

JOINT BA/MS OR BS/MS IN COMPUTATIONAL AND APPLIED MATHEMATICS

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This four-year joint program enables exceptionally well-prepared undergraduate students to complete an MS degree in Computational and Applied Mathematics (CAM) along with a BA or BS degree during their four years at the College. The undergraduate degree does not necessarily have to include a major in Computational and Applied Mathematics.

The program admits a small number of students through a competitive admissions process. The program strongly encourages students who are interested in applying to consult both the departmental adviser for their undergraduate major and their College adviser early in their third year. The application deadline is February 1 of a student's third year for admission to candidacy for an MS in CAM during the fourth year.

To be considered, students should have completed almost all of their undergraduate requirements, including all of their general education and language competence requirements, by the end of their third year.

Participants in the joint BA/MS or BS/MS program must meet the same requirements as students in the master's degree program in CAM. Of the nine courses that are required at the appropriate level, up to three may also meet the requirements of an undergraduate program. Students also have the option of pursuing a master's degree with thesis, which involves writing and defending a master's thesis under the guidance of a CAM adviser.

COURSE REQUIREMENTS

The graduate component of the proposed BA/MS or BS/MS program consists of at least nine courses, as described below. All course programs must be approved with the signatures of the student's graduate program advisers.

Three courses from one of the following tracks (300 units):

These courses correspond to required coursework for students in the CAM PhD program. They are offered every year as three-quarter sequences. Students in the CAM joint master's programs select at least one of the tracks to complete during their degree.

Applied Analysis and Modeling Track

CAAM 31410	Applied Dynamical Systems	100
CAAM 31210	Applied Functional Analysis	100
CAAM 31220	Partial Differential Equations	100
Total Units		300

Computational Mathematics Track

CAAM 30900	Mathematical Computation I: Matrix Computation Course	100
CAAM 31015 or CAAM 31020	Mathematical Computation IIA: Convex Optimization	100
	Mathematical Computation IIB: Nonlinear Optimization	
CAAM 37710	Machine Learning	100
Total Units		300

Three elective courses within the CAM program (300 units)

Students are able to choose three CAM elective courses. These electives can be chosen from the track that they did not pursue above or from other courses offered as part of the CAM graduate programs, chosen in consultation with a student's graduate advisers.

Three additional graduate-level electives related to CAM (300 units)

Students may choose these electives from the above lists or from graduate-level courses related to CAM offered through the Physical Sciences Division, Toyota Technological Institute at Chicago, or the Booth School of Business.

MASTER'S THESIS OPTION

Students may optionally choose to write a master's thesis under the direction of a faculty adviser. Completing this option requires submission of an adviser-approved version of the thesis and the presentation of a public 30-minute master's seminar. Students may ask any member of the Committee on Computational and Applied Mathematics to advise their master's thesis; advising is by mutual agreement between the student and

potential adviser. Students in the joint BA/MS or BS/MS program may complete the thesis option during their three quarters of graduate enrollment.

