

## Course Information

Course Number:	Math689
Course Title:	Teaching undergraduate mathematics
Section:	602
Time:	TR 09:35 – 10:50 AM
Location:	BLOC 110
Credit Hours:	3

## Instructor Details

Instructor:	Peter Kuchment
Office:	Blocker 614A
Phone:	n/a
E-Mail:	kuchment@math.tamu.edu
Office Hours:	TR 11:00am-noon, F 12:30-1:30pm

## Course Description

A rationale for the class.

The modern technological society is dependent upon mathematics and thus it is critically important that appropriate attention be given to the art of teaching postsecondary mathematics.

Teaching such mathematics courses, which includes the community college level, requires teachers to have the ability to communicate many technical aspects of the discipline while at the same time implementing pedagogical strategies that allow for the deepening of mathematical conceptual and procedural understanding.

All this must be orchestrated in such a way that the beauty and rigor of the discipline are not compromised. Tending to all the intricate aspects of teaching postsecondary mathematics is not a trivial task.

Thus, offering a graduate-level course that allows students to take a deep dive into these intricate aspects is imperative for furthering the mathematics education of our future postsecondary teachers.

## Course Prerequisites

*All main undergraduate math classes (Calculus sequence, differential equations, linear algebra, probability), or instructor's permission.*

## Special Course Designation

None

## Course Learning Outcomes

- We expect that students enrolled in this course will learn the importance of a deep and diverse knowledge of mathematics and its applications and relations to other disciplines when teaching postsecondary mathematics.

- The students are expected to learn a variety of successful pedagogical techniques they can use to deepen their own students' mathematical conceptual and procedural understanding and appreciation of the beauty and usefulness of mathematics.
- Students enrolled in this course will also learn of some known difficult points in teaching various undergraduate math classes and best recommended approaches of presenting them to their own students.

## Textbook and/or Resource Materials

*S. Krantz, How to teach mathematics (Any edition, the 3<sup>rd</sup> edition is highly recommended)*

[College Mathematics: suggestions on how to teach it](#)

## Grading Policy

The class will be mostly in a discussion mode. Grading will be based upon attendance, class participation, and assigned presentations.

## Late Work Policy

- *Late work acceptance will be only according for the University Accepted reasons, see [\(Student Rule 7\)](#).*

## Course Content/Schedule (the topics will be intertwined throughout the class)

In this course one would want to address, the following points:

- The crucial importance of the teacher's deep knowledge of various mathematical concepts and their relations to other disciplines.
- Importance of continuous dialog with the students, to ascertain in real time what they understand about topics as they appear in the course. Making attempts to get students' input into solutions or even proofs.
- Necessity of constant preparation and self-evaluation for improving one's teaching and of using students' feedback when doing so.
- Typical misconceptions, knowledge gaps, and misuse of notations students often develop in their pre-collegiate mathematical careers and how these can be rectified in their postsecondary mathematics courses.
- Known "trouble spots" in teaching calculus, differential equations, and other postsecondary mathematics courses and recommended ways of presenting them successfully.
- Teaching techniques and mechanics essential for successful mathematics classroom teaching.
- Creating a respectful and inclusive learning environment in a mathematics classroom.
- Effective use of technology in the postsecondary mathematics classroom.

## University Policies

*This section outlines the university level policies that must be included in each course syllabus. The TAMU Faculty Senate established the wording of these policies.*

## Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

## Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

## Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

### Texas A&M at College Station

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at [aggiehonor.tamu.edu](http://aggiehonor.tamu.edu).

## Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact the Disability Resources office on your campus (resources listed below) Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

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*Disability Resources is located in the Student Services Building or at (979) 845-1637 or visit [disability.tamu.edu](https://disability.tamu.edu).*

**Title IX and Statement on Limits to Confidentiality**

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

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*Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services \(CAPS\)](#).*

*Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).*

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**Statement on Mental Health and Wellness**

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing available resources and services on your campus

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Students who need someone to talk to can contact Counseling & Psychological Services (CAPS) or call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org).

### Campus-Specific Policies

#### Texas A&M at Galveston

##### Classroom Access and Inclusion Statement

Texas A&M University is committed to engaged student participation in all of its programs and courses and provides an accessible academic environment for all students. This means that our classrooms, our virtual spaces, our practices and our interactions are as inclusive as possible and we work to provide a welcoming instructional climate and equal learning opportunities for everyone. If you have an instructional need, please notify me as soon as possible.

The Aggie Core values of respect, excellence, leadership, loyalty, integrity and selfless service in addition to civility, and the ability to listen and to observe others are the foundation of a welcoming instructional climate. Active, thoughtful and respectful participation in all aspects of the course supports a more inclusive classroom environment as well as [our mutual](#) responsibilities to the campus community.

*The following statements below are optional. Leave as is to include, or delete if preferred. Either way, delete this note.*

##### Statement on the Family Educational Rights and Privacy Act (FERPA)

FERPA is a federal law designed to protect the privacy of educational records by limiting access to these records, to establish the right of students to inspect and review their educational records and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings. Currently enrolled students wishing to withhold any or all directory information items may do so by going to [howdy.tamu.edu](https://howdy.tamu.edu) and clicking on the "Directory Hold Information" link in the Student Records channel on the MyRecord tab. The complete [FERPA Notice to Students](#) and the student records policy is available on the Office of the Registrar webpage.

Items that can never be identified as public information are a student's social security number, citizenship, gender, grades, GPR or class schedule. All efforts will be made in this class to protect your privacy and to ensure confidential treatment of information associated with or generated by your participation in the class.

Directory items include name, UIN, local address, permanent address, email address, local telephone number, permanent telephone number, dates of attendance, program of study (college, major, campus), classification, previous institutions attended, degrees honors and awards received, participation in officially recognized activities and sports, medical residence location and medical residence specialization.

### College and Department Policies