

# BACHELOR OF SCIENCE WITH A MAJOR IN COMPUTER ENGINEERING (BS)

## HOURS REQUIRED

A minimum of 129 semester credit hours (SCH): 45 hours must be advanced, and fulfillment of degree requirements as specified in the "Requirements for Graduation (<http://catalog.tamui.edu/undergraduate-information/academic-regulations/>)" section of this catalog.

Code	Title	Semester Credit Hours
<b>[University Core Curriculum] (<a href="https://catalog.tamui.edu/appendix-a-core-curriculum-optional-course-information/">https://catalog.tamui.edu/appendix-a-core-curriculum-optional-course-information/</a>)</b>		
Select 42 SCH as outlined in the suggested plans and as specified in the "Requirements for Graduation." MATH 2413 must be taken as part of the core.		42
<b>Major</b>		
<i>Engineering</i>		
ENGR 1201	Foundations of Engineering I	2
ENGR 1304	Computer-Aided Design	3
ENGR 2105	Principles of Elec Engr Lab	1
ENGR 2305	Principles of Elec Engineering	3
ENGR 2372	Engineering Statistics	3
ENGR 3300	Engineering Economics	3
<i>Computer Engineering</i>		
CSCE 1336	Fundamentals of Programming	3
CSCE 1136	Funds of Programming Lab	1
CSCE 1337	Object Oriented Programming	3
CSCE 1137	Object-Oriented Program Lab	1
CSCE 2330	Digital Logic Design	3
CSCE 3301	Algorithms & Data Structures	3
CSCE 3314	Electronic Devices & Apps	3
CSCE 3320	Signals and Systems	3
CSCE 3335	Networks & Data Communication	3
CSCE 3340	Microprocessor Systems	3
CSCE 3345	Robotics and Automation	3
CSCE 4300	Dig Electronic Circuit Design	3
CSCE 4301	Software Engineering	3
CSCE 4315	Embedded Systems	3
CSCE 4320	Computer System Architecture	3
CSCE 4326	Operating Systems	3
CSCE 4380	Senior Design I-WIN	3
CSCE 4390	Senior Design II	3
<b>Math and Sciences</b>		
CHEM 1111	General Chemistry I-Lab	1
MATH 2414	Calculus II	4
MATH 2415	Calculus III	4

MATH 3310	Introduction to Linear Algebra	3
MATH 3330	Ordinary Diff Equations	3
MATH 3365	Discrete Mathematics	3
Select 1 SCH surplus from core		1
<b>CSCE Advanced Electives</b>		
Select 3 SCH from the following:		3
CSCE 4310	Computer Security	
CSCE 4330	Parallel Programming & HPC	
CSCE 4335	Computer Engineering Design	
CSCE 4345	Programming Languages	
CSCE 4152	Internship in Comp Sci & Engr	
CSCE 4252	Internship in Comp Sci & Engr	
CSCE 4352	Internship in Comp Sci & Engr	
CSCE 4360	Machine Learning	
CSCE 4185	Special Topics in CSCE	
CSCE 4285	Special Topics in CSCE	
CSCE 4385	Special Topics in CSCE	
CSCE 4195	Undergraduate Research	
CSCE 4295	Undergraduate Research	
CSCE 4395	Undergraduate Research	
CSCE 4199	Directed Study in CSCE	
CSCE 4299	Directed Study in CSCE	
CSCE 4399	Directed Study in CSCE	

**Total Semester Credit Hours** **129**

## Four-Year Degree Plan

Following is a suggested four-year degree plan. Students are encouraged to see their advisor each semester for help with program decisions and enrollment; responsible for reviewing the **Program of Study Requirements**, meeting all course prerequisites, and **writing intensive course (WIN)** requirements for graduation. See Academic Regulations-Undergraduate online. (<https://catalog.tamui.edu/undergraduate-information/academic-regulations/>)

<b>Freshman</b>		<b>Semester Credit Hours</b>
<b>Fall</b>		
CSCE 1136	Funds of Programming Lab	1
CSCE 1336	Fundamentals of Programming	3
ENGL 1301	English Composition I	3
ENGR 1201	Foundations of Engineering I	2
HIST 1301	The US to 1877	3
MATH 2413	Calculus I	4
UNIV 1201	Learn a Global Context I	2
<b>Semester Credit Hours</b>		<b>18</b>
<b>Spring</b>		
ENGL 2311	Technical Communication-WIN	3
ENGR 1304	Computer-Aided Design	3
MATH 2414	Calculus II	4
PHYS 2125	University Physics I Lab	1
PHYS 2325	University Physics I	3

UNIV 1302	Signature Course	3
<b>Semester Credit Hours</b>		<b>17</b>

**Sophomore**
**Fall**

CSCE 1137	Object-Oriented Program Lab	1
CSCE 1337	Object Oriented Programming	3
CSCE 2330	Digital Logic Design	3
ENGR 2105	Principles of Elec Engr Lab	1
ENGR 2305	Principles of Elec Engineering	3
HIST 1302	The US Since 1877	3
MATH 2415	Calculus III	4

**Semester Credit Hours** **18**

**Spring**

ENGR 2372	Engineering Statistics	3
MATH 3310	Introduction to Linear Algebra	3
MATH 3330	Ordinary Diff Equations	3
MATH 3365	Discrete Mathematics	3
PSCI 2305	American National Government	3

**Semester Credit Hours** **15**

**Junior**
**Fall**

CHEM 1111	General Chemistry I-Lab	1
CHEM 1311	General Chemistry I	3
CSCE 3301	Algorithms & Data Structures	3
CSCE 3320	Signals and Systems	3
PSCI 2306	American State Government	3
Language, Philosophy, and Culture		3

**Semester Credit Hours** **16**

**Spring**

CSCE 3314	Electronic Devices & Apps	3
CSCE 3335	Networks & Data Communication	3
CSCE 3340	Microprocessor Systems	3
CSCE 3345	Robotics and Automation	3
CSCE 4301	Software Engineering	3

**Semester Credit Hours** **15**

**Senior**
**Fall**

CSCE 4300	Dig Electronic Circuit Design	3
CSCE 4315	Embedded Systems	3
CSCE 4320	Computer System Architecture	3
CSCE 4380	Senior Design I-WIN	3
Social & Behavioral Sciences		3

**Semester Credit Hours** **15**

**Spring**

ENGR 3300	Engineering Economics	3
CSCE 4326	Operating Systems	3
CSCE 4390	Senior Design II	3
Advanced CSCE Elective*		3

Creative Arts	3
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**Semester Credit Hours** **15**

**Total Semester Credit Hours** **129**

\* Advanced CSCE Elective: select 3 semester credit hours (SCH) from CSCE 4310, CSCE 4330, CSCE 4335, CSCE 4345, CSCE 4152-4352, CSCE 4360, CSCE 4185-4385, CSCE 4195-4395, or CSCE 4199-4399.

*Actual degree plans may vary depending on the availability of courses in a given semester.*

*Some courses may require prerequisites not listed.*