Syllabus for Math 753
Theory of Functions of Real Variables I
Fall 2018

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Office Hours: 11-12 on MWF
Phone: (662) 915-7065

Lecture Time/Place: We meet MWF 8-8:50 in Hume 331.

Textbook: Real Analysis, 3rd edition, by H.L. Royden

Course Content: This is the first semester course on graduate real analysis in which we study
the Lebesgue theory of integration, founded upon the concept of a measure, \( \mu \), defined on a set, \( S \).
Intuitively, \( \mu \) is a function that sends subsets of \( S \) to numbers in \([0, \infty] \) (the extended positive real
numbers) and such that if \( A, B \subset S \) are disjoint, then \( \mu(A \cup B) = \mu(A) + \mu(B) \). Following the
structure of Royden’s book, we will initially restrict our discussion to the case when the set \( S \) is \( \mathbb{R} \) and
the measure on \( \mathbb{R} \) derives from the usual sense of distance between two real numbers: \( \mu([a, b]) = b - a \),
in other terms, the measure of a closed interval, \( [a, b] \), is its length.

Grading Scheme: There will be a total of 500 (\( 2 \times 100 + 5 \times 20 + 200 \)) possible points with the
following breakdown:
- 2 midterm exams worth 100 points each.
- 5 homework assignments are worth a total of 100 points.
- The final exam is worth 200 points.

If the percentage score you earn on the final is higher than your lowest midterm score, then your
lowest midterm will be dropped and the final counted out of 300 points. Missed exams will receive a
zero score and cannot be made up.

Your final letter grade in the course will be related to your percentage score as follows:

\begin{align*}
A & : 93-100\% \\
A- & : 90-93\% \\
B+ & : 87-90\% \\
B & : 83-87\% \\
B- & : 80-83\% \\
C+ & : 77-80\% \\
C & : 70-77\% \\
D & : 60-70\% \\
F & : < 60\%
\end{align*}

Attendance: There will be point penalties for missing more than four lectures.

Homework: There will be 2 to 3 homeworks pertaining to the content of each midterm exam.
Important Dates:

**Midterms:** Friday 10/05 and Friday 11/16

**Final:** Monday, Dec. 3\textsuperscript{rd} at 8am

### Tentative Schedule

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<tr>
<th>Weekly Date Range</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
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<td>8/27 → 8/31</td>
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<td><strong>The Final</strong></td>
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