

## MATH 246A - Spring 2008 Complex Analysis

MWF 1:00 MS 5117 and Thurs 1:00 MS 5117

### Office hours:

John Garnett: MWF 4:00 in MS 7941; William Meyerson: ThF 2:00 in MS 2961.

### Texts:

- 1) L. Ahlfors, Complex Analysis, 3rd. Edition, (0-07-000657-1) (required)
- 2) D. Sarason, Complex Function Theory, 2nd. Edition, American Mathematical Society, 2007 (0-8218-4428-8) (recommended)
- 3) T. W. Gamelin, Complex Analysis, (0-387-95069-9) (recommended)

**Grades:** Homework 30%, final 50%, midterm 20%. There will be four homework assignments of 15 - 20 problems each. You must also present at least one homework problem at the blackboard in quiz section.

**Prerequisites:** Rigorous advanced calculus: Properties of  $\mathbb{R}$ , least upper bounds, uniform convergence of sequences of continuous functions ( $\Rightarrow$  limit is continuous and Riemann integral of limit is limit of integrals), compact and connected sets in  $\mathbb{R}^n$ . Also, the ability to write a correct mathematical proof. However, neither Math 245 nor undergraduate complex analysis are required prerequisites.

**Material:** Most of Chapters 1 - 4 of Ahlfors, except the Elementary Point Set Topology section which will be assumed. The rest of the Ahlfors book will be covered in 246B in Fall 2008.

**Homework Assignment 1, due Monday April 14:** All from Ahlfors, 3rd. Edition. p. 6, #1. p. 9, #3, 4, 5. p. 11, #1, 4. p. 15, #2, 4. p. 16. #4, 5. p. 17. #2, 3, 5. p. 20. #1, 2, 4, 5.

**Homework Assignment 2, due Monday April 28:** All from Ahlfors, 3rd. Edition. p. 28 #5, 7. p. 32. #2, 3, 4, 5. p. 41, #8, 9. p. 47, #1, 2, 9. p. 78. #3, 4. p. 82. #1, 2, 4, 5, 6, 7, 8.

**Homework Assignment 3, due Monday May 19:** All from Ahlfors, 3rd. Edition. Page 83; 5, 6. Page 88; 2, 3, 4. Page 97; 3, 4, 5, 6. Page 108; 3, 4, 6, 7. Page 117; 2, 3. Page 120; 2, 3. Page 123; 2, 3, 4, 6.

**Homework Assignment 4, due Friday, June 6:** p. 129, 3, 4, 5, 6; p. 133, 1, 2, 4; p. 148, 2, 3, 4, 5; p. 154, 2, 3; p. 161. 2, 3, 4, 5.