

# Analysis II (MAA6617)

## Time and Location

M W F 4, Little 219

## 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. Of the texts listed below, the course will come closest to the treatment in Folland, so if you would like to have a book to look at, that is the one I recommend. The first two-thirds of the course (all of the fall semester and continuing into the spring) will correspond roughly to Chapters 2, 3, 5, and 6 of Folland.

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

[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

Current lecture notes

(updated 4/16/14)

Fall 2013 lecture notes

(updated 1/6/14)

## Homework

Homework will be assigned and graded weekly; assignments will be posted below as the semester progresses.

Midterm exam: Wednesday 3/12

Homework 8 (due Friday 4/11/14): Problems 35.23, 35.24

Homework 7 (due Friday 3/28/14): Problems 35.4, 35.8

Homework 6 (due Friday 3/21/14): midterm exam corrections

Homework 5 (due Wednesday 2/26/14): Problems 28.3, 28.4

Homework 4 (due Wednesday 2/19/14): Problems 26.6, 26.12

Homework 3 (due Monday 2/10/14): Problems 22.6, 24.5, 24.6

Homework 2 (due Friday 1/31): Problems 20.18, 20.19, 22.5

Homework 1 (due Wednesday 1/14): Problems 20.2 and 20.3 (see current lecture notes)

## University policies and resources

Dean of Students:

[Academic Honesty Guidelines](#)

(includes Code of Student Conduct, University of Florida Honor Code)

[Disability Resources](#)

[Americans with Disabilities Act Compliance](#)

[Mathematics Department Policy on Incompletes](#)

[UF Policies for assigning grade points](#)

(This link has nothing to do with the grading policies of this course; rather it explains how letter grades are converted to grade points for the purpose of computing GPAs.)