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

2026–2027 MCAM Handbook

2026–2027 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 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.

Students must register for at least one regularly scheduled (non reading/research) course each non-summer quarter unless another arrangement has received written approval from the program. Students who have not yet fulfilled the requirement of 9 successfully completed courses in Categories (I)-(III) must register for at least one course from List A (see appendix) each non-Summer quarter.

(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. Students wishing to count advanced probability courses appearing in List B (see appendix) towards Categories (II)–(III) must have previously taken STAT 38100 and earned a letter grade of C or above.
[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, Foundations of Machine Learning and AI - Part 1 (CAAM 37711) may replace Machine Learning (CAAM 37710) in the Computational Mathematics Track.
[4] Unless otherwise approved in writing, at most one of CAAM 37710 or CAAM 37711 can count towards the MCAM degree requirements.

2026–2027 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 at or above 2.67. More information on good academic standing is provided below.

Policies related to the master's thesis option: Students who wish to do so can pursue the option of a master's degree with thesis. 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. Once a student has identified a thesis advisor they should submit the Thesis Advisor Form (available on the MCAM Canvas site) to Eric Baer; the thesis advisor form must be submitted no later than the end of the Spring quarter of a student's first year in the MCAM program. 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.

Joint BA/MS or BS/MS in Computational and Applied Mathematics: Students enrolled in the joint BA/MS or BS/MS program in Computational and Applied Mathematics should consult the description of that program in the College Catalog.

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.

Room Requests: Students who need to reserve rooms controlled by CCAM should follow the policies outlined at `https://cam.uchicago.edu/events/room-reservations/`. All room requests for the purposes of administering the Collective Bargaining Agreement between the University and GSU-UE should be directed through the UChicagoGRAD Room Reservation Form.

Graduation information: Students in the MCAM program follow the Physical Sciences Division's graduation processes.

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.

Residency Requirements: Students are expected to follow the Division's residency requirements for graduate students.

Leave of Absence Policies and Process: Students in the MCAM program who need to apply for a leave of absence should follow the policies of the Physical Sciences Division.

Policy on master's thesis work while in withdrawn status: The program does not have separate phases of coursework and research work, and MCAM students are expected to enroll in coursework throughout their time in the program. In rare circumstances, if a student has completed substantial work towards a thesis but is unable to complete the requirements of the thesis option by the relevant deadlines in a given quarter, they may submit a petition for a transfer to withdrawn status pending completion of the thesis. Petitions require, at a minimum, the support and written approval of the thesis advisor, and will be considered by the program on a case-by-case basis. Petitions may be submitted to the MCAM advisor Eric Baer. All thesis presentations must be conducted in person in Chicago. International students should check with their OIA advisor to determine any constraints relevant to their plans.

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

Student Manual: The Student Manual is the official statement of University policies, regulations, and expected standards of student conduct that are applicable to all students. While students should be familiar with the manual as a whole, the following are commonly referenced by graduate students: Student Life & Conduct, Leaves of Absence, University Grievance Policy for Graduate Students, Policy on Harassment, Discrimination, and Sexual Misconduct, Policy on Title IX Sexual Harassment, Policy on Religious Accommodation for Missed Classes, Assignments, and Exams, Academic Honesty & Plagiarism, Graduate Student Parent Policy.

Divisional Policies: The Physical Sciences Division's student policies are applicable to all students in the Master's Program in Computational and Applied Mathematics. Students with questions about PSD policies can reach out to their Student Affairs Administrator Chris Stundon (cstundon@uchicago.edu or the Dean of Students Office.

Graduate Student Union: The terms and conditions of employment for certain graduate students at the University of Chicago who are employed to perform instructional or research services will be determined by a Collective Bargaining Agreement (CBA) between the University and Graduate Students United ("GSU-UE") for the duration of the assignment to perform such services. Students can access the CBA and review frequently asked questions about graduate student unionization on the Provost's Office website.

Key Contacts: In addition to faculty, there are a number of individuals who serve as resources for graduate students.

CCAM Director: Guillaume Bal (guillaumebal@uchicago.edu)
MCAM Program Director: Guillaume Bal (guillaumebal@uchicago.edu)
MCAM Assistant Director: Eric Baer (ebaer@uchicago.edu)
Student Affairs Administrator: Chris Stundon (cstundon@uchicago.edu)
Dean of Students: Bahareh Lampert (blampert1@uchicago.edu)

Questions: Students with questions may contact Guillaume Bal (CCAM Director, guillaumebal@uchicago.edu), Eric Baer (MCAM Assistant Director, ebaer@uchicago.edu), Chris Stundon (Student Affairs Administrator, cstundon@uchicago.edu), Bahareh Lampert (Dean of Students in the Physical Sciences Division, blampert1@uchicago.edu), or Amanda Young (Associate Director, Graduate Student Affairs) in UChicagoGRAD.

Effective: November 2, 2026

Appendix

List A

The following courses may be used to satisfy the List A enrollment requirement for students who have not yet fulfilled the requirement of 9 successfully completed courses in Categories (I)–(III):

- CAAM 31430 Applied Linear Algebra
- CAAM 31440 Applied Analysis
- CAAM 37830 Scientific Computing with Python
- CAAM 30900 Mathematical Computation I: Matrix Computation Course
- CAAM 31015 Mathematical Computation IIA: Convex Optimization
- CAAM 31020 Mathematical Computation IIB: Nonlinear Optimization
- CAAM 37710 Machine Learning
- CAAM 31050 Applied Approximation Theory
- CAAM 31410 Applied Dynamical Systems
- CAAM 31210 Applied Functional Analysis
- CAAM 31220 Partial Differential Equations
- CAAM 31470 Applied Complex Analysis
- CAAM 31460 Applied Fourier Analysis
- CAAM 31450 Applied Partial Differential Equations
- CAAM 31100 Mathematical Computation III: Numerical Methods for PDE's

Students wishing to submit a petition with a request to count certain courses not enumerated above but listed in CAAM or STAT toward the List A enrollment requirement may submit their request in writing (via email) to the MCAM advisor Eric Baer (all such courses must be listed at the 300-level or above and include an in-person exam to be counted towards this requirement). Petitions will be considered by the program on a case-by-case basis.

List B - Advanced Probability Coursework

Students wishing to count the following courses towards Categories (II)–(III) must have previously taken STAT 38100 and earned a letter grade of C or above.

- STAT 38300 Measure Theoretic Probability III
- STAT 38510 Brownian Motion and Stochastic Calculus
- CAAM 38520 Topics in Random Matrix Theory
- CAAM 38530 High-Dimensional Probability
- CAAM 41561 Statistical Optimal Transport

Students who have taken a course equivalent to STAT 38100 listed at the graduate level (at the University of Chicago or elsewhere) may submit a petition (in writing) to the MCAM advisor Eric Baer requesting a waiver of the STAT 38100 requirement. Petitions will be considered by the program on a case-by-case basis.