

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 are required to declare and complete either a second major or two minors in another academic department.

Recommended program of study

Code	Title	Credits
First semester		15
CSCI 1010	Computer Science Orientation	1
CSCI 1111	Introduction to Software Development	3
SEAS 1001	Engineering Orientation	1
UW 1020	University Writing ¹	4
Mathematics requirement ²		3
Social sciences elective ^{3, 7}		3
Second semester		15
CSCI 1112	Algorithms and Data Structures	3
CSCI 1311	Discrete Structures I	3
General Elective ⁵		3
Natural or physical sciences with a lab elective ^{3, 7}		3
Social sciences elective ^{3, 7}		3
Third semester		15
CSCI 2113	Software Engineering	3
Humanities elective ^{3, 7}		3
Natural or physical sciences with a lab elective ^{3, 7}		3
Second major or minor elective ⁵		3
Statistics requirement course ⁴		3
Fourth semester		15
CSCI 2441W	Database Systems and Team Projects	3
CSCI 2460	Introduction to Computer Systems	3
General elective ⁵		3
Humanities elective ^{3, 7}		3
Second major or minor elective ⁵		3

Fifth semester	15
Advanced CS elective ⁶	3
Arts elective ^{3,8}	3
Second major or minor elective ⁵	3
Second major or minor elective ⁵	3
Second major or minor elective ⁵	3
Sixth semester	16
CSCI 3212	4
Global or cross-cultural elective ^{3,8}	3
Humanities elective ^{3,7}	3
Second major or minor elective ⁵	3
Second major or minor elective ⁵	3
Seventh semester	15
Advanced CS elective ⁶	3
Advanced CS elective ⁶	3
Global or cross-cultural elective ^{3,8}	3
Second major or minor elective ⁵	3
Second major or minor elective ⁵	3
Eighth semester	15
Advanced CS elective ⁶	3
General elective ⁵	3
Humanities elective ^{3,7}	3
Second major or minor elective ⁵	3
Second major or minor elective ⁵	3

¹Course satisfies the University General Education requirement (<http://bulletin.gwu.edu/university-regulations/general-education/>) in writing. UW 1020 must be completed prior to any writing course in the major, including CSCI 2441W. After successful completion of UW 1020, 6 credits distributed over at least two different Writing in the Discipline (WID) courses taken in separate semesters (summer counts as one semester) are required. WID courses are designated by a "W" appended to the course number.

²The mathematics requirement can be met by taking either MATH 1221 or MATH 1231.

³One course selected must have an approved oral communication component, from the University General Education Courses ([https://bulletin.gwu.edu/university-regulations/general-](https://bulletin.gwu.edu/university-regulations/general-education/#text)

[education/#text](https://bulletin.gwu.edu/university-regulations/general-education/#text)) list. This course may fulfill both the oral communication requirement; and a general education/major/elective requirement.

⁴The statistics requirement can be met by taking one of the following courses: APSC 3115, CSCI 3362, CSCI 4341, CSCI 6362, DNSC 1001, STAT 1051, or STAT 1053.

⁵General Electives and electives toward the second major or minor: All students in the BA in computer science program are required to complete 42 credits, which may be counted toward the second major or minor or as general electives. At least 12 of these courses must be taken outside the computer science major. All courses used to fulfill this requirement must have the explicit, documented approval from the faculty adviser, even when such courses are required for a minor or have transferred to the University as Advanced Placement (AP) credit. Classes must meet the following guidelines:

1. Classes that provide any number of credits are allowed, and they can be combined toward the minimum of 24 credits. Note that LSPA classes (<https://publichealth.gwu.edu/departments/exercise-and-nutrition-sciences/lifestyle-sport-and-physical-activity-courses-lspa/>) cannot count toward SEAS degree requirements.
2. Variable Topics (typically 1099) and Special Topics courses outside of Computer Science require advisor approval. Credit cannot be given for internships.
3. Only a single Research class (e.g. CSCI 3908) for up to three credits can be taken a semester.
4. 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 classes and the following: BADM 2301 (<http://bulletin.gwu.edu/search/?P=BADM+2301>), EMSE 4197 (<http://bulletin.gwu.edu/search/?P=EMSE+4197>), ISTM 3119 (<http://bulletin.gwu.edu/search/?P=ISTM+3119>), ISTM 4120 (<http://bulletin.gwu.edu/search/?P=ISTM+4120>), ISTM 4121 (<http://bulletin.gwu.edu/search/?P=ISTM+4121>), ISTM 4123 (<http://bulletin.gwu.edu/search/?P=ISTM+4123>), STAT 1129 (<http://bulletin.gwu.edu/search/?P=STAT+1129>), and classes from the PSIS and PSCS programs.
5. CSCI courses numbered below 3000 may not count toward this requirement. Exceptions may be granted for students who took such courses prior to transferring into a CS BA degree program.
6. Students taking MATH 1220 (<https://bulletin.gwu.edu/search/?P=MATH%201220>) as a prerequisite for MATH 1221 (<https://bulletin.gwu.edu/search/?P=MATH%201221>) may count MATH 1220 (<https://bulletin.gwu.edu/search/?P=MATH%201220>) as a General Elective.

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

- The foreign language studied may not be a native language of the student unless the courses taken are literature courses.
- If a student has studied the language previously, the student must first take a placement test given by the language department and enroll in a course recommended by the respective language department.

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- 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/>)

⁶Advanced CS elective requirement. All students in the BA in computer science program are required to take four technical courses (for a minimum of 12 credits) of computer science courses numbered 3000 and above. Of these courses, at least two (for a minimum of 6 credits) must be at the 4000 level or above. CSCI 4243 (<https://bulletin.gwu.edu/search/?P=CSCI%204243>), CSCI 4243W (<https://bulletin.gwu.edu/search/?P=CSCI%204243W>), CSCI 4244 (<https://bulletin.gwu.edu/search/?P=CSCI%204244>) may not be used toward the advanced CS elective requirement. The faculty advisor's documented approval is required before these courses may be applied toward degree completion.

⁷This course should be selected from the University General Education Courses List (<https://bulletin.gwu.edu/university-regulations/general-education/>). From the University General Education Courses, select the corresponding course type.

- The Humanities elective must be selected from the "Critical thinking in the humanities" list
- The Social Science elective must be selected from the "Critical thinking, quantitative reasoning, or scientific reasoning in the social sciences" list
- The Natural or Physical Sciences with a lab elective must be selected from the "Scientific reasoning in the natural and/or physical lab sciences" list

⁸This course should be selected from the Columbian College General Education Curriculum (G-PAC) (<https://advising.columbian.gwu.edu/gpac-course-list/>). From the G-PAC Course List, select the corresponding course type.

- The Global or Cross-Cultural elective must be selected from the "Global or Cross-Cultural Perspectives" list
- The Arts elective must be selected from the "Creative or Critical Thinking in the Arts" list

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://bulletin.gwu.edu/engineering-applied-science/computer-science/combined-ba-ms-computer-science/>)