MAT 532, Stony Brook University, Fall 2017

This version is subject to change. Check for updates throughout semester

Lecture times and places: TuTh 1:00-2:20 Physics 122, Prof. C. Bishop

Text: *Real Analysis*, Gerald Folland, 2nd edition, Wiley.

Class Webpage: `http://www.math.sunysb.edu/~bishop/classes/math544.F14`

Tentative Schedule: The table lists the sections we will cover in each lecture. Revisions may be made during the semester.

WEEK	STARTING	TUESDAY	THURSDAY
1	Aug 28	FIRST CLASS	1.2
2	Sept 4	NO CLASS	1.3
3	Sept 11	1.4	1.5
4	Sept 18	2.1	2.2
5	Sept 25	2.3	2.4
6	Oct 2	2.5	2.6, 3.1
7	Oct 9	3.2	3.3
8	Oct 16	3.4	review
9	Oct 23	MIDTERM (Chap 1 and 2)	3.5
10	Oct 30	3.5	4.1-4.5
12	Nov 6	4.6	4.7
13	Nov 13	5.1	5.2
14	Nov 20	NO CLASS	NO CLASS
15	Nov 27	5.3	5.4
16	Dec 4	5.5	Review

Important Dates:

August 29: first day of class

Sept 5,6: Labor Day, no class

Nov 23-17: Thanksgiving break, no class

Dec 9: last class

Dec 18: Monday, Final exam 5:30pm-8:00pm

Contact information and office hours:

Prof. Bishop: Math Tower 4-112, TuTh 10-11am, `bishop@math.sunysb.edu`

Grader: Dahye Cho, Math Tower S-240A `Dahye.Cho AT stonybrook.edu`

Grades: Homework, a midterm and a final will each count for a third of the grade.

Homework: Problems will be assigned from most sections. Homework is generally due at lecture on Tuesdays; see dates below (these will be filled in according to our progress).

The general rule on problem sets, is that problems for whatever sections I cover one week are due the Thursday of the following week. I will try to update the table below each week as we complete the sections.

Section	Topic	Due	Homework problems
0	Prerequisites	9-7	handout
1.2	Sigma fields	9-14	3,4
1.3	Measures	9-14	8,10,12,14
1.4	Outer measures	9-21	17,18,19
1.5	Borel measures	9-21	29,30,31,33
2.1	Measurable functions	9-28	3,4,7,9
2.2	Integration, positive	9-28	13,15,16
2.3	Integration, complex	10-5	19,20,21,25
2.4	Modes of convergence	10-5	33,36,39,44
2.5	Product measures	10-12	46,47,48,50
2.6	n-dim Lebesgue measure		—
2.7	Polar coordinates		—
3.1	Signed measures	10-19	2,3,6
3.2	Radon-Nikodym theorem	10-19	9,11,13,17
3.3	Complex measures		—
3.4	Differentiation	11-2	22,23,25
3.5	Bounded variation	11-9	30,31,37,39,40
4.6	Arzelà-Ascoli	11-16	64,65
4.7	Stone-Weierstrass	11-16	68,69,70
5.1	Normed vector spaces	11-30	4,8,9,11,12
5.2	Linear functionals	11-30	19,22,25
5.3	Baire Category	12-7	27,30,32,38,39
5.4	Topological vector spaces	12-7	45,47,48
5.5	Hilbert spaces	*	55,56,58,63,66

* = one of the listed problems from Section 5.5 will be on the final.

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