## MAJOR IN COMPUTER SCIENCE, COMPUTING SYSTEMS CONCENTRATION

## **Major Completion Map**

CT 301

Group B

C++ Fundamentals

**Distinctive Requirements for Degree Program:** 

To prepare for first semester: The curriculum for the Computer Science major assumes students enter college prepared to take calculus. Entering students who are not prepared to take calculus will need to fulfill pre-calculus requirements in the first semester. All students must maintain a C (2.000) or better in CO 150 and in all CS, DSCI, MATH, STAT and departmental Technical Elective courses which are required for graduation.

Freshman					
Semester 1		Critical	Recommended	AUCC	Credits
CO 150	College Composition (GT-CO2)	X		1A	3
First course from Requirements Ta	n Group A, B, or C (See options in Concentration ab)	Х			2-4
Department App	roved Science (See list on Concentration Requirements Tab)	Χ		3A	3
	and Inclusion (http://catalog.colostate.edu/general-catalog/re-curriculum/aucc/#diversity-equity-inclusion)	Х		10	3
Electives			X		0-2
MATH 124 and N calculus requirer	MATH 126 may be necessary for some students to fulfill prements.	Х			
	Total Credits				12-14
Semester 2		Critical	Recommended	AUCC	Credits
CS 201/PHIL 20	1 Ethical Computing Systems (GT-AH3)	Χ		3B	3
MATH 156 or 160	Mathematics for Computational Science I (GT-MA1) Calculus for Physical Scientists I (GT-MA1)	Х		1B	4
Remaining cours Requirements Ta	se(s) from Group A, B, or C (See options in Concentration ab)	Х			2-7
Department App Requirements Ta	roved Science with Lab (See list on Concentration ab)	Х		3A	4
Electives			X		0-2
CO 150 must be better.	completed by the end of Semester 2 with a grade of C or	Х			
	Total Credits				15-17
Sophomore					
Semester 3		Critical	Recommended	AUCC	Credits
CS 165	CS2Data Structures	Χ			4
CS 220	Discrete Structures and their Applications	Χ			4
Select one cours	se from the following:	Χ			1-3
STAT 301	Introduction to Applied Statistical Methods				
STAT 302A	Statistics Supplement: General Applications				
STAT 307	Introduction to Biostatistics				
STAT 315	Intro to Theory and Practice of Statistics				
	ectives (http://catalog.colostate.edu/general-catalog/all- curriculum/aucc/#historical-perspectives)		X	3D	3
Electives			X		0-4
	Total Credits				12-16
Semester 4		Critical	Recommended	AUCC	Credits
Select one group	from the following:	Χ			4-5
Group A					
CS 214	Software Development				

CS 253	Software Development with C++				
	se from the following:	Х			4
CS 250	Computer Systems Foundations	~			•
CS 270	Computer Organization				
	se from the following:	Х			3-4
DSCI 369	Linear Algebra for Data Science				0.
MATH 369	Linear Algebra I				
	avioral Sciences (http://catalog.colostate.edu/general-		X	3C	3
	ersity-core-curriculum/aucc/#social-behavioral-sciences)				_
CS 165 and CS	220 must be completed by the end of Semester 4.	Χ			
MATH 156 or M	ATH 160 and MATH 369 or DSCI 369 must be completed by	Χ			
the end of Seme	ester 4.				
	Total Credits				14
Junior					
Semester 5		Critical	Recommended	AUCC	Credits
CS 320	AlgorithmsTheory and Practice	Χ			3
CS 370	Operating Systems	Х			3
	ng (http://catalog.colostate.edu/general-catalog/all-			2	3
-	curriculum/aucc/#advanced-writing)	V			0.4
	ve (See list on Concentration Requirements Tab)	Х	V		3-4
Elective	as well-should have the sound of Companion F	V	Χ		1-3
CS 253 must be	completed by the end of Semester 5.  Total Credits	Х			10.16
	Intal Crenits				13-16
Compoter 6	Total orcano	Critical	Decemmended	ALICC	Cradita
Semester 6		Critical	Recommended	AUCC	Credits
CS 314	Software Engineering	Х	Recommended	AUCC	3
CS 314 Two CS courses	Software Engineering numbered 300- or above, excluding 380-399 and 480-499	X X	Recommended	AUCC	3 6-8
CS 314 Two CS courses Technical Electi	Software Engineering	Х		AUCC	3 6-8 3-4
CS 314 Two CS courses Technical Electi Elective	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab)	X X X	Recommended X	AUCC	3 6-8
CS 314 Two CS courses Technical Elective	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab) 320 and CS 370 must be completed by the end of Semester 6.	X X X		AUCC	3 6-8 3-4 1-3
CS 314 Two CS courses Technical Electi Elective CS 314 and CS 3	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab)	X X X		AUCC	3 6-8 3-4
CS 314 Two CS courses Technical Electi Elective CS 314 and CS 3	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab) 320 and CS 370 must be completed by the end of Semester 6.	X X X			3 6-8 3-4 1-3
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3 Senior Semester 7	Software Engineering snumbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits	X X X X	X	AUCC	3 6-8 3-4 1-3 13-18 Credits
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab) 320 and CS 370 must be completed by the end of Semester 6.  Total Credits e (See list on the Concentration Requirements Tab)	X X X	X		3 6-8 3-4 1-3
CS 314 Two CS courses Technical Electi Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective	Software Engineering snumbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits	X X X X Critical	X		3 6-8 3-4 1-3 13-18 Credits
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3 Senior Semester 7 Systems Course Systems Elective Electives	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 we (See list on Concentration Requirements Tab) 320 and CS 370 must be completed by the end of Semester 6.  Total Credits  e (See list on the Concentration Requirements Tab) The (See list on the Concentration Requirements Tab)	X X X X Critical	X		3 6-8 3-4 1-3 13-18 Credits 4
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3 Senior Semester 7 Systems Course Systems Elective Electives	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 ve (See list on Concentration Requirements Tab) 320 and CS 370 must be completed by the end of Semester 6.  Total Credits e (See list on the Concentration Requirements Tab)	X X X Critical X	X		3 6-8 3-4 1-3 13-18 Credits 4
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up	Software Engineering s numbered 300- or above, excluding 380-399 and 480-499 we (See list on Concentration Requirements Tab) 320 and CS 370 must be completed by the end of Semester 6.  Total Credits  e (See list on the Concentration Requirements Tab) The (See list on the Concentration Requirements Tab)	X X X Critical X	X		3 6-8 3-4 1-3 13-18 Credits 4
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up	Software Engineering snumbered 300- or above, excluding 380-399 and 480-499 we (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits  e (See list on the Concentration Requirements Tab) te (See list on the Concentration Requirements Tab) per-Division CS classes must be completed by the end of	X X X Critical X	X		3 6-8 3-4 1-3 13-18 Credits 4 4
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up Semester 7.  Semester 8	Software Engineering snumbered 300- or above, excluding 380-399 and 480-499 we (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits  e (See list on the Concentration Requirements Tab) te (See list on the Concentration Requirements Tab) per-Division CS classes must be completed by the end of	X X X  Critical X X	X Recommended X	AUCC	3 6-8 3-4 1-3 13-18 Credits 4 4 7
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up Semester 7.  Semester 8	Software Engineering snumbered 300- or above, excluding 380-399 and 480-499 we (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits  e (See list on the Concentration Requirements Tab) re (See list on the Concentration Requirements Tab) per-Division CS classes must be completed by the end of  Total Credits	X X X X Critical X X X	X Recommended X	AUCC	3 6-8 3-4 1-3 13-18 Credits 4 4 7
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up Semester 7.  Semester 8 Systems Course Electives The benchmark	Software Engineering Innumbered 300- or above, excluding 380-399 and 480-499 Inve (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits  In (See list on the Concentration Requirements Tab)  Total Credits  In (See list on the Concentration Requirements Tab)  Courses for the 8th semester are the remaining courses in the	X X X X Critical X X	X Recommended X	AUCC	3 6-8 3-4 1-3 13-18 Credits 4 4 7
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up Semester 7.  Semester 8 Systems Course Electives	Software Engineering Innumbered 300- or above, excluding 380-399 and 480-499 Inve (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits  In the Concentration Requirements Tab) In the Concentration Requirements Tab) In the Concentration Requirements Tab of Semester 6.  Total Credits  In the Concentration Requirements Tab of Semester 6.  Total Credits  In the Concentration Requirements Tab of Semester 6.  Total Credits  In the Concentration Requirements Tab of Study.	X X X X Critical X X	X Recommended X	AUCC	3 6-8 3-4 1-3 13-18 Credits 4 4 7 7 Credits 7
CS 314 Two CS courses Technical Elective Elective CS 314 and CS 3  Senior Semester 7 Systems Course Systems Elective Electives At least four Up Semester 7.  Semester 8 Systems Course Electives The benchmark	Software Engineering Innumbered 300- or above, excluding 380-399 and 480-499 Inve (See list on Concentration Requirements Tab)  320 and CS 370 must be completed by the end of Semester 6.  Total Credits  In (See list on the Concentration Requirements Tab)  Total Credits  In (See list on the Concentration Requirements Tab)  Courses for the 8th semester are the remaining courses in the	X X X X Critical X X	X Recommended X	AUCC	3 6-8 3-4 1-3 13-18 Credits 4 4 7