

COURSE ANNOUNCEMENT

FALL 2007

MAT 472

Intermediate Real Analysis I

Instructor: Jack Spielberg
Time: 10:40 - 11:55 Tuesday & Thursday
Location: ECG 215
Schedule Line #: 80223
Credits: 3

Course Description: This is a rigorous foundation for analysis in metric spaces, with emphasis on the real line. Among the most important topics are compactness, uniform continuity, uniform convergence, and differentiation and integration of functions of one real variable. With any luck, we'll also see the Baire Category Theorem, the Weierstrass Approximation Theorem, and the Arzela-Ascoli Theorem.

This course is the first part of our qualifier sequence in analysis (the second part being MAT 473). The final exam also serves as the first half of the graduate program's qualifying exam in Real Analysis. However, the use of the final exam in determining final grades for this course is independent of its use by the graduate program.

This course gives an adequate preparation for graduate real analysis (MAT 570 at ASU).

Prerequisites: The formal prerequisites are MAT 342 (Linear Algebra) and MAT 300 (Mathematical Structures, our introduction-to-logic-and-proofs course). While MAT 371 (Advanced Calculus) is not formally required, many students find it essential as a warm-up for this course. The coverage of MAT 472 includes that of MAT 371 (and much more), at a significantly more sophisticated level.

Textbook: The lectures will be self-contained, and I will post notes on the web (usually after each class). Thus it is not required to buy a book. However, many people find it very useful to have a book. Any text covering topology in metric spaces, and advanced calculus on the real line, will be helpful. I will ask that the bookstore have copies of "Introduction to Analysis" by Rosenlicht. This is a good general text, and is an inexpensive paperback.

Questions should be addressed to the instructor at 965-3286, or by email to jack.spielberg@asu.edu.