

# Joint BA/MS or BS/MS in Computer Science

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Outstanding undergraduates may apply to complete an MS in computer science along with a BA or BS (generalized to "Bx") during their four years at the College. Students must be admitted to the joint MS program. There are three different paths to a Bx/MS: a research-oriented program for computer science majors (Option 1 below), a professionally oriented program for computer science majors (Option 2), and a professionally oriented program for non-majors (Option 3).

Participants in the Bx/MS program must meet the requirements for the BA or BS, complete nine courses for the MS, and, if applicable, a master's project. Students may double-count up to two courses towards both their Bx and MS degrees. By the conclusion of their third year, students must have completed 3900 of the 4200 units of credit required by the College, including all general education requirements.

See <https://www.cs.uchicago.edu/page/department-computer-science-bxms-program-admissions-requirements> for details about the Bx/MS application process.

To be considered for the program, students need to have earned a 3.5 GPA and have completed one of the following:

- one of CMSC 12100, CMSC 15100, or CMSC 16100 and one of CMSC 12200, CMSC 15200, or CMSC 16200 with at least a B+ average in the two, or
- one of CMSC 12100, CMSC 15100, or CMSC 16100 and one of CMSC 27100, CMSC 27130, or CMSC 37110 with at least a B+ average in the two.

The detailed requirements of the three program options follow.

## Bx/MS Option 1: Research-Oriented Computer Science Majors

Option 1 is designed for computer science majors who are interested in research. Students pursuing a Bx with a computer science major currently have to take at least fourteen courses chosen from an approved program, while obtaining an MS requires nine courses. The research-oriented option requires students to take a total of twenty-one courses: twelve that count only towards the Bx degree, seven that count only towards the MS, and two that count towards both the Bx and MS degrees.

The nine courses required for the MS degree under Option 1 are as follows: Discrete Mathematics (CMSC 27100, CMSC 27130, or CMSC 37100); Algorithms (CMSC 27200, CMSC 27230, or CMSC 37000); one systems core course (<http://course-info.cs.uchicago.edu/bxms>); Machine Learning (CMSC 25400, CMSC 35400, or TTIC 31020); Research Practicum (Autumn); Research Practicum (Winter); and three electives. A current list of approved Option 1 electives is available at <http://course-info.cs.uchicago.edu/bxms>.

At most two courses can be drawn from the CMSC 20000-level course list, and at most two courses can be counted towards a student's computer science major and MS degree. Option 1 students are expected to take their electives from the Computer Science Department's CMSC 30000-level offerings and selected TTIC (Toyota Technological Institute at Chicago) offerings.

Option 1 requires the completion of a master's project, as well as an accompanying written report and a public presentation. Master's projects must be overseen by a faculty member and evaluated by a committee of three faculty members, including the student's project advisor.

## Bx/MS Option 2: Professionally Oriented Computer Science Majors

Option 2 is designed for computer science majors who are seeking the opportunity to build upon their foundational skills and take some industry-oriented electives. As with Option 1, computer science majors who are pursuing a joint Bx/MS are required to take a total of twenty-one courses: twelve that count only towards the Bx degree, seven that count only towards the MS, and two that count towards both the Bx and MS degrees.

The nine courses required for the MS degree under Option 2 are as follows: Discrete Mathematics (CMSC 27100, CMSC 27130, or CMSC 37100); Algorithms (CMSC 27200, CMSC 27230 or CMSC 37000); two systems core courses (<http://course-info.cs.uchicago.edu/bxms>); and five electives. A current list of approved Option 2 electives is available at <http://course-info.cs.uchicago.edu/bxms>.

At most two courses can be drawn from the CMSC 20000-level offerings, and at most two courses can be counted towards both a student's computer science major and MS degree.

Option 2 allows students to take electives from the Computer Science Department's CMSC 30000-level and MPCS 50000-level offerings and selected TTIC offerings (see <http://course-info.cs.uchicago.edu/bxms>). With prior approval, Option 2 also allows one course from a graduate program outside of the Computer Science Department.

## Bx/MS Option 3: Professionally Oriented Non-Computer Science Majors

Option 3 is designed for students who are not computer science majors and wish to combine a professionally oriented MS in computer science with their undergraduate major.

Students in this option are expected to complete nine courses, two of which can be also counted towards a student's BA or BS; students wishing to use these courses in their undergraduate major *must obtain approval from their director of undergraduate studies*.

The nine courses required for the MS degree under Option 3 are as follows: Discrete Mathematics (CMSC 27100, CMSC 27130, CMSC 37100, or MPCS 50103) or Core Programming (MPCS 51036, MPCS 51040, or MPCS 51100); Algorithms (CMSC 27200, CMSC 27230, CMSC 37000, or MPCS 55001); three systems core courses (<http://course-info.cs.uchicago.edu/bxms>); and four electives. A current list of approved Option 3 electives is available at <http://course-info.cs.uchicago.edu/bxms>.

At most two courses can be drawn from the CMSC 20000-level offerings.

Option 3 allows students to take electives from the Computer Science Department's CMSC 20000-level, CMSC 30000-level, and MPCS 50000-level offerings and selected TTIC offerings (see <http://course-info.cs.uchicago.edu/bxms>). With prior approval, Option 3 also allows one course from a graduate program outside of the Computer Science Department.





#### Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Trajan.

Times was used instead of Palatino.

The editor may contact Leepfrog for a draft with the correct fonts in place.