College of Computer, Mathematical and Natural Sciences

Computer Science - Distributive Areas and Electives Effective Fall 2024

Area 1: Systems	Course	Credits
Computer Systems Architecture	CMSC 411	3
Operating Systems	CMSC 412	4
Computer and Network Security	CMSC 414	3
Introduction to Parallel Computing	CMSC 416	3
Computer Networks	CMSC 417	3
Cloud Computing (Fall 2024)	CMSC 498B	3
Blockchains, Applied Cryptography, and Cryptocurrency (Spring 2024)	CMSC 498C	3
Real World Computer Security (Fall 2022)	CMSC 498I	3
Big Data Systems (Spring 2018/Spring 2019)	CMSC 498K	3
Intro to Software-defined Radio and Wireless Communications (Fall 2018/Fall 2019)	CMSC 498X	3
Introduction to Parallel Computing (Fall 2020)	CMSC 498X	3

Area 2: Information Processing	Course	Credits
Data Structures	CMSC 420	3
Introduction to Artificial Intelligence	CMSC 421	3
Introduction to Machine Learning	CMSC 422	3
Bioinformatic Algorithms, Databases and Tools	CMSC 423	3
Database Design	CMSC 424	3
Computer Vision	CMSC 426	3
Computer Graphics	CMSC 427	3
Introduction to Natural Language Processing	CMSC 470	3
Introduction to Data Visualization	CMSC 471	3
Introduction to Deep Learning	CMSC 472	3
Robotics (Fall 2023)	CMSC 498E	3
Advances in XR (Spring 2022)	CMSC 498F	3
Advanced Topics in Machine Learning (Fall 2018)	CMSC 498V	3
Statistical Inference and Machine Learning Methods for Genomics Data (Spring 2024)	CMSC 498Y	3
Differentiable Programming (Fall 2023)	CMSC 498Z	3

Area 3: Software Engineering and Programming Languages	Course	Credits

Area 4: Theory	Course	Credits
Design and Analysis of Computer Algorithms	CMSC 451	3
Elementary Theory of Computation	CMSC 452	3
Algorithms for Data Science	CMSC 454	3
Cryptology	CMSC 456	3
Introduction to Quantum Computing	CMSC 457	3
Introduction to Computational Game Theory	CMSC 474	3

Area 5: Numerical Analysis	Course	Credits
Computational Methods	CMSC460	3
Introduction to Numerical Analysis	CMSC466	3

Upper Level Electives	Course	Credits
Introduction to Data Science	CMSC320	3
Web Application Development with JavaScript	CMSC335	3
Student Initiated Courses (STICs)	CMSC388/9	1-2
Teaching Techniques for Computer Science (TAs Only)	CMSC395	1
Computer Science Honors Seminar (Dept Honors Only)	CMSC396H	1
Algorithms for Geospatial Computing	CMSC401	3
Game Programming	CMSC425	3
Capstone in Machine Learning	CMSC473	3
Combinatorics and Graph Theory	CMSC475	3
Robotics and Perception	CMSC476	3
Quantum Boot Camp	CMSC488A	1
Special Topics in CS (courses not otherwise listed in a distributive area)	CMSC498	1-3
Independent Study	CMSC498A	1-3
Independent Undergraduate Research	CMSC499A	1-3

Introduction to Compilers	CMSC 430	3
Programming Language Technologies and Paradigms	CMSC 433	3
Introduction to Human-Computer Interaction	CMSC 434	3
Software Engineering	CMSC 435	3
Programming Handheld Systems	CMSC 436	3
Introduction to Data Visualization	CMSC 471	3

College of Computer, Mathematical and Natural Sciences
Computer Science - General Track Effective Fall 2024
This is a generalized academic plan, not an official audit

Year 1	Fall		
	Course	Credit	Grade
Gateway & Benchmark 1 Requirements: CMSC131, CMSC132, and MATH140 must be completed with a C- or higher by 45 credits (AP/IB credits excluded)	CMSC131 or CMSC141	4	
	MATH140 (FSMA, FSAR)	4	
	ENGL101 (FSAW)	3	
	Oral Comm (FSOC)	3	
	CMSC100	1	
	Total	15	

	Spring		
	Course	Credit	Grade
	CMSC132 or CMSC142	4	
	MATH141	4	
	Natural Science w/ Lab (DSNL)	4	
	History & Social Science (DSHS)*	3	
	Total	15	

Year 2	Fall		
	Course	Credit	Grade
Benchmark 2 Requirements: CMSC330, CMSC351, and MATH or STAT must be completed with a C- or higher by 75 credits (AP/IB credits excluded)	CMSC216	4	
	CMSC250	4	
	MATH/STAT/AMSC	3 or 4	
	Scholarship in Practice (DSSP)*	3	
	Total	14 or 15	

	Spring		
	Course	Credit	Grade
	CMSC330	3	
	CMSC351	3	
	STAT4XX	3	
	Natural Science (DSNS)	3	
	Humanities (DSHU)*	3	
	Total	15	

Year 3	Fall		
	Course	Credit	Grade
	CMSC4XX	3	
	CMSC4XX	3	
	History & Social Sciences (DSHS)*	3	
	Humanities (DSHU)*	3	
	Big Question (SCIS)	3	
	Total	15	

	Spring		
	Course	Credit	Grade
	CMSC4XX	3	
	CMSC4XX	3	
	ENGL39X (FSPW)**	3	
	Scholarship in Practice (DSSP)*	3	
	Big Question (SCIS)	3	
	Total	15	

Year 4	Fall		
	Course	Credit	Grade
	CMSC4XX	3	
	CMSC Elective	3	
	UL Concentration	3	
	UL Concentration	3	
	Plural Societies (DVUP)*	3	
	Total	15	

	Spring		
	Course	Credit	Grade
	CMSC Elective	3	
	UL Concentration	3	
	UL Concentration	3	
	Plural Societies (DVUP) or Cultural Competence (DVCC)*	3	
	Elective	3 or 4	
	Total	15 or 16	

*All students must complete two Distributive Studies courses that are approved for Big Question courses. The Understanding Plural Societies (UP) and Cultural Competence (CC) courses may also fulfill Distributive Studies categories.

**Students may take any Professional Writing course to fulfill this requirement.