COMPUTER SCIENCE - BS

Program Requirements

The freshman year is identical for degrees in aerospace engineering, architectural engineering, civil engineering, computer engineering, computer science, data engineering, electrical engineering, electronic systems engineering technology, environmental engineering, industrial distribution, industrial engineering, interdisciplinary engineering, manufacturing and mechanical engineering technology, mechanical engineering, multidisciplinary engineering technology, nuclear engineering, ocean engineering, and petroleum engineering (Note: not all programs listed are offered in Qatar). The freshman year is slightly different for chemical engineering, biomedical engineering and materials science and engineering degrees in that students take CHEM 119 or CHEM 107/CHEM 117 and CHEM 120. Students pursuing degrees in biological and agricultural engineering should refer to the specific curriculum for this major. It is recognized that many students will change the sequence and number of courses taken in any semester. Deviations from the prescribed course sequence, however, should be made with care to ensure that prerequisites for all courses are met.

First Year

Fall		Semester Credit Hours
CHEM 107	General Chemistry for Engineering Students [1,4]	3
CHEM 117	General Chemistry for Engineering Students Laboratory [1,4]	1
ENGL 103 or ENGL 104	Introduction to Rhetoric and Composition [1] or Composition and Rhetoric	3
ENGR 102	Engineering Lab I - Computation [1]	2
MATH 151	Engineering Mathematics I [1,2]	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
	Semester Credit Hours	16
Spring		
ENGR 216/ PHYS 216	Experimental Physics and Engineering Lab II - Mechanics [1]	2
MATH 152	Engineering Mathematics II [1]	4
PHYS 206	Newtonian Mechanics for Engineering and Science [1]	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
Select one of the following:		3-4
CHEM 120	Fundamentals of Chemistry II [1,4]	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3,5]		
	Semester Credit Hours	15-16
	Total Semester Credit Hours	31-32

[1] A grade of C or better is required.

[2] Entering students will be given a math placement exam. Test results will be used in selecting the appropriate starting course which may be at a higher or lower level.

[3] Of the 21 hours shown as University Core Curriculum electives, 3 must be from creative arts (see AREN curriculum for more information), 3 from social and behavioral sciences (see DAEN and IDIS curriculum for more information), 3 from language, philosophy and culture (see CVEN, EVEN and PETE curriculum for more information), 6 from American history and 6 from government/political science. The required 3 hours of international and cultural diversity and 3 hours of cultural discourse may be met by courses satisfying the creative arts, social and behavioral sciences, language, philosophy and culture, and American history requirements if they are also on the approved list of international and cultural diversity (http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/) courses and cultural discourse (http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/) courses.

[4] BMEN, CHEN and MSEN require 8 hours of fundamentals of chemistry which are satisfied with CHEM 119 or CHEM 107/CHEM 117 and CHEM 120; Students with an interest in BMEN, CHEN and MSEN can take CHEM 120 second semester freshman year. CHEM 120 will substitute for CHEM 107/CHEM 117.

[5] For BS-PETE, allocate 3 hours to core communications course (ENGL 210, COMM 203, COMM 205, or COMM 243) and/or 3 hours to UCC elective. For BS-MEEN, allocate 3 hours to core communications course (ENGL 203, ENGL 210, or COMM 205) and/or 3 hours to UCC elective.

Second Year

Fall		Semester Credit Hours
CSCE 181	Introduction to Computing [1]	1
CSCE 120	Program Design and Concepts [1]	3
CSCE 222/ ECEN 222	Discrete Structures for Computing [1]	3
MATH 304	Linear Algebra [1]	3
Science elective [6,7]		4
General elective [6]		1
	Semester Credit Hours	15
Spring		
CSCE 221	Data Structures and Algorithms [1]	4
CSCE 312	Computer Organization [1]	4
CSCE 314	Programming Languages [1]	3
Select one of the following:		3
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
ENGL 210	Technical and Professional Writing	
Emphasis area elective [1,8]		3
	Semester Credit Hours	17

Third Year

Fall		
CSCE 313	Introduction to Computer Systems [1]	4
CSCE 331	Foundations of Software Engineering [1]	4
STAT 211	Principles of Statistics I [1]	3

University Core Curriculum (http://catalog.tamu.edu/ undergraduate/general-information/university-core-curriculum/) [3]		3
Emphasis area elective [1,8]		3
Semester Credit Hours		**17**
Spring		
CSCE 411	Design and Analysis of Algorithms [1]	3
CSCE 481	Seminar [1]	1
Select one of the following: [1]		3
MATH 251	Engineering Mathematics III	
MATH 308	Differential Equations	
STAT 212	Principles of Statistics II	
Computer science elective (http://catalog.tamu.edu/ undergraduate/course-descriptions/csce/) [1,9]		6
Science elective [7]		3
High Impact Experience [10]		0
CSCE 399	High-Impact Experience	
Semester Credit Hours		**16**
Fourth Year		
Fall		
University Core Curriculum (http://catalog.tamu.edu/ undergraduate/general-information/university-core-curriculum/) [3]		3
Computer science elective (http://catalog.tamu.edu/ undergraduate/course-descriptions/csce/) [1,9]		9
Emphasis area elective [1,8]		3
Semester Credit Hours		**15**
Spring		
CSCE 482	Senior Capstone Design [1]	3
University Core Curriculum (http://catalog.tamu.edu/ undergraduate/general-information/university-core-curriculum/) [3]		6
Computer science elective (http://catalog.tamu.edu/ undergraduate/course-descriptions/csce/) [1,9]		3
Emphasis area elective [1,8]		3
Semester Credit Hours		**15**
Total Semester Credit Hours		**95**

[6] If the student takes ENGR 217/PHYS 217 and PHYS 207, the 3 hours of PHYS 207 go towards the science requirement along with 1 hour of ENGR 217/PHYS 217. The other hour of ENGR 217/PHYS 217 can be used as general elective.

[7] See advisor for list of acceptable science courses.

[8] The emphasis area should be chosen only after consultation with a departmental advisor who will help the student arrange a program appropriate to his or her plans following graduation. Students should file a degree plan before taking minor courses to ensure their use in the degree plan.

[9] Of the 18 hours shown as Computer science electives, 3 must be from systems directed electives, 3 must be from software directed electives, 3 must be from info/intel systems directed electives, 6 must be from upper level CSCE electives, and 3 must be from CSCE electives. See advisor for list of acceptable course choices.

[10] All students are required to complete a high-impact experience in order to graduate. The list of possible high-impact experiences is available in the CSCE advising office.

Total Program Hours 126