Principles of Analysis II: Math 447
Sections 200, 500, Spring 2016, TR 3:55–5:10 p.m. in BLOC 164

Professor: Michael Anshelevich, Blocker 533D, manshel@math.tamu.edu.
Webpage: [http://www.math.tamu.edu/~manshel/m447/m447.html](http://www.math.tamu.edu/~manshel/m447/m447.html).
Office hours: M 2–3:30 p.m., Th 10–11:30 a.m., or by appointment.
Text: Carothers, REAL ANALYSIS, Cambridge University Press, 978-0521497565.

Course Description: (Credit 3) Riemann-Stieltjes integration; introduction to Lebesgue measure theory and integration. Prerequisites: MATH 446 or approval of instructor; junior or senior classification.

Learning Objectives: By the end of the course, students (1) should be comfortable writing proofs (2) will learn how Lebesgue measure extends the notion of length, and the purpose of this extension, and (3) will master and learn to apply several versions of integration more general than Riemann’s construction. For future teachers, this knowledge will provide a valuable higher-level perspective for the integration results familiar from calculus. For the students interested in learning more advanced mathematics, this course provides essential background for Real Analysis, Probability, Harmonic Analysis, and numerous other courses.

Course outline:

- Riemann–Stieltjes integration (weeks 1–3).
- Measurable sets and functions (weeks 4–7).
- Lebesgue integration and $L^p$ spaces (weeks 8–10).
- Fourier series and additional topics (weeks 11–14, time permitting).

Exams: We will have two two-hour tests. The midterm exam will be around the middle of the term, time and date to be arranged in class. The final exam will be on Monday, May 9, 1–3 p.m. If, under completely exceptional circumstances, you need to miss one of the tests, a make-up exam will be given. Only University-approved excuses will be accepted, and you have to let me know preferably in advance, and no later than 2 days after the exam. The exams are closed book, closed notes, and calculators are not permitted. You should bring your ID to all tests.

Homework: weekly, due on Tuesdays in class. Homework problems may appear on the exams and quizzes. You are encouraged to work together, but straight copying of homework is not allowed. Late homework will not be accepted, but the lowest homework score will be dropped.

Grading: Homework 20%, quizzes 20%, each test 30%. A total score of 90% or more guarantees an A, a score of 80% or more a B, 70% or more a C, 60% or more a D.
**Difference between sections:** The 200 (honors) and 500 (regular) sections will have different tests and homework assignments. Some topics from the textbook will be discussed in class primarily for the benefit of the honors students, and will be required material for them but optional for the rest of the class.

**Scholastic Dishonesty:** Cheating of any form is not acceptable and it will be dealt with harshly. In particular, copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and it will be prosecuted to the full extent allowed by university policy. Students are encouraged to discuss the course material outside of class, and work on the homework assignments together, however all the homework turned in must represent the result of individual effort. In particular, copying the homework from any sources is not allowed. For more information on university policies regarding scholastic dishonesty, see the University Student Rules.

**Aggie Honor Code:** “An Aggie does not lie, cheat, or steal or tolerate those who do.”

**Students with disabilities:** Come talk to me no later than the first week of classes. “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](http://disability.tamu.edu).”

**Attendance:** According to the University Student Rules, absence for three or more class days requires a University-approved excuse and documentation.

**Other important dates:** January 25 (last day to add or drop a course), March 14–18 (Spring break), March 25 (reading day), April 19 (Q-drop), April 28 (last class).

**Keys to success:** Attend class (of course :) Solve *all* the homework problems, well before the exams. Spend more than seven hours per week working on the problems. Form study groups to discuss the course material and homework problems. Read ahead in the text.

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