

MAJOR IN COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING 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.

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 from Group A, B, or C (See options in Concentration Requirements Tab)	X			2-4
Department Approved Science (See list on Concentration Requirements Tab)	X		3A	3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)	X		1C	3
Electives		X		2-4
MATH 124 and MATH 126 may be necessary for some students to fulfill pre-calculus requirements.	X			

Total Credits

15

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 in Concentration Requirements Tab)	X			2-7
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

15

Sophomore

Semester 3	Critical	Recommended	AUCC	Credits
CS 165 CS2--Data Structures	X			4
CS 220 Discrete Structures and their Applications	X			4
Select one course from the following:	X			3-4
DSCI 369 Linear Algebra for Data Science				
MATH 369 Linear Algebra I				
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		X	3D	3

Total Credits

14

Semester 4	Critical	Recommended	AUCC	Credits
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:					4
CS 250	Computer Systems Foundations				
CS 270	Computer Organization				
MATH 256 or 161	Mathematics for Computational Science II Calculus for Physical Scientists II (GT-MA1)		X		4
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		0-3
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			
Total Credits					16
Junior					
Semester 5		Critical	Recommended	AUCC	Credits
CS 320	Algorithms--Theory and Practice	X			3
CS 370	Operating Systems	X			3
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)			X	2	3
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)			X	3C	3
Electives			X		0-3
CS 253 must be completed by the end of Semester 5.		X			
Total Credits					15
Semester 6		Critical	Recommended	AUCC	Credits
CS 314	Software Engineering	X			3
CS 345	Machine Learning Foundations and Practice	X			3
One CS course numbered 300- or above, excluding 380-399 and 480-499		X			3-4
Technical Electives (See list on Concentration Requirements Tab)		X			6-8
CS 314 and CS 320 and CS 370 must be completed by the end of Semester 6.		X			
Total Credits					15
Senior					
Semester 7		Critical	Recommended	AUCC	Credits
Capstone Course (See list on Concentration Requirements tab)		X		4C	4
Systems Elective (See list on Concentration Requirements tab)		X			4
Electives			X		7
At least 2 Upper-Division CS classes must be completed by the end of Semester 7.		X			
Total Credits					15
Semester 8		Critical	Recommended	AUCC	Credits
Capstone Course (See list on Concentration Requirements tab)		X			4
Additional Computer Science Course (See list on Concentration Requirements tab)		X			4
Electives			X		7
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
Total Credits					15
Program Total Credits:					120