MAJOR IN COMPUTER SCIENCE, COMPUTING FOR CREATIVES CONCENTRATION

Requirements
Effective Fall 2024

A minimum grade of C (2.000) is required in CO 150 and in all CS, DSCI, MATH, STAT and IDEA courses which are required for graduation.

Freshman

		AUCC	Credits
CO 150	College Composition (GT-CO2)	1A	3
CS 201/PHIL 201	Ethical Computing Systems (GT-AH3)	3B	3
MATH 156 or 160[1]	Mathematics for Computational Science I (GT-MA1) Calculus for Physical Scientists I (GT-MA1)	1B	4
Select one group from the following:[2]			4-7
Group A			
CS 150A or 150B	Culture and Coding: Java (GT-AH3) Culture and Coding: Python (GT-AH3)	3B	
CS 162 or 164	CS1--Introduction to Java Programming CS1--Computational Thinking with Java		
Group B			
CS 152	Python for STEM		
CS 162 or 164	CS1--Introduction to Java Programming CS1--Computational Thinking with Java		
Group C			
CS 163	CS1---No Prior Programming Experience		
Select at least two courses totaling a minimum of 7 credits from the following (one course must be or include the sequenced laboratory):			7
AA 100 & AA 101	Introduction to Astronomy (GT-SC2)	3A	
ANTH 120 & ANTH 121	Human Origins and Variation (GT-SC2)	3A	
BZ 110 & BZ 111	Principles of Animal Biology (GT-SC2)	3A	
BZ 120	Principles of Plant Biology (GT-SC1)	3A	
CHEM 107 & CHEM 108	Fundamentals of Chemistry (GT-SC2)	3A	
CHEM 111 & CHEM 112	General Chemistry I (GT-SC2)	3A	
GEOL 120 & GEOL 121	Geology and Society (GT-SC2)	3A	
GEOL 122 & GEOL 121	Geoscience--Climate and Environmental Change (GT-SC2)	3A	
GEOL 124 & GEOL 121	Earth Resources and Sustainability (GT-SC2)	3A	
GEOL 150	Dynamic Earth (GT-SC2)	3A	
HONR 292A	Honors Seminar: Knowing in the Sciences	3A	
LIFE 102	Attributes of Living Systems (GT-SC1)	3A	
LIFE 103	Biology of Organisms-Animals and Plants (GT-SC1)	3A	

LIFE 201A	Introductory Genetics: Applied/Population/Conservation/Ecological (GT-SC2)	3A	
LIFE 201B	Introductory Genetics: Molecular/Immunological/Developmental (GT-SC2)	3A	
LIFE 220/LAND 220	Fundamentals of Ecology (GT-SC2)	3A	
NR 150	Oceanography (GT-SC2)	3A	
PH 121	General Physics I (GT-SC1)	3A	
PH 122	General Physics II (GT-SC1)	3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	
PH 142	Physics for Scientists and Engineers II (GT-SC1)	3A	
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
Electives[3]			3-6
	Total Credits		**30**

Sophomore

CS 165	CS2--Data Structures		4
CS 220	Discrete Structures and their Applications		4
IDEA 210	Introduction to Design Thinking (GT-AH1)	3B	3
Select one group from the following:			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:			2-4
DSCI 369	Linear Algebra for Data Science		
MATH 269	Geometric Introduction to Linear Algebra		
MATH 369	Linear Algebra I		
Select one course from the following:			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		
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		3C	3
Electives			0-5
	Total Credits		**29**

Junior

CS 250	Computer Systems Foundations		4
CS 314	Software Engineering	4A,4B	3
CS 320	Algorithms--Theory and Practice		3
CS 345	Machine Learning Foundations and Practice		3
CS course numbered 300- or above, excluding 386-399 and 486-499			3-4
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)		2	3
Electives			10-11
	Total Credits		**30**

Senior

Capstone Course - Select one course from the following:			4

CS 462	Engaging in Virtual Worlds	4C	
CS 464	Principles of Human-Computer Interaction	4C	
Design Thinking - Select a minimum of nine credits from the following courses:			9
IDEA 310H/CS 310H	Design Thinking Toolbox: Mixed Reality Design		
IDEA 310L	Design Thinking Toolbox : Creating Things That Think		
IDEA 310O	Design Thinking Toolbox: Digital Interaction and Game Design		
IDEA 310Q	Design Thinking Toolbox: 3D Animation and Storytelling		
IDEA 450	Design Thinking Collaborative		
IDEA 455/MGT 455	Designing for Defense		
Two CS courses numbered 400- or above, excluding 486-499			8
Electives[4]			10
	Total Credits		**31**
	Program Total Credits:		**120**

[1] MATH 156 recommended for computer science majors who do not already have MATH 160 credit.

[2] Recommended sequence for most incoming students is Group A: CS 150B to CS 164.

[3] CS 192 or other seminar course is a recommended elective for incoming first semester students.

[4] Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).