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Department of Mathematics

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\(MAA6616\) Fall  
2023](#)

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# Analysis I (MAA6616) Fall 2023

## Time and Location

MWF 4, Little 217

Office hours: TBA

## Description and Goals

This course treats the fundamentals of measure and integration theory, including  $L_p$  spaces and the Radon-Nikodym theorem; and an introduction to functional analysis, including Banach spaces, Hilbert spaces, and the theory of linear operators. Other topics that may be included (depending on time and interest) are harmonic analysis and the Fourier transform, the theory of distributions, the spectral theorem, and an introduction to probability.

**Text:** There is no required text for this course. A complete set of lecture notes will be posted on the webpage as the course progresses.

Some standard texts that treat the material covered in this course are:

[Measure, Integration & Real Analysis](#) by Sheldon Axler (this book can be freely downloaded at the link provided)

[Real Analysis: Modern Techniques and Their Applications](#) by Gerald B. Folland

[Real and Complex Analysis](#) by Walter Rudin

[Real Analysis](#) by H. L. Royden

[Real Analysis: Measure Theory, Integration, and Hilbert Spaces](#) by Eli Stein and Rami Sharkachi

Some additional references for the first part of the course (on measure theory) are:

[Measure Theory](#) by Paul Halmos

[An Introduction to Measure Theory](#) by Terence Tao

## Lecture Notes

A pdf file of the course lecture notes will be posted here once the course begins.

## Homework

*“Because thought has by now been perverted into the solving of assigned problems, even what is not assigned is processed like a problem.”* –Theodor Adorno

There will be a total of 12-15 homework problems assigned through the semester.

## Grades

Grading will be trivial provided you participate and do the homework. There will be a midterm and possibly a final exam, depending on interest.

## Attendance

Attendance is recommended.

## University policies and resources

**Grades:** Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

**Honor Code:** “UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The [Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.”

**Class Attendance:** “Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.”

**Accommodations for Students with Disabilities:** “Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.”

**Online Evaluations:** “Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.”

**Contact information for the Counseling and Wellness Center:**

<https://counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

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