

MATH 467 (MAST 669/MAST 837), Sec. D

Measure Theory
Winter 2021

Preface: Due to exceptional circumstances, this course will be taught and all assessments will be done completely ONLINE.

Instructor: Dr. P. Gora
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Office Hours: _____

Delivery Method: Lectures will be given using Zoom. The lectures will be recorded and posted on Moodle together with other materials.

Textbook: *Real Analysis*, by H.L. Royden (3rd or 4th Edition).
The textbook will be available at:
<https://www.bkstr.com/concordiastore/home>
Note: Students should order textbooks as early as possible, especially for printed versions in case books are backordered or there are any shipping delays.

Other Textbooks: *A Crash Course on the Lebesgue Integral and Measure Theory*, by Steve Cheng
<https://www.gold-saucer.org/math/lebesgue/lebesgue.pdf>

A User-Friendly Introduction to Lebesgue Measure and Integration, by Gail S. Nelson, AMS 2015.

Topics: The main part of the course will consist of the following topics taken from the text (Chapters 3-6, 11, 12 in Royden, 3rd Edition):

- Lebesgue measure
- Lebesgue integral
- Differentiation and integration
- Lebesgue (L^p) spaces
- Abstract measure theory

Additional topics may be covered if time permits.

Assignments: Assignments will be posted on Moodle weekly. The solutions should be submitted electronically on Moodle by the due date. Assignments are *very important*; they indicate the level of difficulty of the problems that the students are expected to understand and solve. Therefore, every effort should be made to do and understand them *independently*. The assignments will be corrected and a representative sample graded (some problems may be not graded), with solution sets posted weekly. These grades together are worth a maximum of 15%.

Midterm Test: There will be a midterm test in week 7 or 8. The exact date of the exam will be announced in class at least a week in advance.

Final Exam: Both Midterm and the Final will be some form of timed take home exam.

Evaluation: Homework 15%, Midterm exam 25%, Final exam 60%.
Graduate students will be required to do additional or alternative work, to be determined.

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Academic Integrity and the Academic Code of Conduct

This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." [Undergraduate Calendar, Sec 17.10.2]

Behaviour

All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications.

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Extraordinary circumstances

In the event of extraordinary circumstances and pursuant to the [Academic Regulations](#) the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.