

## Syllabus: Math 409, Spring 2016, Section 502

---

### Instructor

- Name: Pavlos Motakis
- Office: BLOC 525B
- email: [pavlos@math.tamu.edu](mailto:pavlos@math.tamu.edu)
- Webpage: <http://www.math.tamu.edu/~pavlos/>
- Office hours: Wednesday, 13:30 to 15:00 p.m. (or by appointment).

### Lectures

Monday, Wednesday, and Friday at 10:20 - 11:10 a.m. in BLOC 121.

### Description

- Title: Advanced Calculus I.
- Credits: 3
- Prerequisites: Math 220 and Math 221.
- Webpage:
  - Common: <http://www.math.tamu.edu/courses/math409/>.
  - Specific to section: <http://www.math.tamu.edu/~pavlos/courses/Spring2016/Math409.html>.
- Course description: Axioms of the real number system; point set theory of  $\mathbb{R}$ ; compactness, completeness and connectedness; continuity and uniform continuity; sequences, series; theory of Riemann integration.
- Textbook: An Introduction to Analysis, fourth edition, by William R. Wade, published by Prentice Hall.
- Schedule: (**estimated**)
  1. Ordered field axioms, completeness axiom, mathematical induction, inverse functions and images, countable and uncountable sets (2.5 weeks).
  2. Limits of sequences, limit theorems, Bolzano-Weierstrass theorem, Cauchy sequences (3 weeks).
  3. Two-sided limits, one-sided limits and limits at infinity, continuity, uniform continuity (2.5 weeks).
  4. The derivative, differentiability theorems, the mean value theorem, Taylor's theorem and l'Hôpital's rule, inverse function theorems (3 weeks).
  5. The Riemann integral, Riemann sums, the fundamental theorem of calculus, improper Riemann integration (3 weeks).

### Help sessions

The Mathematics Department offers help sessions for Math 409. For further information, please visit <http://math.tamu.edu/courses/helpsessions.html>.

## Grading

The final grade of the course will be based on weekly assignments (20%), weekly quizzes (20%), two in-class exams (20% each) and a cumulative final exam (20%). Letter grades will be determined as follows: A (90% - 100%), B (80% - 89%), C (70% - 79%), D (60% - 69%), and F (0% - 59%).

## Exams

There will be two in-class exams and a cumulative final exam.

- Exam dates:
  - First in-class exam: Friday, February 26 (during class time)
  - Second in-class exam: Friday, April 8 (during class time)
  - Final Exam: Monday, May 9 2016, 8:00 a.m. to 10:00 a.m.
- During exams, all electronic devices (including, but not limited to, calculators, cellphones, laptops, tablets) are strictly forbidden. If you are unable to comply with this policy, you will be asked to leave class and will not be allowed to make-up any assignments missed in class that day. Don't forget to bring your ID to the exams!

## Attendance, Make-ups, and Cheating

- Academic Integrity Statement: Remember the Aggie code of honor; "An Aggie does not lie, cheat, or steal, or tolerate those who do." Please visit <http://student-rules.tamu.edu/aggiecode> for more details. There is no tolerance for any violation of the Aggie honor code.
- Make-up exams will be given only to students providing a University-approved excuse. If you miss an exam, you have to notify your instructor within 48 hours. Otherwise, the student forfeits her/his right to make-up. Visit <http://student-rules.tamu.edu/> for more details.
- Disability services: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

The syllabus is subject to change at the instructor's discretion.