Volgenau School of Engineering - Computer Science, BS				
	Catalog Year: 2019 - 2020		**Grades**	
Mason Core Requirements (21 credits)	**Course Information**	Credits	Earned	Needed
Written Communication:	ENGH 101 (100)	3		
*Oral Communication	*Satisfied by Major Requirements			
*Quantitative Reasoning	*Satisfied by Major Requirements			
*Information Technology	*Satisfied by Major Requirements			
Arts		3		
Global Understanding		3		
Literature		3		
*Natural Science	*Satisfied by Major Requirements			
Social & Behavioral Science		3		
Western Civ/World History		3		
**Written Communication	ENGH 302 - **Natural Science Section Only	3		
*Capstone/Synthesis	*Satisfied by Major Requirements			
Major Requirements (94 credits) Students must earn a C or better in any course intended to satisfy a prerequisite for a computer science course. Computer science majors may not use more than one course with grade of C- or lower toward department requirements				
Computer Science Core Requirements (53 credits)		Credits	Earned	Needed
CS 110	Essentials of Computer Science	3		
CS 112	Introduction to Computer Programming	4		
CS 211	Object-Oriented Programming	3		
CS 262	Introduction to Low-Level Programming	3		
CS 306	Synthesis of Ethics and Law for the Computing Professional	3		
CS 310	Data Structures	3		
CS 321	Software Engineering	3		
CS 330	Formal Methods and Models	3		
CS 367	Computer Systems and Programming	4		
CS 471	Operating Systems	3		
CS 483	Analysis of Algorithms	3		
Senior CS Course: Select one from the following: CS 455, 468, 475		3		
Senior CS Elective: Select four from the following: CS 425, 440, 450, 451, 455, 463, 465, 468, 469, 475, 472, 477, 480, 482, 484, 485, 490, 491, 499; MATH 446 or OR 481		15		
Math, Statistics Requirements (20 credits)				
MATH 113	Analytic Geometry and Calculus I	4		
MATH 114	Analytic Geometry and Calculus II	4		
MATH 125	Discrete Mathematics I	3		
MATH 203	Linear Algebra	3		
MATH 213	Analytic Geometry and Calculus III	3		
STAT 344	Probability and Statistics for Engineers and Scientists I	3		
Additional Supporting Coursework (21 credits)				
CS Related Course (6 credits): Select two from: STAT 354; OR 335, 441, 442; ECE 301, 331, 332, 350, 446, 447, 511; SWE 432, 437, 443; SYST 470; PHIL 371, 376; ENGH 388; Any MATH or CS above 300 (except MATH 351)		6		
CS Elective #1:				
CS Elective #2:				
COMM 100 or 101	Public Speaking or Fundamentals of Communication	3		
Natural Science (12 credits): Must include a two-course sequence with laboratories		12		
BIOL 103 and 106&107	Introductory Biology I & II			
CHEM 211/213 and 212/214	General Chemistry I & II			
GEOL 101 and 102	Introductory Geology I & II			
PHYS 160/161 and 260/261	University Physics I & II			
Degree Notes				
Approximately 8 credits of elective courses to bring the degree total to 120 with 45 credits at the 300/400 level				
Advisor Notes:				

GEORGE MASON UNIVERSITY | Volgenau School of Engineering

COMPUTER SCIENCE, B.S.

2019 - 2020

The objectives of the B.S. program in Computer Science relate to the abilities of the graduates several years after graduation. The objectives include:

- Foundation for successful careers in industry: Graduates of the program will have a broad understanding of the fundamental concepts, methodologies and tools, and applications of computer science. They will have the educational foundation that leads to successful careers in the computing industry.
- Foundation for graduate study: Graduates of the program will have the academic preparation for successful completion of rigorous graduate programs.
- Professional preparation: Graduates will have effective written and oral communication skills, and be able to work collaboratively with others in a professional and ethical manner.

This bachelor's degree program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

Degree Requirements

Undergraduate degree work in computer science provides students with essential background for studying the design and implementation of computer system software, computer architecture, and computer software applications for science and business. The program emphasizes both computer system fundamentals and computer software applications. Required areas of study include data structures, analysis of algorithms, low-level programming, computer architecture and language translation, ethics and law for the computing professional, and software design and development. Evolving software technologies are a major concern. The BS in Computer Science program also requires 12 credits of natural science and 20 credits in mathematics and statistics, including calculus, discrete mathematics, linear algebra, and applied probability theory.

COMPUTER SCIENCE, B.S.

2019-2020 Sample Schedule for Undergraduate Computer Science majors

First Semester	
CS 110 Essentials of Computer Science	3
CS 112 Intro to Computer Programming	4
MATH 113 Analytic Geometry and Calculus I	4
Mason Core*	3
Total	**14**

Second Semester	
CS 211 Object-Oriented	3
MATH 114 Analytic Geometry and Calculus II	4
Natural Science with lab	4
Mason Core*	3
Total	**14**

Third Semester	
CS 262 Intro Low-level Programming	3
Natural Science with lab	4
MATH 213 Calculus III	3
Mason Core*	3
Mason Core*	3
Total	**16**

Fourth Semester	
CS 310 Data Structures	3
Natural Science with lab	4
MATH 125 Discrete Mathematics	3
Elective	3
Mason Core*	3
Total	**16**

Fifth Semester	
CS 330 Formal Methods & Models	3
CS 367 Computer Systems & Programming	4
MATH 203 Linear Algebra	3
ENGH 302 (Natural Science section) [MC]***	3
Mason Core*	3
Total	**16**

Sixth Semester	
CS 321 Software Engineering	3
CS 483 Analysis of Algorithms	3
STAT 344 Probability and Statistics	3
CS-Related Elective	3
Mason Core*	3
Total	**15**

Seventh Semester	
CS 306 Synthesis - Ethics & Law [MC]	3
CS 471 - Operating Systems	3
Senior CS Course	3
Senior CS Course	3
Elective	3
Total	**15**

Eighth Semester	
Senior CS course	3
Senior CS course	3
Senior CS course	3
CS-related Elective	3
Elective	2
Total	**14**

* http://catalog.gmu.edu/mason-core Mason Core Categories: One course from each: ENGH101, Oral Communication, Arts, Global Understanding, Literature, Western Civilization/World History, and Social Behavioral Science.

*** ENGH 101 and Mason Core-Literature must be completed before taking ENGH 302.

CS students do not need to seek out IT and Quantitative Reasoning categories as they are built into the major curriculum.

For more information about this program please contact:

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