

MATH 6001 Syllabus

Introduction to Graduate Mathematics, Section A, 2 credit hours

Fall 2026

Instructor Information

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Office Hours: Mondays 2:00-4:30 PM and Tuesdays 2:30-4:00 PM

General Course Information

Description

This course is a professional development course that will ensure students begin their graduate careers effectively and with the tools needed to succeed. We will have short lectures and panels with faculty in the School of Mathematics. It is expected that you do readings as assigned and come prepared with questions to ask panelists. Some topics that are covered in the course are:

- Getting involved in the mathematical community.
- Finding a research advisor.
- Getting the most out of math talks and conferences.
- Building a strong CV, and pursuing career paths in academia and industry.

In addition, the course will fulfill the institute-mandated Responsible Conduct of Research requirements by exploring topics related to ethical and professional issues such as conflicts of interest, the peer review process, research misconduct, the responsibilities of mentors and trainees, and more.

Course Learning Outcomes

Students completing this course will:

- Understand the ethical and professional challenges associated with careers in the mathematical sciences.
- Become familiar with the research being done by faculty in the School of Mathematics.
- Be able to create a professional website and CV.
- Be able to write papers and proposals in $\text{\LaTeX}$.
- Understand the importance of, and how to maximize the benefits gained from, attending seminars and conferences.

Required Course Materials

There are no required materials for this course.

Grading Policy:

This course is Pass/Fail. To receive a passing grade in the course, a student must do all of the following.

1. Publish your GT website by Monday, August 31.
2. Complete the mentor-mentee expectations assignment.

3. Get a passing grade on a report (typeset in L^AT_EX) on the Research Horizons Seminars or Colloquia. Aim for between 1 and 1.5 pages for each report.
4. Write a grant proposal for an NSF Graduate Research Fellowship (or alternative assignment).
5. Get a passing grade on an ethics paper of 4 pages in length on an RCR issue. I will post a list of topics, but feel free to approach me with your own idea.
6. Attend all classes, read assigned material (posted on Canvas), and participate in class discussions.

Description of Graded Components

Each component of the “Grading Policy” section is mandatory and will be graded on a Pass/Fail basis. The specific requirements for each assignment will be described on Canvas. If an assignment receives a failing grade, then the student will be notified and given feedback, and they will need to re-submit the assignment. Attendance will be taken at the beginning of every class. Students who are more than five minutes late may be marked absent.

Course Policies

Attendance and Participation

To receive a passing grade, each student must attend the entire course. If a student has to miss a class, the student must contact the instructor prior to the day of the absence (unless the absence is due to illness) so that the instructor can determine whether it will be considered excused. If an absence is considered excused by the instructor, the student will do a makeup assessment to account for the absence. Missing class time for an unexcused reason will result in a failing grade. Students are expected to participate actively in class, and this includes keeping all mobile devices inactive for the duration of class unless they are necessary for an in-class activity.

Students are expected to arrive on time for every class. We are all human, and we understand that students may occasionally find themselves running a few minutes late for class. This will not be penalized. On the other hand, chronic tardiness is unacceptable and will result in a failing grade.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech’s Honor Code and the student Code of Conduct.

Any student suspected of cheating, plagiarism, or any other form of academic misconduct on an assignment will be reported to the Office of Student Integrity.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Core IMPACTS

Not applicable for this course.

Use of Generative AI

The use of generative AI or LLMs in any form in this course is a violation of the honor code which will result in a failing grade for the assignment and may result in a failing grade for the course.

Extensions, Late Assignments, & Re-Scheduled/Missed Assessments

Assignments are due by the dates listed on our course calendar. Extensions may be considered under extenuating circumstances, but students must reach out in advance or as soon as possible.

Inclement Weather and Digital Learning Days

Weather or other unforeseen emergency may make it appropriate to move class online for a period. If this is the case, we will strive to follow best practices for Digital Learning Days within the guidelines set by the Institute. For more information about Digital Learning Days, please see Georgia Tech's policy website and toolkit for Digital Learning.

Student Use of Mobile Devices in the Classroom

Cell phones, tablets, and laptops are not allowed during class unless they are required for a specific activity.

Additional Course Policies

A number of our class periods will consist of panels with other graduate students and faculty, as well as special presentations from Georgia Tech faculty and staff from outside of the School of Math. Students are expected to arrive promptly and give utmost respect and attention during these sessions.

Campus Resources for Students

Graduate Student Academic and Professional Success Resources

A list of resources for graduate students is given on the Office of Graduate and Postdoctoral Education website. Specific information for current graduate students includes

- Academic Resources such as the Communications Center, Language Institute, Library, Catalog, Registrar, resources for conducting research, Advocacy and Conflict Resolution resources, and how to manage unexpected situations that may impact your academic performance;
- Student Resources such as Campus Services, Child Care/Family programs, Health & Wellness, Career Services, and the Student Resource Guide; and
- Professional Development such as the programming from the Career Center and other professional development resources and events

Student Well-Being

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being.

Schedule

Due to the many moving parts and potential changes in availability for the special guests we will have during the semester, our schedule is subject to change as the semester goes along. Any changes will be relayed to the students in class.

Monday, August 24: Introduction. Class overview, RCR Compliance (see, [here](#), [here](#), and [here](#), and go [here](#) for the online part). Developing your website. Research Horizons and its [schedule](#). What should be in Research Horizons reports.

Wednesday, August 26: Getting involved. The [math GT site](#) has links for the AMS Grad Student Chapter, the Association for Women in Math Chapter, the GT SIAM Student Chapter, and more. There is also the [High School Math Day](#), and [Club Math](#). See the [AMS blog](#) on organizing seminars. Also: Attending talks and getting the most out of them, including the “[Three Things](#)” exercise by Ravi Vakil, Stanford.

Monday, August 31: Writing a CV, and [templates for a CV and thesis](#). Choosing a thesis advisor. The [arXiv](#), [MathSciNet](#), [L^AT_EX](#) (see [Oetiker’s book](#)), bibtex, Beamer, and style files. [Structuring](#) papers. Job search: academic and industry jobs, [MathJobs.org](#). See [Jobs on Dan Margalit’s TSR page](#). See our [faculty contacts list](#).

Due August 31: Create your Georgia Tech website.

Wednesday, September 2: Grant writing, funding agencies: NSF, NIH, AMS, MAA, and others. “Broader Impacts,” “intellectual merit,” evaluation. [NSF Graduate Research Fellowships](#) and more [fellowships](#), some for international students. Also, see [How to win a Fellowship for Graduate Study in Mathematics](#), by Evans Harrell. Also relevant are these articles in the AMS Notices from July of 2021: [applying for grants](#), [communicating mathematics in a research proposal](#), and [broader impacts](#).

Due September 2: Mentor-mentee expectations assignment: List 5 expectations that are important to your mentor-mentee relationship with your current or potential thesis advisor (e.g. how many times / hours to meet each week / month, close and personal mentoring vs. mentoring at an arm’s length distance).

Monday, September 7: Labor day: No classes

Wednesday, September 9: Looking after your health and balancing life in graduate school. Special guest: Richelle Fields from the Wellness Center.

Monday, September 14: Responsible Conduct of Research (RCR) overview; professional ethics in general; discussion of online CITI RCR training, and forms for RCR.

Wednesday, September 16: RCR: What is plagiarism? Self-plagiarism, plagiarism-detection software.

Starting the week of September 21, Wednesday lectures will be replaced by mandatory attendance at all Research Horizons talks. The times and day of the week for these will be determined early in the semester.

Monday, September 21: RCR: Authorship and publication, Copyright laws.

Monday, September 28: RCR: Math in Society; mathematicians as responsible members of society, workplace conduct.

Monday, October 5: Fall break; no class.

Monday, October 12: RCR: The peer-review process.

Monday, October 19: Title IX session hosted by Reona Blankumsee, Equal Opportunity and Compliance Investigator at Georgia Tech.

Monday, October 26: Conflict resolution. Special guest speaker: Sheila Cranman, Assistant Chief Counsel at Georgia Tech.

Due October 26: Mock grant proposal.

Monday, November 2: RCR: Collaborative research and conflicts of interest

Monday, November 9: RCR: The responsibilities of mentors and trainees.

Due November 9: Research Horizons report.

Monday, November 16: RCR: Research misconduct and policies for handling research misconduct.

Monday, November 23: RCR: Data acquisition, management, ownership, and sharing.

Monday, November 30: RCR: Research on human subjects.

Due November 30: Ethics paper. A list of possible topics will be posted in “Files” on Canvas.