



The University of Texas at Austin
Department of Mathematics
College of Natural Sciences

MATH MAJOR NEWSLETTER

Fall 2026

ACADEMIC CALENDAR

November 2 - 13

Spring 2027 Registration

November 18

Last day an undergraduate may: Q-drop a class; withdraw; change a class to pass/fail

November 23 – 28

Fall Break; Thanksgiving

December 7

Last Class Day

December 8 - 9

No-Class Study Days

December 10 – 12, 14

Final Exams

December 15

University residence halls close

UPCOMING SPRING 2027 REGISTRATION

Please do read your university emails and SANs.

Follow the pre-registration steps found in the SANs and/or emails from your advisor.

Step 1: Run a [degree audit](#) for the degree you plan to pursue (select the correct Catalog).

Step 2: List the courses you plan to take on the spring [Advising Worksheet\(s\)](#) (use course numbers, not unique numbers); include questions or explanations under “Student Comments.”

Step 3: Read your advisor’s response on the Worksheet, as they may make recommendations.

If you wish to make an appointment with Summer Cacciotti (s.cacciotti@austin.utexas.edu), Nathaniel Sulapas (nathaniel.sulapas@austin.utexas.edu), or Amy Stokes (amy.stokes@austin.utexas.edu) please email them directly. If you wish to meet with a faculty advisor, email the Math, Physics, and Astronomy advising office at mpaadv@austin.utexas.edu to schedule an advising appointment.

Learn more about how to register for classes [here](#).

Course Schedules

Mathematics Courses & Prerequisites

Highlighted Mathematics Courses Offered Spring 2027

M 175T Being You in Mathematics W 11:00AM – 12:00PM (58144) Prof. Cudina

M 344K Intermediate Symbolic Logic MW 9:30AM – 11AM (57960) Prof. Litland. (Same As: PHL 344K) A second-semester course in symbolic logic: formal syntax and semantics, basic metatheory (soundness, completeness, compactness, and Loewenheim-Skolem theorems), and further topics in logic. Prerequisite: Philosophy 313, 313K, or 313Q.

M 365D Real Analysis II TTh 11AM – 12:30PM (58075) Prof. Juschenko. Recommended for students planning to undertake graduate work in mathematics. A rigorous treatment of selected topics in real analysis, such as Lebesgue integration, or multivariate integration and differential forms. Prerequisite: Mathematics 365C with a grade of at least C-.

M 365G Curves and Surfaces TTh 2 – 3:30PM (58080) Prof. Danciger. Calculus applied to curves and surfaces in three dimensions: curvature and

torsion of space curves, Gauss map and curvature of surfaces, Gauss theorem, geodesics, and the Gauss-Bonnet theorem. Three lecture hours a week for one semester. Prerequisite: Credit with a grade of at least C- or registration for Mathematics 365C.

M 367L Topology II TTh 8:00 – 9:30AM (58090) Prof. Piccirillo. Various topics in topology, primarily of a geometric nature. Prerequisite: Mathematics 367K with a grade of at least C- or consent of instructor.

M 373L Algebraic Structures II TTh 11AM – 12:30PM (58115) Prof. Keel. Recommended for students planning to undertake graduate work in mathematics. Topics from vector spaces and modules, including direct sum decompositions, dual spaces, canonical forms, and multilinear algebra. Prerequisite: Mathematics 373K with a grade of at least C-.

M 375T Actuarial Modeling and Simulations MWF 9AM – 10AM (58145) Prof. Cepparo. Explore Bayesian modeling and the essential mathematical principles behind Markov Chain Monte Carlo (MCMC) simulations. Delve into predictive modeling with posterior distributions and create meaningful visualizations that enhance understanding. Approach Model evaluation from diverse perspectives including ethical considerations, with applications ranging from simple regression to hierarchical linear and nonlinear models. Use R to carry out computational tasks, simulations, and statistical analyses in applying Bayesian methods to real-world scenarios. Prerequisite: Mathematics 362K, and Mathematics 378K or 358K.

M 375T Geometric Foundations in Machine Learning TTh 12:30 p.m.-2:00 p.m. and F 1:00 p.m.-2:00 p.m. (58155) Prof. Bajaj. Explore geometric foundations of modern deep and reinforcement learning. Examine the mathematical, statistical, and computational optimization fundamentals that are the basis of computational, data driven machine learning models and Markov decision making processes. Discuss how data efficient and continuous action spaces are harnessed to learn the free energy Hamiltonian underlying dynamical systems, and multi-player games. Prerequisites: The following coursework with a grade of at least C-: Computer Science 429 or 429H; Mathematics 408D, 408M or M427L; Mathematics 362K or Statistics and Data Sciences 321; and Mathematics 340L, 341, or Statistics and Data Sciences 329C. (Math majors won't need CS 429/429H, but the rest they should have completed before taking the class.)

M 375T Introductory Game Theory TTh 8:00 a.m.-9:30 a.m. (58160) Prof. Veiel; MW 9:30 a.m.-11:00 a.m. (58165) Prof. Thomas; TTh 9:30 a.m.-11:00 a.m. (58170) Prof. Veiel. (Same as: ECO 354K, CS 378) Introduction to the formal study of interdependent decision making. Applications of game theory include pricing and advertising strategies, labor-management bargaining, and tariff negotiations.

M 375T Math for Machine Learning TTh 9:30 a.m.-11:00 a.m. (58175) Prof. Tsai. This course introduces the mathematical foundations necessary for understanding and applying machine learning techniques. Emphasis is placed on optimization, linear algebra, and probability. Weekly Python homework assignments and three midterms are included. Prerequisites: Basic knowledge of linear algebra, calculus, and probability.

MATHEMATICS, PHYSICS, & ASTRONOMY ADVISING WEBSITE

You will find information about the following registration matters on the [Mathematics, Physics, & Astronomy Advising website](#): Registration Tips; Requesting to take M 371E, summer over hours, registering for over 14 hours in the summer or over 17 hours in the fall, Mathematics Conference Courses, Honors Tutorial Courses, Graduate Mathematics Courses, and more.

MATH MAJOR DEGREE OPTIONS

You will find the degree checklists for each of the mathematics major degree options [here](#). In particular, I want to highlight in this newsletter the variety of pathways through earning the BS Mathematics degree. All students pursuing the Bachelor of Science in Mathematics (Option VII: Mathematics) degree must complete a lower-division calculus sequence, a minimum of 33 hours of upper-division coursework in mathematics, an introductory computer programming course, and a Math in Context course.

The Bachelor of Science in Mathematics allows each student to choose a concentration based on their own academic and career goals. While earning a BS Mathematics degree a student may choose to follow a pathway in pure mathematics, applied mathematics, statistics and probability, data science, scientific computation, actuarial science, or UTeach. The [BS Mathematics Pathways](#) provide guidance on relevant courses and certificate programs for these different fields and applications of mathematics. These pathways prepare graduates to either enter the workforce or to pursue graduate studies.

Q: How do I satisfy the Math in Context degree requirement?

A: Dr. Austin is willing to consider *any course in any college* on campus that is an upper division course and uses mathematics above calculus. Have you found an interesting course? Meet with Dr. Austin, share the syllabus, and she will decide if the course will satisfy your Math in Context degree requirement. The courses listed on the degree plan under the Math in Context degree requirement automatically count, but you may need the Math, Physics, and Astronomy Advising Staff to secure the seat in the non-mathematics courses for you. These automatic Math in Context courses include M 374M; PHY 329, 336K, 352K; CS 341, 342, 345, 346, 353, 367; CH 353, 354; and EE 411, 325, 360C, 362K.

SPRING 2027 MATHEMATICS COURSES OFFERED IN INQUIRY BASED LEARNING FORMAT

M 325K Discrete Mathematics MWF 8:00 a.m.-9:00 a.m. (57665) Prof. Martinez
M 325K Discrete Mathematics TTH 12:30 p.m.-2:00 p.m. (57685) Prof. Austin
M 325K Discrete Mathematics Hon MWF 9:00 a.m.-10:00 a.m. (57715) Prof. Starbird
M 328K Introduction to Number Theory TTH 3:30 p.m.-5:00 p.m. (57820) Prof. Miner
M 328K Introduction to Number Theory TTH 9:30 a.m.-11:00 a.m. (57825) Prof. Miner
M 328K Introduction to Number Theory TTH 2:00 p.m.-3:30 p.m. (57830) Prof. Miner
M 329F Theory of Interest TTH 9:30 a.m.-11:00 a.m. (57850) Prof. Austin
M 333L Structure of Modern Geometry MWF 11:00 a.m.-12:00 noon (57855) Prof. Osborn
M 333L Structure of Modern Geometry MWF 12:00 noon-1:00 p.m. (57860) Prof. Osborn
M 339C Actuarial Case Studies TTH 3:30 p.m.-5:00 p.m. (57865) Prof. Walch
M 339U Actuarial Contingent Payments I TTH 12:30 p.m.-2:00 p.m. (57885) Prof. Harper
M 339V Actuarial Contingent Payments II TTH 11:00 a.m.-12:30 p.m. (57890) Prof. Harper
M 362K Probability I TTH 8:00 a.m.-9:30 a.m. (58045) Prof. Maxwell
M 378K Intro to Mathematical Statistics TTH 9:30 a.m.-11:00 a.m. (58185) Prof. Maxwell

SPRING 2027 MATHEMATICS COURSES OFFERED WITH CORE REQUIREMENT COMMUNICATION

M 379H Honors Tutorial Course (58195)

PREREQUISITES

Check out the [prerequisite chart](#) on the Math, Physics, and Astronomy Advising website.

NETWORKING

There are various organizations with which you might like to connect while you are a math major here at UT.

- The [UT Math Club](#) is an active group of undergraduate math majors who meet to discuss and share their wisdom as they navigate through being a UT math major, apply for and participate in summer research opportunities, and head towards graduate school.
- We encourage all of you to join the [UT Mathematics LinkedIn](#) group!
- [The UT chapter of the Association for Women in Mathematics \(AWM\)](#)'s purpose is to encourage women and girls to study and to have active careers in the mathematical sciences, and to promote equal opportunity and the equal treatment of women and girls in the mathematical sciences.
- The [UT Actuarial Science Club \(ASC\)](#) is open to students of all majors and academic backgrounds who have an interest in furthering their academic and professional careers. Whether you've never heard of an actuary before or you're already on your way to your ASA, the Actuarial Science Club has something for you!
- [UT Mathematics and Science Teachers of Tomorrow \(MASTT\)](#) is a student-led organization whose activities help to promote the success of UTeach pre-service teachers in STEM fields (science, technology, engineering and mathematics) at the University of Texas at Austin.
- The [UT chapter of the Society of Industrial & Applied Mathematics \(SIAM\)](#) promotes promote interaction between members of the applied mathematics community at UT Austin, across departments, institutes, and professional marks.
- [Gamma Iota Sigma](#) is a Risk Management, Insurance, and Actuarial Science fraternity.

JOB PREPARATION

Take full advantage of [CNS Career Services](#) while you are a student. This is a great resource for our students! Seek out project-based courses and internships while you are an undergraduate. Be sure to highlight these in your personal statement when applying for jobs.

You can be a mathematics major or a mathematics actuarial science major AND become certified to teach middle school and high school mathematics all four years. If you are interested, please see the [UTeach Program in Natural Sciences](#) or email [Pam Elias](#). If you have ever thought about becoming a certified teacher in the state of Texas, you owe it to yourself to try it out

with a program that is nationally recognized for its success at training highly qualified math, science, computer science and engineering teachers.

A recent edition of SIAM's careers brochure, [Careers in the Mathematical Sciences](#), is now available and is a great resource for anyone wondering what they can do with math. Available in print and as a free PDF online, this publication spotlights applied mathematicians working in various facets of the mathematical sciences, with a focus on industrial careers. It contains personal insights and advice as well as career path, salary, and job skill information from 23 people, including freelancers, consultants, and those working in a variety of capacities at industry giants, small start-ups, research labs, and non-profits.

MENTORING PROGRAM

The [Directed Reading Program](#) (DRP) pairs undergraduate students with graduate students or faculty mentors to undertake independent projects in mathematics. Any undergraduate student may apply for DRP and, if accepted, will be assigned an appropriate graduate mentor. The student and the mentor will agree on a project. It can be based on reading through a book or an article, but the project is not limited to such things. Look for next semester's application after the start of the semester.

UTEACH NATURAL SCIENCES

Have a passion for STEM and want to inspire the next generation of learners while gaining skills that can be translated to any career? Learn how you can add a teaching certification to your degree by trying out teaching with UTeach Natural Sciences! By registering for our one-credit hour introductory course, Step 1 (UTS 101), you can easily learn if teaching is for you in a low-pressure environment as you teach elementary students engaging math and science lessons!

Get to know us better by visiting [our website](#), where we have a team of [Student Ambassadors](#) dedicated to answering questions about the program along with [our scholarships and internships](#).

If you want more details about how UTeach can fit into your degree plans, [RSVP](#) to one of the UTeach information sessions, and talk directly with UTeach students and staff. Information sessions will be held Monday-Thursday from November 4 to November 14, with in-person and virtual options available.

More ways to connect:

- [Schedule an](#) advising appointment (it is not required to meet with an advisor to register for UTS 101)
- Follow us [on Instagram](#) and like us on [Facebook](#)
- Send us a note at ambassador@uteach.utexas.edu

CNS COMMON SCHOLARSHIP DEADLINE MARCH 15, 2027

Remember that by applying via the CNS Common Scholarship you will be considered for both CNS college-level scholarships and mathematics departmental scholarships. The deadline is March 15, 2027 (11:59 pm CT). You apply via LASSO beginning in the spring semester.

OUTREACH OPPORTUNITIES

With registration for next semester coming soon, we want to take a moment to share about UTeach - Natural Sciences Program. UTeach - Natural Sciences is a widely recognized teacher preparation program that offers extensive in-the-classroom teaching experience, interdisciplinary skills, and current pedagogical strategies and practices taught to you by extremely successful and knowledgeable master teachers. By the end of the UTeach program, you will be fully certified to teach STEM at the middle or high school level in the state of Texas. This program can fulfill the certification requirement for students on a BSA degree plan. UTeach provides flexible entry points no matter how far along you are in your degree plan. The UTeach program is open to any student, in any college, and students do not have to change their major to join! Sign up for the first course in the program, UTS 101 when you register! We look forward to having you join our program! For more information, attend an information session; find details at <https://uteach.utexas.edu/>.

While you're planning your courses for next semester, we invite you to sign up for the [UTeach Outreach](#) class! UTeach Outreach: CH 207K or CH 371K allows you to teach hands-on science lessons with a partner at local elementary and middle schools while receiving course credit at UT! This unique course is planned around your schedule and provides opportunities to boost your resume with leadership roles in your area of interest and improve your communication and presentation skills while helping the community. You can receive two (CH 207K) or three (CH 371K) graded credit hours of science or elective credit, depending on your major and prerequisites. Check with your advisor for the type of credit you could receive. See course registration details and more information at <https://outreach.uteach.utexas.edu/undergraduates>.

Each fall, Dr. Austin organizes a *Math Fun Day* for elementary-age children and a Sonia Kovalevsky Day for middle and high school students. This year, SK Day & Math Fun Day is Sunday, November 1. Each spring, Dr. Austin organizes the mathematics department activities for [STEM Girl Day at UT](#). Reach out to Dr. Austin if you are interested in these outreach opportunities.

RESOURCES

Email the [Math, Physics, and Astronomy advising](#) office at mpaadv@austin.utexas.edu if you would like a list of math tutors available for hire. If you are enrolled in calculus, be sure to utilize the [Calculus Lab](#). For many mathematics courses, the [Sanger Learning Center](#) is a valuable resource. Moreover, did you know that the UT Counseling and Mental Health Center offers a wide variety of free workshops and events intended to provide valuable life skills? Check them out [here](#).

Finances may already be a concern when you are a college student. These UT partners are here for you: [Texas Global at The University of Texas at Austin](#), for International Students and Scholar Services, [Office of the Dean of Students at UT Austin](#), for UT Outpost Food Delivery and for Student Emergency Services, [Financial and Administrative Services, UT Austin](#), and UT Austin Voices Against Violence for the Survivors Emergency Fund.

The Office of the [University Ombuds for Students](#) is here to listen to your concerns in a safe setting about life at the university and confidentially discuss interpersonal difficulties, university policies, university bureaucracy, and conflict resolution techniques.

[CARE Counselors](#) offer short-term counseling and mental health consultation, workshops and outreach, and assistance in connecting to resources on and off campus in an accessible academic setting. [CNS CARE Counselors](#) are here to support you through various life events. Please don't hesitate to reach out if you need anything at all. The CNS CARE counselor office is located in PAI 5.33.

Delve into the resources from [CNS Career Services](#). Follow the [Chamber of Commerce Austin job opportunities](#) website. [Join 12twenty@Texas](#), our career service platform for finding jobs and internships. Enhance your skills through [LinkedIn Learning](#) offered through UT.

GRADUATE SCHOOL PREPARATION

Juniors, spend the summer before your senior year compiling the list of schools to which you will apply. In the fall, have fellow students, CNS Career Services, and/or Dr. Austin proofread your statement of purpose. By November, be prepared to request letters of recommendation from at least three faculty members (at least two of which will probably be mathematics faculty). When you request letters of recommendation, provide your letter writers with your resume, statement of purpose, and a spreadsheet or chart listing all schools to which you are applying. (In this spreadsheet or chart include the name of the school, the particular program to which you are applying, due dates, and method of letter submission.)

Sophomores and Freshmen, check in with Dr. Austin once a semester or at least once a year to see that you are taking the best mathematics courses to prepare you for graduate school. Participate in our Directed Reading Program, UT Math Club, and UT AWM. Make meaningful connections with your mathematics faculty, as you will need at least three to write letters of recommendation for you during the fall of your senior year. To write strong letters on your behalf, they need to know you, how you work with others, how you work independently, and your overall potential. Be an active participant in your mathematics courses, attend office hours, ask your professors about their research, and get to know your professors.

Are you looking for a program to bridge your undergraduate work with graduate work? Post-baccalaureate programs aim to prepare students to be successful in graduate studies in mathematics and to experience graduate school. Here is a list of post-baccalaureate programs around the US: <https://mathalliance.org/our-partners/post-baccalaureate-programs/>

Find more graduate school resources listed under Student Opps [here](#).

INTERNSHIP SPOTLIGHTS

- [SIAM's Internship list](#)
- [AMS's Internship list](#) (set filters in left-hand menu)
- [Department of Energy Internships & Fellowships Portal](#)

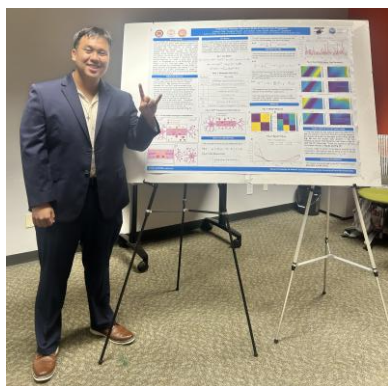
SUMMER UNDERGRADUATE RESEARCH

Winter break is a great time to review all the ways that undergraduates can participate in summer research. If you are considering applying for REU programs or other summer research experiences, check out this [AMS Blog post](#) “Advice for Applying to REU Programs (From Recent Participants!).” Find REUs and many other summer research opportunities listed under Summer Opportunities in Mathematics [here](#).

SPOTLIGHTS:

- [Computational Biology Summer Program \(CBSP\)](#), hosted at Memorial Sloan Kettering, Weill Cornell Medicine, and Rockefeller University
- [Caltech WAVE Fellows](#)
- [MSRI Undergraduate Program \(MSRI-UP\)](#), hosted at the Simons Laufer Mathematical Sciences Institute, Berkeley, CA

FELLOW UT MATH MAJOR HIGHLIGHTS



“This summer I did research through the UTRGV Applied Math, Computational and Data Science NSF REU program and did a project in modelling the propagations of prion proteins in the brain contributing to neurodegenerative diseases such as Alzheimer's disease. Our project encompassed everything from graph network topology, numerical methods, and stochastic ODE and PDE dynamical systems to learning several biological processes such as protein misfolding dynamics. I found the whole experience to be formative to work in an applied math lab and taught me that math has some pretty meaningful applications, especially when applied to understanding life-threatening diseases.” -**Gregory Huynh**, Neuroscience & Mathematics Major

“Being a part of the 2026 MSRI-UP cohort was a defining experience as my time as a mathematics major. I spent 6 weeks in Berkeley, California, studying and researching a topic in solving Partial Differential



Equations with Numerical Methods. In the first two weeks, I received a crash course on graduate-level material, and then I was placed into my research group of 3. My group's project focused on building a bounded and commutative projection using the NGSolve package in Python. The idea was to take a function from an infinite-dimensional space to a finite-dimensional space with these projections. At the end of the program, we presented our research and wrote a report, which we plan to publish as a paper. I am very grateful for this experience as I feel it strengthened my identity as a mathematician and opened doors for future opportunities such as graduate school.” -**Maris Rodriguez**, Mathematics Major

Be sure to check out the [list of resources](#) that Dr. Austin has compiled for math majors.

MATHEMATICS CAREER PANEL

Dr. Austin will host a Mathematics Career Panel on Wednesday, December 2, 1:00-1:50 pm. Come hear from UT Mathematics Major Alumni about their paths and careers. Dr. Austin will email details closer to the date.



Jennifer Austin, Ph.D., ACUE

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If you wish to meet with Dr. Austin, please email the Math, Physics, and Astronomy advising office at mpaadv@austin.utexas.edu to schedule an advising appointment.

REQUESTING LETTERS OF RECOMMENDATION

What to do well before requesting letters of recommendation

Change can be challenging for anyone, and the transition in moving beyond an undergraduate career can be arduous for many. You can make this time easier by being proactive and planning ahead to ensure your success. In the semesters before you are at the point of requesting letters of recommendation, there are a number of actionable steps you should be practicing.

First, make meaningful connections with your mathematics faculty, as you will need at least three faculty members in your field of study to write letters of recommendation for you during your senior year. To write strong letters on your behalf, they need to know you, how you work with others, how you work independently, and your overall potential. Be an active participant in your mathematics courses, attend office hours, ask your professors about their research, get to know your professors, and allow them to get to know you. Second, you must check in with your academic advisor and/or faculty advisor at least once a semester to see that you are taking the best mathematics courses to prepare you for your desired career or graduate school program.

Third, network, network, network. Participate in your school's math club, actuarial science club, or future mathematics teachers club. Finally, I would add that volunteering for outreach opportunities is a great way to connect with the larger community, serve as a math ambassador, bring mathematics alive, and enhance your own communication skills. (Continue reading Dr. Austin's advice [here](#).)

“As a mathematician, I often speak of the joy that math can bring... As a triumphal project of human ingenuity to grasp the divine order, mathematics is full of this kind of joy, and it is a joy that we should all hope to experience. So when people think of math as a bunch of things that a calculator can do, they have a crucial misunderstanding. A calculator can't do math, it can only calculate. Sure, an AI (an artificial intelligence) can do more. But to speculate whether it will someday reason like a human being is to miss a broader point—that by outsourcing our thinking to an AI, we lose something valuable for human flourishing: our own ability to experience joy, to have “aha!” moments that give life texture and richness.”

- Frances Su in *“[A Meditation on Mathematical Joy](#),”* July 22, 2026
