

Math 920: Functional Analysis

Instructor

Brent Nelson
brent [at] math.msu.edu
D215 Wells Hall

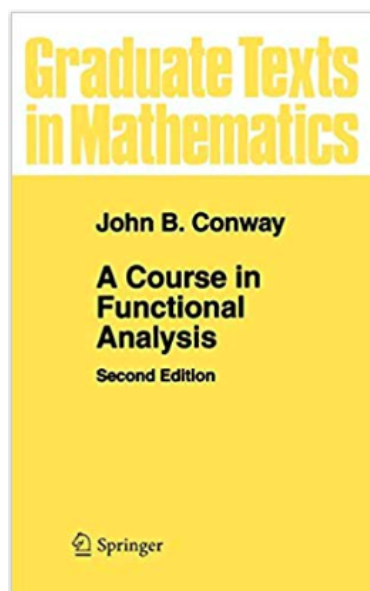
Lecture

Wednesdays and Fridays
1:00 - 2:20 pm
C304 Wells Hall

Office Hours: Wednesdays 2:30 - 3:30 pm and by appointment.

Course Webpage: <https://www.math.msu.edu/~banelson/920.html>

Textbook: John B. Conway, *A Course in Functional Analysis*, Second Edition, Springer.



Course Description: This course will cover Hilbert spaces, Banach spaces, and locally convex vector spaces. Topics will include Riesz representation theorem, Parseval's identity, Riesz-Fisher theorem, Fourier series operators, Hahn-Banach theorem, open mapping and closed graph theorems, Banach-Steinhaus theorem, duality theory for locally convex spaces, convexity, Krein-Milman theorem, theory of distributions, compact operators. This roughly corresponds to Chapters I-V in the textbook.

In-Class Tone: My aim is to foster an open and inclusive atmosphere in class. Therefore questions, participation, collaboration, and curiosity are strongly encouraged. Math can be hard, especially when we aren't honest with ourselves about whether or not we understand something. Confusion is not a sign of weakness, nor is asking for help. If you need help beyond class time and office hours, please do not hesitate to contact me so that we can work out additional times to meet.

Grading: Grades will be based on in-class participation (including attendance) and homework.

Homework: There will be a total of 7 homework assignments. These will be posted on the course webpage, and will be collected at the beginning of lecture every other Friday. Collaboration is allowed (encouraged even), but your written work must clearly be your own. No late homework will be accepted.

Academic Integrity: Students are expected to adhere to MSU's standards of academic integrity and the Spartan Code of Honor, as outlined [here](#).

Student Accommodations: If the Resource Center for Persons with Disabilities (RCPD) has determined that you eligible for classroom accommodations, then you should submit a [Verified Individualized Services and Accommodations document](#) (VISA) to the instructor no later than Friday, January 17th.