

Math 4567

Applied Fourier Analysis, Spring 2014

### SYLLABUS

Time and Place: 1:25 pm - 2:15 pm MWF – Vincent Hall 6  
Text: J.W. Brown, R.V. Churchill. Fourier Series and Boundary Value Problems. **8th Edition.**  
Instructor: Sergey G. Bobkov  
Office: 228 VinH ( tel: 625-1840, email: bobkov@math.umn.edu )  
Office hours: 2:30 pm - 3:20 pm W and by appointment

#### 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	01-22 to 01-24	Review of Lebesgue integration
2	01-27 to 01-31	Chapter 7
3	02-03 to 02-07	Chapter 1
4	02-10 to 02-14	Chapter 2
5	02-17 to 02-21	Chapter 2
6	02-24 to 02-28	Chapter 3
7	03-03 to 03-07	Chapter 3
8	03-10 to 03-14	Exam 1; Chapter 4
	03-17 to 03-21	(Spring break)
9	03-24 to 03-26	Chapter 5
10	03-31 to 04-04	Chapter 8
11	04-07 to 04-11	Exam 2; Chapter 8
12	04-14 to 04-18	Chapter 8
13	04-21 to 04-25	Chapter 6
14	04-28 to 05-02	Chapter 6
15	05-05 to 05-09	Chapter 6; Exam 3

**Homeworks:** You will have 5 homeworks due on February 10, March 3, 31, April 21 and May 5 (for every homework you have at least 2 weeks)

**Midterm exams:** Monday, March 10, 2014  
Monday, April 7, 2014  
Friday, May 9, 2014

**Composition of grade:** Every exam: 25% of total grade  
Homeworks: 25% of total grade