BACHELOR OF ARTS WITH A MAJOR IN COMPUTER SCIENCE (STEM)

The bachelor of arts (BA) program in computer science is designed for students who wish to combine computer science with a second major or with a set of secondary fields (minors), typically in natural science, liberal arts, or business. The program provides a foundation in computer science, along with lots of room in the curriculum to select courses in other disciplines. Students are required to elect a second major or two minors. As part of a residency requirement, all computer science majors must take a minimum of 18 upper-level credits in computer science at GW. These credits include courses that might be taken as part of an approved study abroad program.

For those who want to combine core skills in computer science with another major, the BA program is the right choice. The BS in computer science program may be more appropriate for students who wish to have more depth and focus in computer science.

Students in the bachelor of arts program work with their advisors to select technical electives. Detailed information on the curriculum and elective courses is available in this Bulletin (p. 1), which is the definitive statement of degree requirements for students. Degree requirements in the current Bulletin apply to students matriculating in the current academic year. Bulletins applicable to students who matriculated in prior academic years are archived (http://bulletin.gwu.edu/archives/).

Double major

Non-SEAS students interested in pursuing the BA in computer science as a double major should see Double Major under SEAS Regulations (http://bulletin.gwu.edu/engineering-applied-science/#seasregulationstext) in this Bulletin.

This is a STEM designated program.

Visit the program website (https://www.cs.seas.gwu.edu/bachelor-arts-program/) for more information.

ADMISSIONS

For more information on the admission process, please visit the Office of Undergraduate Admissions website. Applications may be submitted via the Common Application.

Supporting documents not submitted online should be mailed to:
Office of Undergraduate Admissions
The George Washington University
800 21st Street NW, Suite 100
Washington DC 20052

Contact for questions:
gwadm@gwu.edu or 202-994-6040

REQUIREMENTS

Residency requirement—As part of a residency requirement, all BA in computer science majors, whether primary majors within SEAS or secondary majors in another school, must take a minimum of 18 credits in upper-level Computer Science (CSCI) courses at GW. Credits earned in an approved study abroad program count toward this requirement.

Second major or two minors requirement—All BA in computer science majors must declare and complete either a second major or two minors in another academic department.

Recommended program of study

Code	Title	Credits
First semester		**14**
CSCI 1010	Computer Science Orientation	1
CSCI 1111	Introduction to Software Development	3
MATH 1231	Single-Variable Calculus I	3
or MATH 1221	Calculus with Precalculus II	
SEAS 1001	Engineering Orientation	1
Humanities elective [2,6]		3
Social sciences elective [2,6]		3
Second semester		**16**
UW 1020	University Writing [1]	4
CSCI 1112	Algorithms and Data Structures	3
CSCI 1311	Discrete Structures I	3
Social sciences elective [2,6]		3
Second major or minor elective [4]		3
Third semester		**15**
CSCI 2113	Software Engineering	3
Natural or physical sciences with a lab elective [6]		3
Statistics requirement [3]		3
Humanities elective [2,6]		3
Second major or minor elective [4]		3
Fourth semester		**15**
CSCI 2441	Database Systems and Team Projects	3
CSCI 2460	Introduction to Computer Systems	3
Arts elective [2,7]		3
Humanities elective [2,6]		3

Second major or minor elective [4]	3
Fifth semester	**15**
Advanced computer science elective [5]	3
Natural or physical sciences with a lab elective [6]	3
Global or cross-cultural elective [2, 7]	3
Humanities elective [2, 6]	3
Second major or minor elective [4]	3
Sixth semester	**16**
CSCI 3212 Algorithms	4
Global or cross-cultural elective [2, 7]	3
Second major or minor elective [4]	3
Second major or minor elective [4]	3
Second major or minor elective [4]	3
Seventh semester	**15**
Advanced computer science elective [5]	3
Advanced computer science elective [5]	3
Second major or minor elective [4]	3
Second major or minor elective [4]	3
Second major or minor elective [4]	3
Eighth semester	**15**
Advanced computer science elective [5]	3
Second major or minor elective [4]	3
General elective [4]	3
General elective [4]	3
General elective [4]	3

[1]Fulfills the University General Education Requirement (http://bulletin.gwu.edu/university-regulations/general-education/) in writing. UW 1020 University Writing must be completed prior to taking any writing course in the major. After successful completion of UW 1020, 6 credits distributed over at least two different Writing in the Disciplines (WID) courses taken in separate semesters are required. (Summer counts as one semester.) WID courses are designated by a "W" appended to the course number.

[2]One selected course must have an approved oral communication component from the University General Education Requirements course list (https://bulletin.gwu.edu/university-regulations/general-education/#text). The course can fulfill both the oral communication requirement and a general education or major elective requirement.

[3]The statistics requirement can be met by taking one of the following courses: APSC 3115 Engineering Analysis III, CSCI 3362 Probability for Computer Science, CSCI 4341 Continuous Algorithms, CSCI 6362 Probability for Computer Science, DNSC 1001 Business Analytics I: Statistics for Descriptive and Predictive Analytics, STAT 1051 Introduction to Business and Economic Statistics, or STAT 1053 Introduction to Statistics in Social Science.

[4]General electives and electives counted toward the second major or minor: Students must complete 42 credits, which can be counted toward the second major or minor or as general electives. At least 36 credits must be taken in courses outside the computer science major. All courses used to fulfill this requirement must have the explicit, documented approval of the faculty advisor, even when such courses are required for a minor or have transferred to the University as credit by examination (e.g., Advanced Placement (AP) or International Baccalaureate (IB) credit). Courses must meet the following guidelines:

a. Courses can be combined toward the required minimum of 42 credits. Lifestyle, Sport, and Physical Activity (LSPA) courses do not count toward SEAS degree requirements.

b. Variable topics (typically CSCI 1099 Variable Topics) and special topics courses outside of Computer Science require advisor approval.

c. Credit cannot be earned for internships.

d. No more than one 3-credit research course (e.g. CSCI 3908 Research) can be taken in a single semester.

e. Courses from other departments that significantly overlap with, or are not as advanced as, the required content for the computer science degree program do not count toward this requirement. Such courses include, but are not limited to, basic programming courses BADM 2301 Management Information Systems Technology, ECON 1001 Principles of Mathematics for Economics, EMSE 4197 Special Topics,ISTM 3119 Introduction to Programming, ISTM 4120 Business Systems Development, ISTM 4121 Database Principles and Applications, ISTM 4123 Business Data Communications, PHYS 1011 General Physics I , PUBH 4201 Practical Computing , PUBH 4202 Bioinformatics Algorithms and Data Structures , STAT 1129 Introduction to Computing, and courses from the Professional Studies-Integrated Information, Science, and Technology (PSIS) and Professional Studies-Cybersecurity Strategy and Information Management (PSCS) programs.

f. CSCI courses numbered below 3000 do not count toward this requirement. Exceptions can be made for students who took such courses prior to transferring into the BA in computer science degree program.

g. Students taking MATH 1220 as a prerequisite for MATH 1221 can count MATH 1220 as a general elective.

h. SEAS has the following requirements for foreign language courses taken to meet general electives, humanities, or social sciences requirements:

- The foreign language studied cannot be a native language of the student unless the courses taken are literature courses.
- If a student has previously studied the language they must first take a placement exam given by the language department and enroll in a course recommended by that department.

[5]Advanced computer science elective requirement. All students in the BA in computer science program must take four technical courses (for a minimum of 12 credits) in computer science courses numbered 2400 and above. Of these courses, at least two (for a minimum of 6 credits) must be taken at the 4000 level or above. CSCI 4243 Capstone Design Project I, CSCI 4243W Capstone Design Project I, and CSCI 4244 Capstone Design Project II cannot be counted toward this requirement. The faculty advisor's documented approval is required before these courses can be applied toward degree completion.

[6]For each of the following elective types, a course in the corresponding category should be selected from the list of approved University General Education (http://bulletin.gwu.edu/university-regulations/general-education/) courses:

- The humanities elective must be selected from the critical thinking in the humanities category.
- The social science elective must be selected from the critical thinking, quantitative reasoning, or scientific reasoning in the social sciences category.
- The natural or physical sciences with a lab elective must be selected from the scientific reasoning in the natural and/or physical lab sciences category.

[7]For each of the elective types listed below a course in the corresponding category should be selected from the list of approved Columbian College General Education Curriculum (GPAC) (https://advising.columbian.gwu.edu/gpac-course-list/) courses.

- The global or cross-cultural elective must be selected from the global or cross-cultural perspectives GPAC category.
- The arts elective must be selected from the creative or critical thinking in the arts category.

bulletin.gwu.edu/engineering-applied-science/computer-science/combined-ba-ms-computer-science/)
- Dual Bachelor of Arts with a major in computer science and Master of Science in the field of cybersecurity in computer science (http://bulletin.gwu.edu/engineering-applied-science/computer-science/combined-ba-ms-cybersecurity/)

COMBINED PROGRAMS

Combined programs

- Dual Bachelor of Arts with a major in computer science and Master of Science in the field of computer science (http://