

MATH 324 – Complex Analysis

Spring 2015

Lecture. MWF 1:30–2:20

Prerequisites. MATH 220 (Multivariate Calculus) & MATH 221 (Linear Algebra)

Instructor. Dr. Matthias Beck

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Office hours. W 11–12, F 10–11 & by appointment

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Course objectives. Our goal is to study the calculus of functions in one complex variable. That is, we will look at concepts of real-variable functions and see which of these concepts and their accompanying theorems can be transferred into the complex realm, which have to be modified, and which don't exist in the world of complex numbers. We will see that there are concepts and theorems in all of these three categories. Topics we will study include complex numbers and functions, differentiation, integration, Cauchy's theorem and its consequences, harmonic functions, power and Laurent series, and residues.

Text. M. Beck, G. Marchesi, D. Pixton, and L. Sabalka, *A First Course in Complex Analysis*, version 1.41 (<http://math.sfsu.edu/beck/complex.html>).

Grading system & exam dates.

- 40% Homework
- 20% Midterm I (3/9)
- 20% Midterm II (4/13)
- 20% Final Exam (scheduled by registrar)

Grades will be assigned according to the following scheme:

87-100% A 75-86% B 60-74% C 50-59% D 0-49% F

I want to ensure you accomplishes the goals of this course as comfortably and successfully as possible. At any time you feel overwhelmed or lost, please come and talk with me.

Homework. I will assign homework problems as we go through the material. We can discuss the homework problems at any time during class. I will assign certain problems to be handed in; they will be due on the beginning of the Friday classes. You may hand problems in early to be able to correct your mistakes. Although you may (and should) work together with your class mates, the solutions you hand in have to be your own.

The way to *learn* math is through *doing* math. It is vital and expected that you attend every lecture and discussion session. You will get a good feel for the math from there, but it is even more crucial that you do the homework. Working in groups is not only allowed but strongly recommended.

This syllabus is subject to change. All assignments, as well as other announcements on tests, policies, etc., are given in class. If you miss a class, it is your responsibility to find out what's going on. Always ask lots of questions in class; my courses are interactive. You are always encouraged to see me in my office.