GEORGE MASON UNIVERSITY
THE VOLGENAU SCHOOL OF ENGINEERING
B.S. DEGREE IN COMPUTER SCIENCE (4300 The Engineering Building, 703-993-1530)
http://cs.gmu.edu/programs/undergraduate/#BSCS
2018 - 2019 CATALOG

	Department(s) & Course #(s)	Completed/ Grade(s)	Needed

MASON CORE REQUIREMENTS (24)

a. Written Communication: ENGH 101 (100), ENGH 302 Natural Science Section only (C or better) (3,3)
b. Oral Communication: COMM 100 (3)
c. Quantitative Reasoning (satisfied by completion of major requirements)
d. Literature (3)
e. Arts (3)
f. Western Civilization (HIST 100, 125, or acceptable transfer course)(3)
g. Social & Behavioral Science (3)
h. Natural Science (satisfied by completion of major requirements)
i. Global Understanding (3)
j. Information Technology (satisfied by completion of major requirements)
k. Synthesis (**satisfied by CS 306**)

Go to: http://catalog.gmu.edu/mason-core/ to link to information on Mason Core requirements.

MAJOR REQUIREMENTS (88 credit hours required)

Computer Science Core (35 credits)

a. CS 110 (3)
b. CS 112, CS 211 (4,3)
c. CS 262, CS 306 (writing intensive course) (1,3)
d. CS 310, CS 321 (writing intensive course) (3,3)
e. CS 330, CS 367 (3,3)
f. CS 471, CS 483 (3,3)

Senior Computer Science (15 credits)

g. One of the following: CS 455, CS 468, CS 475 (circle choice) (3)
h. Any four of the following: CS 425, 440, 450, 451, 455, 463, 465, 468, 469, 475, 477, 480, 482, 484, 485, 490, 491, 499; MATH 446 **or** OR 481 (circle choices) (12)
i. **Twenty hours of Mathematics and Statistics course work (20)**
   1. MATH 113, 114 (4,4)
   2. MATH 125, 213 (3,3)
   3. MATH 203 (3)
   4. STAT 344 (3)
j. **Six hours of Computer Science related courses chosen from the following**: (circle choices) (6)
   OR 335 (3), 441 (3), 442 (3); ECE 301 (3), 431 (3), 447 (4), 450 (3), 511 (3); PHIL 371 (3), 376 (3); any MATH or CS course numbered above 300 (except MATH 351); SYST 371 (3), 470 (3); STAT 354 (3); SWE 432 (3), 437 (3), 443 (3); ENGH 388 (3) (circle choices)
k. **Twelve hours in natural sciences courses intended for scientists and engineers**; **Include one of these sequences:** BIOL 103 (4), 106/107 (4); CHEM 211 (3) & 213 (1), 212 (3) & 214 (1); GEOL 101 (4), 102 (4); PHYS 160 (3) & 161(1), 260 (3) & 261 (1) (circle choices) (12)

Students must earn a C or better in any course intended to satisfy a prerequisite for a computer science course.
CS majors may not use more than one course with grade of C- or lower toward department requirements.

GENERAL ELECTIVES (8) (List courses) At most 3 credits of 100-level RECR coursework may be taken to satisfy the degree requirements of those VSE programs that allow general electives.

MINIMUM 120 HOURS (including Minimum 45 UPPER DIVISION HOURS) to GRADUATE

This planning form is intended to be used in consultation with your academic advisor and reflects the requirements for the 2018 - 2019 Catalog; the University Catalog is the official reference for program requirements.

Volgenau School of Engineering

COMPUTER SCIENCE, B.S.

2018 - 2019

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.

2018-2019 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
COMM 100 Public Speaking [MC]	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, 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, Quantitative Reasoning, and Oral Communication categories as they are built into the major curriculum.

For more information about this program please contact:

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