

# MAJOR IN COMPUTER SCIENCE, COMPUTER SCIENCE EDUCATION CONCENTRATION

**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, and STAT courses which are required for graduation.<sup>4</sup>

## Major Completion Map

### Distinctive Requirements for Degree Program:

#### *Freshman*

Semester 1	Critical	Recommended	AUCC	Credits
CO 150 College Composition (GT-CO2)	X		1A	3
First course in Group A, B, or C (See options on Concentration Requirements Tab)	X			3
Diversity, Equity, and Inclusion ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a> )	X		1C	3
Department Approved Science (See list on Concentration Requirements Tab)	X		3A	3
Electives		X		1-5
MATH 124 and MATH 126 may be necessary for some students to fulfill pre-calculus requirements.	X			

#### Total Credits

13-17

Semester 2	Critical	Recommended	AUCC	Credits
CS 201/PHIL 201 Ethical Computing Systems (GT-AH3)	X		3B	3
MATH 156 or 160 Mathematics for Computational Science I (GT-MA1) Calculus for Physical Scientists I (GT-MA1)	X		1B	4
Remaining course(s) from Group A, B, or C (See options on Concentration Requirements Tab)	X			2-6
Department Approved Science with Lab (See list on Concentration Requirements Tab)	X		3A	4
Electives		X		0-2
CO 150 must be completed by the end of Semester 2 with a grade of C or better.	X			

#### Total Credits

13-17

#### *Sophomore*

Semester 3	Critical	Recommended	AUCC	Credits
CS 165 CS2--Data Structures	X			4
CS 220 Discrete Structures and their Applications	X			4
EDUC 275 Schooling in the United States (GT-SS3)	X		3C	3
Select one course from the following:	X			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				
Electives		X		0-2

#### Total Credits

12-16

Semester 4	Critical	Recommended	AUCC	Credits
EDUC 340 Literacy and the Learner	X			3
Select one group from the following:	X			4-5
Group A				
CS 214 Software Development				

CT 301	C++ Fundamentals				
Group B					
CS 253	Software Development with C++				
Select one course from the following:		X			4
CS 250	Computer Systems Foundations				
CS 270	Computer Organization				
Select one course from the following:		X			3-4
DSCI 369	Linear Algebra for Data Science				
MATH 369	Linear Algebra I				
Elective					0-2
CS 165 and CS 220 and CS 270 must be completed by the end of Semester 4.		X			
MATH 156 or MATH 160 and MATH 369 or DSCI 369 must be completed by the end of Semester 4.		X			
<b>Total Credits</b>					<b>14-18</b>
<b>Junior</b>					
<b>Semester 5</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
CS 314	Software Engineering	X		4A,4B	3
CS 370	Operating Systems	X			3
EDUC 331	Educational Technology and Assessment	X			2
Advanced Writing ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing</a> )			X	2	3
Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )			X	3D	3
CS 253 must be completed by the end of Semester 5.		X			
<b>Total Credits</b>					<b>14</b>
<b>Semester 6</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
CS 320	Algorithms--Theory and Practice	X			3
EDUC 350	Instruction I-Individualization/Management	X			3
EDUC 386	Practicum-Instruction I	X			1
Two CS courses numbered 300- or above, excluding 380-399 and 480-499		X			6-8
One CS course numbered 400- or above, excluding 480-499		X			3-4
CS 314 and CS 320 and CS 370 must be completed by the end of Semester 6.		X			
<b>Total Credits</b>					<b>16-19</b>
<b>Senior</b>					
<b>Semester 7</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
EDCT 465	Methods and Materials in Technology Education	X			3
EDUC 450	Instruction II-Standards and Assessment	X			4
EDUC 486E	Practicum: Instruction II	X			1
Two CS Education Standards Courses (See CS Education Standards Course List on Concentration Requirements tab)		X			7-8
<b>Total Credits</b>					<b>15-16</b>
<b>Semester 8</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
EDCT 485	Student Teaching	X		4A,4B,4C	11
EDUC 493A	Seminar: Professional Relations	X			1
Electives			X		0-3
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
<b>Total Credits</b>					<b>12-15</b>
<b>Program Total Credits:</b>					<b>120</b>