

Computer Science – Bachelor of Science

General Education Requirements

Requirement	Course	Credits	Grade
AW: Academic Writing	ENGL 101	3	
PW: Professional Writing	ENGL 39X	3	
OC: Oral Communication		3	
MA: Math (satisfied in the major)			
AR: Analytic Reasoning (satisfied in the major)			
NL: Natural Science (with lab)		4	
NS or NL: Natural Science (with or without lab)		3 or 4	
HU: Humanities		3	
HU: Humanities		3	
HS: History and Social Sciences		3	
HS: History and Social Sciences		3	
SP: Scholarship in Practice (In or outside the major)		3	
SP: Scholarship in Practice (Outside the major)		3	
* IS: I-Series		0 or 3	
* IS: I-Series		0 or 3	
* UP: Diversity		0 or 3	
* UP or CC: Diversity		0-3	
* Diversity and I-Series courses can easily overlap with other General Education Requirements.			

Upper Level Concentration

Students must take at least 12 credits in the SAME DISCIPLINE outside of Computer Science at the 300- or 400-level. No course in or cross-listed with CMSC can be counted. An overall 2.0 average must be earned in these courses. Each course must be worth a minimum of 3 credits. Students who are pursuing a minor or a second major can use those credits in this area.

Requirement	Course	Credits	Grade
Upper Level Concentration 1			
Upper Level Concentration 2			
Upper Level Concentration 3			
Upper Level Concentration 4			

Elective Credits

Students must take enough elective courses to reach the total number of 120 credits required for graduation.

Requirement	Course	Credits	Grade
Elective			
Elective			
Elective			
Elective			

Computer Science Requirements

Grade of "C-" or higher is required in all courses

Required Lower Level Courses (Unless Exempt)

Course	Credits	Grade
MATH 140: Calculus 1	4	
MATH 141: Calculus 2	4	
CMSC 131: Object-Oriented Programming I	4	
CMSC 132: Object-Oriented Programming II	4	
CMSC 216: Introduction to Computer Systems	4	
CMSC 250: Discrete Structures	4	

Additional Required Courses

CMSC 330: Organization of Programming Languages	3	
CMSC 351: Algorithms	3	
* STAT 4XX	3	
* MATH/AMSC/STAT XXX	3 or 4	
* Must have pre-requisite of MATH 141 or higher; cannot be cross-listed with CMSC.		

Upper Level Computer Science Courses

Select 5 courses from at least 3 of the areas below, max of 2 courses per area

Area 1: Systems

CMSC 411: Computer Systems Architecture	3	
CMSC 412: Operating Systems	4	
CMSC 414: Computer and Network Security	3	
CMSC 417: Computer Networks	3	

Area 2: Information Processing

CMSC 420: Data Structures	3	
CMSC 421: Introduction to Artificial Intelligence	3	
CMSC 422: Machine Learning	3	
CMSC 423: Bioinformatic Algorithms, Databases and Tools	3	
CMSC 424: Database Design	3	
CMSC 426: Image Processing	3	
CMSC 427: Computer Graphics	3	

Area 3: Software Engineering and Programming Languages

CMSC 430: Introduction to Compilers	3	
CMSC 433: Programming Language Technologies and Paradigms	3	
CMSC 434: Introduction to Computer Interaction	3	
CMSC 435: Software Engineering	3	
CMSC 436: Programming Handheld Systems	3	

Area 4: Theory

CMSC 451: Design and Analysis of Computer Algorithms	3	
CMSC 452: Elementary Theory of Computation	3	
CMSC 456: Cryptology	3	

Area 5: Numerical Analysis

CMSC 460: Computational Methods or CMSC 466: Introduction to Numerical Analysis	3	

Upper Level Computer Science Electives

Select 6 credits from other CMSC3xx or 4xx courses, including any area courses above

CMSC XXX	3	
CMSC XXX 1 3-credit class or 3 1-credit classes	3	