Computer Science Major, B.S.

Department of Computer Science

The B.S. in Computer Science provides a solid foundation in mathematics and statistics, computational problem solving, software design and analysis, computer theory, programming languages, algorithms, data structures, and computer organization and architecture. The program also requires that students acquire significant knowledge in several subdisciplines of computer science, thus enabling students to apply and situate their knowledge of computer science fundamentals. The program provides the necessary foundation for students seeking careers in the computing industry or preparing for graduate study.

Typical Program of Study:

Fall Semester		*Spring Semester*	
First Year			
CS 1511 Computer Science I		CS 1521 Computer Science II	5 cr
or CS 1581 Honors Computer Science I	5 cr	Math 1297 Calculus II	5 cr
Math 1296 Calculus I [a]	5 cr	Comm 1112 Public Speaking	3 cr
Comp 1120 College Writing	3 cr		13 cr
	13 cr		
Second Year			
CS 2511 Software Analysis and Design	4 cr	CS 2521 Computer Organization & Architecture	4 cr
ECE 1315 Digital System Design	4 cr	CS 3512 Computer Science Theory	4 cr
Stat 3611 Probability & Statistics	4 cr	Math 2326 Intro to Linear Algebra	3 cr
Lab science I [b]	4-5 cr	Lab science II [b]	4-5 cr
	16-17 cr		15-16 cr
Third Year			
CS 3111 Computer Ethics	4 cr	CS 5621 Computer Architecture[#] ***or***	
CS 5631 Operating Systems	4 cr	CS 5651 Computer Networks[#]	4 cr
Comp 3150 Advanced Writing: Science	3 cr	CS breadth [c]	4 cr
Liberal education [f] / minor [e] courses	6 cr	Liberal education [f] / minor [e] courses	3 cr
	16-17 cr	Additional science elective [d]	4-5 cr
			15-16 cr
Fourth Year			
CS 4993 Seminar	1 cr	CS breadth/elective [c]	4 cr
CS breadth/elective [c]	4 cr	Liberal education [f] / minor [e] courses	11 cr
Liberal education [f] / minor [e] courses	4 cr		15 cr
	14 cr		

[a] First math course is determined by math placement exam. This schedule presupposes placement into Math 1296.

[b] A science sequence from the list below and one additional science course (4 cr) from liberal education category 4 are required:

Biol 1011 and 1012
Chem 1151 and 1152 or Chem 1161 and 1162
Geol 1110, 2311, and 2312
Physics 2011 and 2012

[c] Students must complete 3 additional CS breadth/elective courses, with at least 1 chosen from the breadth field. Breadth courses: CS 4511, 4521, 4531, 4611, 5541, 5551, 5621[#], 5641, 5651[#]. Other electives: CS 4821, 5721, 5741, 5751, 5761, 5831.

[d] Science course from Liberal Education Category 4 or a course with a Category 4 course as a prerequisite.

[e] Computer Science majors MAY NOT minor in Mathematics or Computer Information Systems.

[f] Students must take a total of 21 credits in the humanities, social sciences and arts.

[#] Course may be used to fulfill only one CS major requirement.

For more information contact: Department of Computer Science
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Computer Science Major, B.S.

MAJOR REQUIREMENTS	CREDITS	PREREQUISITES	SEMESTER TO BE COMPLETED	GRADE
YEAR 1				
CS 1511 Computer Science I (or CS 1581 Honors)	5	3.5 yrs HS math (and placement for honors)		
CS 1521 Computer Science II	5	CS 1511		
Math 1296 Calculus I	5	Math 1250 with at least a 'C-' or math placement		
Math 1297 Calculus II	5	Math 1297		
Comm 1112 Public Speaking	3			
Comp 1120 College Writing	3			
YEAR 2				
CS 2511 Software Analysis and Design	4	CS 1521		
CS 2521 Computer Organization and Architecture	4	CS 1521, ECE 1315, Math 1296		
CS 3512 Computer Science Theory	4	Math 3355		
ECE 1315 Digital System Design	4			
Math 2326 Introduction to Linear Algebra	3	Math 1296 or 1596		
Stat 3611 Intro to Probability and Statistics	4	A grade of at least C- in Math 1296		
Lab Science I *	4-5			
Lab Science II *	4-5			
YEAR 3				
CS 3111 Computer Ethics	4	CS 2511		
OR				
Phil 3242 Values and Technology	3	60 credits		
CS 5631 Operating Systems	4	CS 2511, 2521		
CS 5621 Computer Science Architecture #	4	CS 2521		
OR				
CS 5651 Computer Networks #	4	CS 2511, 2521		
CS breadth/elective +	4			
Comp 3150 Advanced Writing: Science	3	Comp 1120; 60 credits		
Additional science elective ^	4-5			
YEAR 4				
CS 4993 Seminar	1	CS 2511, Comm 1112, Comp 3150, and 90 credits		
CS breadth/elective +	8			

* A science sequence from the list below and one additional science course (4 cr) from liberal education category 4 are required:
  Biol 1011 and 1012
  Chem 1151 and 1152 or Chem 1161 and 1162
  Geol 1110, 2311, and 2312
  Physics 2011 and 2012

Course may be used to fulfill only one CS major requirement

+ Students must complete 3 CS breadth/elective courses, with at least 1 chosen from the breadth field.
  Breadth courses: CS 4511, 4521, 4531, 4611, 5541, 5551, 5621#, 5641, 5651#
  Other electives: CS 4821, 5721, 5741, 5751, 5761, 5831

^ Science course from Liberal Education Category 4 or a course with a Category 4 course as a prerequisite.

NOTES:

1) In addition to the above requirements, students must complete the liberal education program and a minor to earn a B.S. degree; computer Science majors *MAY NOT* minor in Mathematics or Information Systems Technology.

2) Students must take a total of 21 credits in the humanities, social sciences and arts.