THE UNIVERSITY OF CHICAGO | Masters Program in
Computational and Applied Mathematics

2023–2024 MCAM Requirements and Milestones

2023–2024 Course Requirements: The program consists of at least nine graduate-level courses, as described below. All course programs must be approved with the signatures of the student's faculty advisor and the MCAM advisor. Students must register for at least one course each non-summer quarter unless another arrangement has received written approval from the program. This enrollment requirement can be satisfied by 50 units of reading/research credit under the supervision of a faculty member. Students are required to complete the online Responsible Conduct of Research (RCR) training through the CITI program by the end of their first quarter of enrollment.

(I) (300 units) Three courses from one of the following tracks:
   (i) Applied Analysis and Modeling Track:
   – Applied Analysis (CAAM 31440) *or* Applied Dynamical Systems (CAAM 31410)
   – Applied Functional Analysis (CAAM 31210)
   – Partial Differential Equations (CAAM 31220)
   (ii) Computational Mathematics Track:
   – Applied Linear Algebra (CAAM 31430) *or* Mathematical Computation I: Matrix Computation (CAAM 30900)
   – Mathematical Computation II: Nonlinear Optimization (CAAM 31020)
   – Machine Learning (CAAM 37710) *or* Applied Approximation Theory (CAAM 31050)

(II) (300 units) Three elective courses within the CAM program: Students may select from the track not pursued above, or from courses identified as CAM electives in the Course Guide each quarter.

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

(IV) (0-900 units) Students may take up to nine other elective courses.

Additional notes:

[1] Some offerings listed in each quarter's course guide may be marked with an asterisk, indicating that registration may require program and/or instructor approval (due to prerequisites or potential overlap with other courses). Students who wish to enroll in these courses should consult their advisors.
[2] Upon approval by a student's advisors, Convex Optimization (CAAM 31015) may replace Nonlinear Optimization (CAAM 31020) in the Computational Mathematics Track.
[3] Upon approval by a student's advisors, Machine Learning 1 (CAAM 37711) or Machine Learning and Large-Scale Data Analysis (STAT 37601) may replace Machine Learning (CAAM 37710) in the Computational Mathematics Track. Unless otherwise approved in writing, at most one of CAAM 37710, CAAM 37711, or STAT 37601 can count towards the MCAM degree requirements.

2023–2024 Grade Requirements: All courses must be taken for a letter grade and receive a grade of "C" or better to be counted as part of the MCAM program. Students must maintain a GPA of "B-" or above (≥ 2.67).

Policies related to the master's thesis option: The thesis option may be completed in 15 months or more (enrollment in at least four non-summer quarters). This option requires submission of an advisor-approved version of the thesis and the presentation of a public 30 minute master's seminar. The enrollment requirement in a given quarter can be satisfied by 50 units of reading/research credit supervised by the thesis advisor. Once a student has identified a thesis advisor they should submit the Thesis Advisor Form (available on the MCAM Canvas site) to Eric Baer. Once a thesis advisor has been designated, successful completion of the thesis and presentation are required components of the student's educational program, and any changes (including a request to graduate without thesis) require approval from both the thesis advisor and the MCAM program.

Policy on good academic standing: Students are expected to maintain good academic standing throughout their graduate career. The MCAM program may impose restrictions or take other actions (including placing a student on Academic Probation) if a student fails to remain in good standing.

Length of the program: Students pursuing either the option without master's thesis or the option with thesis may study for between three and six quarters of full-time study, plus up to two summer quarters (following enrollment in Fall/Winter/Spring of each academic year). Students pursuing the option with master's thesis must be enrolled in at least four non-summer quarters before graduation. It will not be possible to extend the program beyond 24 months of full-time study (six quarters and the two summers after each academic year). Quarter(s) of an approved leave of absence do not count as quarter(s) of enrollment. The program's summer offerings are typically limited to Stat 39800 Field Research.

Petitions and requests: Students may petition for a waiver of an MCAM program policy by submitting a written request to Jonathan Rodriguez, along with supporting material. The request will then be forwarded to the MCAM program.

Questions: Students with questions may contact Jonathan Rodriguez (Student Affairs Administrator), Bahareh Lampert (Dean of Students in the Physical Sciences Division), or Amanda Young (Associate Director, Graduate Student Affairs) in UChicagoGRAD.