



Volgenau School of Engineering

COMPUTER SCIENCE, B.S. 2017- 2018

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>.

Admission Requirements

Admission to George Mason is competitive. Each candidate who presents sufficient admission qualifications is reviewed in the context of other qualified applicants. An offer of admission is valid only for the semester for which the student applied. Application for undergraduate admission should be made to the Office of Admissions. Please consult <http://admissions.gmu.edu> for additional information.

Freshman Admission Requirements

The following factors are considered when reviewing applications for admission:

- Cumulative high school grade point average for course work completed in grades 9 through 12.
- Level of difficulty of course work elected throughout the high school years, particularly in English, Mathematics, laboratory science, social studies, and foreign language.
- Scores from Scholastic Aptitude Test I (SAT I) or the American College Test (ACT).
- Test of English as a Foreign Language (TOEFL) where applicable.
- Essays, list of extracurricular activities, and teacher and guidance counselor recommendations.

Transfer Admission Requirements

The university accepts qualified students who wish to transfer from other colleges. Transfer applicants must submit official transcripts from each collegiate institution attended. Transfer applicants with fewer than 30 semester hours of transferable credit must also submit a copy of their secondary school record and test scores. All non-native English speakers are also required to submit a TOEFL or IELTS score or acceptable grades (C or better) in at least two English composition or literature classes taken at a regionally accredited U.S. college or university.

Undecided Students

Students who are undecided but interested in pursuing a career in Computer Science should seek the advice of the Volgenau School of Engineering Undergraduate Advising Coordinator. Sample schedules of the majors within the Volgenau School of Engineering are also available from each individual department.

Change of Major

Students requesting a change of major to computer science must have a GPA of at least 2.75 in all computer science and math courses and successfully completed CS 112 or 211 and MATH 113, 114, or 125, with a "B" or better.

Advanced Placement, Credit by Exam

A score of 4 on the Advanced Placement (AP) computer science exam qualifies the student for credit in CS 112. A score of 4 on the International Baccalaureate (IB) computer science exam qualifies students for credit in CS 112, and a score of 5 or more qualifies students for credit in CS 211.

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.

A sample schedule that fulfills degree requirements for a Bachelor of Science in Computer Science degree is shown below.

Sample Schedule for B.S. in Computer Science

First Semester		Second Semester	
CS 110 Essentials of Computer Science	3	CS 211 Object-Oriented Programming	3
CS 112 Intro Computer Programming	4	MATH 114 Calculus II	4
MATH 113 Calculus I	4	Natural Science with lab	4
Mason Core*	3	Mason Core*	3
Total Hours	14	Total Hours	14
Third Semester		Fourth Semester	
CS 262 Intro Low-level Programming	3	CS 310 Data Structures	3
Natural Science with lab	4	Natural Science with lab	4
MATH 213 Calculus III	3	MATH 125 Discrete Mathematics	3
COMM 100 Public Speaking [MC]	3	Elective	3
Mason Core*	3	Mason Core*	3
Total Hours	16	Total Hours	16
Fifth Semester		Sixth Semester	
CS 330 Formal Methods & Models	3	CS 321 Software Engineering	3
CS 367 Computer Systems & Programming	4	CS 483 Analysis of Algorithms	3
MATH 203 Linear Algebra	3	STAT 344 Probability and Statistics	3
ENGH 302 (Natural Science section) [MC]***	3	CS-Related Elective	3
Mason Core*	3	Mason Core*	3
Total Hours	16	Total Hours	15
Seventh Semester		Eighth Semester	
CS 306 Synthesis - Ethics & Law [MC]	3	Senior CS course	3
CS 471 - Operating Systems	3	Senior CS course	3
Senior CS Course	3	Senior CS course	3
Senior CS Course	3	CS-related Elective	3
Elective	3	Elective	2
Total Hours	15	Total Hours	14

* <http://catalog.gmu.edu/mason-core> Mason Core Categories: One course from each: ENGH101, Arts, Global Understanding, Literature, Western Civilization/ World History, Social Behavioral Science. CS students do not need to seek out Math, and IT categories as they are built into the major curriculum.

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

We invite requests for additional information. Please contact:

Computer Science Department
Volgenau School of Engineering
George Mason University, Mail Stop 4A5
Nguyen Engineering Building, Suite 4300
Fairfax, VA 22030-4444

Phone: (703) 993-1530
Fax: (703) 993-1710
E-mail: csug@gmu.edu
Internet: <http://cs.gmu.edu>