

**Instructor: Professor Monica Torres**

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Office: MATH 634

**Course information:  
MA544: Measure Theory**

- Outer measures, Lebesgue measure, measures on abstract spaces.
- Measurable functions, Egorov's theorem, Lusin's Theorem.
- Integration, Fatous's Lemma, Monotone Convergence Theorem, Lebesgue's Dominated Convergence Theorem.
- Comparison between Riemann and Lebesgue integral,  $L^p$  spaces, Fubini's Theorem, convolutions.
- Differentiation, Covering Theorems, Lebesgue points, Fundamental Theorem of Calculus.

**Homeworks:**

- Homework is due every Friday and will be posted on Brightspace. Homework needs to be scanned and uploaded on Gradescope.
- The lowest homework grade will be dropped in the final calculation of your grade.
- All grades will be posted on Brightspace.

**Book:**

Modern Real Analysis, by William P. Ziemer (with contributions by Monica Torres). Chapters 4-7.

**Tests:**

We will have two midterms at night. We will also have a final exam. The dates and location of the midterm exams are posted on Brightspace.

**Grades:**

Homework 10%  
Midterm 1 30%  
Midterm 2 30%  
Final exam 30%

How to calculate your final grade: For example, if at the end of the semester a student has an average of 9/10 in homeworks, and the grades of the exams are 80/100 (first midterm),

92/100 (second midterm) and 82/100 (final exam), then the final number is calculated as follows:  $9 + 80 (.30) + 92 (.30) + 82 (.30) = 85.2$ . Hence, the final percentage would be 85.2%

According to the math department policy, students who get at least 97% of the total points in this course are guaranteed an A+, 93% guarantees an A, 90% an A-, 87% a B+, 83% a B, 80% a B-, 77% a C+, 73% a C, 70% a C-, 67% a D+, 63% a D, and 60% a D-. **For each of these grades, a lower percentage might be enough to get that grade. This will depend on the overall performance of the class.**

### **Information about the Disability Resource Center:**

Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are encouraged to contact the Disability Resource Center at: [drc@purdue.edu](mailto:drc@purdue.edu) or by phone: 765-494-1247, as soon as possible.

If the Disability Resource Center (DRC) has determined reasonable accommodations that you would like to utilize in this class, you must send your Course Accommodation Letter to the instructor. Instructions on sharing your Course Accommodation Letter can be found by visiting: <https://www.purdue.edu/drc/students/course-accommodation-letter.php>. Additionally, you are strongly encouraged to contact the instructor as soon as possible to discuss implementation of your accommodations.

### **Drop/Add calendars:**

In accordance with the university policy, the course drop deadlines have been set at the end of week 13 (April 16 for Spring 2026). For other important dates, you can access the Drop/Add calendars by visiting:

<https://purdue.edu/registrar/calendars>

and scrolling down to locate the Drop/Add Refund and Deadline Calendars.

### **Quiet Period:**

Per university regulations, the week preceding final exams is designated as the Quiet Period (April 27 – May 2 for Spring 2026).

### **Homework, online resources, and the use of AI**

Since notes or electronic devices are not allowed during the two midterms and the final exam, and in order to understand the material, the student would benefit from trying homework problems without the use of online resources like AI. Additionally, students are expected to solve problems on exams and homeworks with the methods developed in class. Discussing homework problems with classmates is recommended.