Math 4802: Mathematical Problem Solving
Fall 2026
Dr. Matthew Baker
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Office: 128 Skiles

**Class Time and Location:** Tuesday and Thursday 3:30pm – 4:20pm in Skiles 168

**General Description:** This course is intended to teach mathematical problem-solving skills through exposure to challenging problems and proofs which go beyond the standard undergraduate curriculum. A secondary goal of the course is to prepare students to take the Putnam Examination.

**Course Learning Outcomes:**

- Communication
  - Uses and understands professional and discipline-specific language
  - Expresses ideas in an organized, clear, and concise manner
- Creativity
  - Shows ability to approach problems from different perspectives
  - Uses information in ways that demonstrate intellectual resourcefulness
- Ability to Deal with Obstacles
  - Is not discouraged by setbacks or unforeseen events and perseveres when challenges are encountered
  - Troubleshoots problems and searches for ways to do things more effectively
- Critical Thinking and Problem Solving
  - Uses a reflective and iterative approach to problem solving
  - Recognizes flaws, assumptions, and missing elements in arguments

**Textbook:** None

**Grading policy:** This course is graded on either a pass/fail or letter grade basis. The grade will be assigned based on homework and in-class work (50%), a final paper (30%), and taking the Putnam Exam (20%). Collaboration is permitted on the homework and in-class work, but you must write up your work in your own words and cite your sources.

Enrolled students will be required to take the Putnam Exam and to show up regularly for and participate in class. In addition, students will be required to write a final paper (approximately 5 pages) on a topic of their choice (subject to approval by the instructor).

**Academic and Research Honesty/Integrity Statement:**

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 the Student Code of Conduct and the Academic Honor Code, especially Appendix A: Graduate Addendum to the Academic Honor Code.

Students are expected to perform research in an ethical and responsible manner.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Allegations of scientific or scholarly misconduct are handled in accordance with the procedures outlined by the Policy for Responding to Allegations of Scientific or Other Scholarly Misconduct.

**Accommodations for Students with Disabilities:**

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services 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:**

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 articulates some basic expectations that you can have of me and that I have of you. Additional information for research-related work is given in The Expectations of Advisors and Advisees. 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.

**Campus Resources:**

The Undergraduate Research Opportunities Program (UROP) provides resources and support for undergraduate research students and their mentors. Visit `https://undergradresearch.gatech.edu/` or contact UROP at urop@gatech.edu for more information.