

Functional Analysis

2025-2026 Fall

MAT 520

GRADING BASIS:

Graded A-F, P/D/F, Audit

INSTRUCTORS:

- [Jacob Shapiro MATH](#)

LINKS:

- [Books](#)
- [Evaluations](#)

Description:

Basic introductory course to modern methods of analysis. The possible topics may include L_p spaces, Banach spaces, uniform boundedness principle, closed graph theorem, locally convex spaces, distributions, Fourier transform, Riesz interpolation theorem, Hardy-Littlewood maximal function, Calderon-Zygmund theory, oscillatory integrals, almost orthogonality, Sobolev spaces, restriction theorems, spectral theory of compact operators, applications to partial differential equations.

Sample Reading List:

- E.M. Stein and R. Sharkey, *Functional Analysis: Intro to Further Topics in Analy* (2011)

See instructor for complete list.

Reading/Writing Assignments:

15% of the course grade will depend on performance of weekly assignments/problem sets.

Requirements/Grading:

- Mid term exam - 35%
- Oral presentation(s) - 45%
- Class/precept participation - 5%
- Problem set(s) - 15%

Other Requirements:

- Not Open to First Year Undergraduates.

Prerequisites and Restrictions:

MAT 314/320, 332; MAT 317/330 or MAT331/335 helpful but not required.
Undergrads must obtain permission by instructor.

Schedule/Classroom Assignment:

CLASS NUMBER	SECTION	MEETINGS	SEATS OPEN	SEATS ENROLLED	STATUS
22397	C01	T Th, 2:55 pm – 4:15 pm, View Room	12	18	Books