 1330/BIO 1130 & BIO 1331/BIO 1131; PHYS 1315/PHYS 1115 & PHYS 1325/PHYS 1125 [or PHYS 1430 & PHYS 2425]; CHEM 1341/CHEM 1141 and CHEM 1342/CHEM 1142; or GEOL 1410 & GEOL 1420. Eight hours (2 courses) must be from the same science (BIO, CHEM, GEOL, or PHYS) as listed above. Field of Study requirements of PHYS 1430 and PHYS 2425 will be used to satisfy this requirement.