

MATH 7310: REAL ANALYSIS AND LINEAR SPACES I

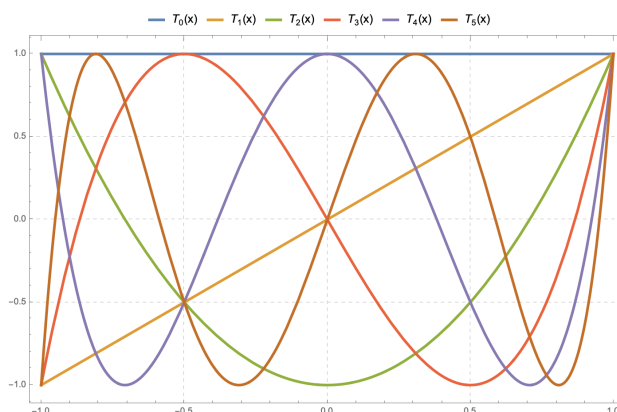
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1. *Graduate real analysis*

This course introduces students to basic analytic tools used across all of mathematics:

- Measures, including the Lebesgue measure on the line
- Lebesgue integration
- L^p and Hilbert spaces
- Absolute continuity, differentiation of measures

Additional topics included in the course will range from applications to probability (e.g., theory of conditional expectations, Gaussian measures and Gaussian Free Field, ...) to selected topics from classical analysis (orthogonal polynomials, numerical methods, steepest descent, ...), as time permits.



The first six Chebyshev polynomials of the first kind.

2. *Necessary information*

Class times: TuTh 2:00PM - 3:15PM in *Kerchof Hall 317*

Instructor: Leonid Petrov

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Office: 209 Kerchof Hall

Office hours: Tuesday and Thursday 10-11am, except the weeks when I'm **traveling**.¹ Also feel free to drop in with quick questions any time, or make appointments (you can make as many appointments as you want).

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An up to date syllabus is always on **GitHub** at https://github.com/lenis2000/Syllabi/blob/master/Syllabus_7310_s19.pdf. For direct PDF download use [this link](#). L^AT_EX source with *changes* to the syllabus is [here](#) (click “History”).

¹Note: this PDF has green clickable links.