18.102 Introduction to Functional Analysis

Spring 2009

Lecture 2. Thursday, 5 Feb.

Plan:- Linear maps between normed spaces are continuous iff they are bounded. The best bound gives a norm. If the second space is Banach the space of linear operators is Banach. Corollary – the dual space of a normed space is a Banach space. Examples: Integral operators on $\mathcal{C}^0([0,1])$ with respect to supremum or L^1 norms. Differentiation as an operator from $\mathcal{C}^1([0,1])$ to $\mathcal{C}^0([0,1])$

In practice:- I did not get to the part about differentiation.

Reading:

(1) Wilde:- Chapter 2 to 2.7
(2) Chen:- First part of Chapter 6 and of Chapter 7.
(3) Ward:- Chapter 3, first 2 sections.