

Math 4567
Applied Fourier Analysis, Fall 2023

SYLLABUS

Time and Place: 12:20 pm - 1:10 pm MWF Vincent Hall 1 (9/6/23-12/13/23)
Text: J.W. Brown, R.V. Churchill. Fourier Series and Boundary Value Problems. **8th Edition.**
Instructor: Sergey G. Bobkov
Office: Vincent Hall 228. Email: bobkov@math.umn.edu
Office hour: 1:25 pm - 2:15 pm F

4567. Applied Fourier Analysis.

Orthonormal functions, best approximation in the mean. Fourier series, convergence point-wise and in the mean. Applications to boundary value problems. Sturm-Liouville equations, eigenfunctions. Fourier transform and its applications.

WEEK	DATES	MATERIAL (preliminary distribution)
1	09-06 to 09-08	Review of Lebesgue integration
2	09-11 to 09-15	Chapter 7
3	09-18 to 09-22	Chapter 1
4	09-25 to 09-29	Chapter 2
5	10-02 to 10-06	Chapter 2
6	10-09 to 10-13	Chapter 3; Test 1
7	10-16 to 10-20	Chapter 3
8	10-23 to 10-27	Chapter 4
9	10-30 to 11-03	Chapter 5
10	11-06 to 11-10	Chapter 8; Test 2
11	11-13 to 11-17	Chapter 8
12	11-20 to 11-22	Chapter 8; Friday: Thanksgiving
13	11-27 to 12-01	Chapter 6
14	12-04 to 12-08	Chapter 6
15	12-11 to 12-13	Chapter 6; Test 3

Homeworks: You will have 4 homeworks due on Wednesdays:
October 4, 25, November 15, December 6

Tests: Monday, October 09, 2023
Friday, November 17, 2023
Wednesday, December 13, 2023

Composition of grade: Every test: 20% of total grade
Every homework: 10% of total grade