

# Math 426 / 576

## FUNDAMENTAL CONCEPTS OF ANALYSIS III

Spring 2008

- Instructor: Tatiana Toro, Padelford C-343, Office Phone 543-1173.  
Email: [toro@math.washington.edu](mailto:toro@math.washington.edu). Office Hours: Monday 10-30–11:20, Friday 10:30– 11:20, or by appointment.
- Teaching Assistant: Mathew Badger, Padelford C-109.  
Email: [badger@math.washington.edu](mailto:badger@math.washington.edu) . Office hours: Tuesday 10:30-11:30, Thursday 10:30-11:30
- Class Meetings: MWF 11:30–12:20, LOW 205
- Course Web Site: <http://www.math.washington.edu/~toro/07-08/426/426.html>
- Text (required): The elements of integration and Lebesgue measure, Robert G. Bartle, New York, Wiley, 1995.
- Take home midterm: given on Monday, May 5, due on Friday, May 9 (6th week).
- Final exam: Wednesday, June 11, 2:30–4:30, LOW 205.
- Brief description: This course continues Math 424/574 – 425/575 and provides an introduction to measure theory and integration. Tentative plan:
  - Weeks 1-2: Introduction, Measurable Functions, Measures (Chapters 1-3)
  - Weeks 3-4: Generation of Measures, Lebesgue Measure (part of Chapters 9, 11-17)
  - Weeks 5-6: Integral, Integrable Functions (Chapters 4-5)
  - Weeks 7-8: Lebesgue Spaces  $L^p$  , Modes of Convergence, Decomposition of Measures (part of Chapters 6-8)
  - Weeks 9-10: Product Measures (Chapter 10).
- Guidelines: There will be a homework assignment due every Friday, at the beginning of the class (except for weeks 6 and 10). The first homework is due on April 4. Please STAPLE your homework and clearly mark it with your name. The weekly homework will only be partially graded. NO late homework will be accepted. Students may

work together on the homework, but they must write it individually. The general rules for academic honesty apply to all written work. Homework will count for 30% of the course grade. A take-home midterm will be given on Monday, May 5, and will be due on Friday, May 9. **Unlike the homework, you are not supposed to discuss the take-home test with anybody!** You can use your notes and the Text on the take-home test. The take-home midterm will count 30% of the course grade. There will be a comprehensive final exam on Wednesday, June 11, 2:30 – 4:30, which will count 40% of the course grade. The final exam will be closed book, no notes will be allowed. Calculators or other devices, such as ipods or cell phones will NOT be allowed on tests.

- GRADES. Your grade will be based on a weighted average of the following scores:
  - 30% Homework
  - 30% Take home midterm
  - 40% Final exam.
  
- Books in reserve:
  - The elements of integration and Lebesgue measure, Robert G. Bartle, New York, Wiley, 1995
  - Royden, H. L, Real Analysis, New York, Macmillan, 1988.
  
- DISCLAIMER: The syllabus is only intended to provide an overview of the class.