

Mathematics 300, Introduction to Complex Variables, Section 201.
January - April 2017, Mathematics Annex, rm. 1100, TuTh 14:00-15:30

Instructor: Zinovy Reichstein

Office: 1105 Math Annex

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Textbook: E.B. Saff, A.D. Snider, Fundamentals of Complex Analysis with Applications to Engineering, Science and Mathematics, third edition.

Course description: We will begin by discussing the complex numbers and functions of a complex variable, then proceed to develop differential and integral calculus in this setting. The resulting theory is very beautiful and in many ways quite different from the "usual" calculus for functions of either one or several real variables. Complex analysis has many applications to science, engineering and other areas of mathematics.

We will go over (most of) chapters 1-6 in the text, covering the following topics: complex numbers, complex derivatives and analytic functions, elementary functions, contour integration, Cauchy's theorem, Cauchy's Integral Formula, Taylor series, Laurent series, singularities and residues.

The specific sections I plan to cover, subject to minor changes along the way, are 1.1-1.6, 2.1-2.6, 3.1-3.3, 3.5, 4.1-4.6, 5.1-5.6, 6.1-6.3.

Office Hours:

Tuesday 10:30-11:30, in 1105 Math Annex

Wednesday 2:30-3:30, in 1105 Math Annex

Thursdays 11-12, in LSK 300B

Fridays 11-12, in LSK 300B

Homework will be posted on line and collected in class, usually on a weekly basis. A portion of each assignment will be marked.

Exams: There will be two midterms and a final exam. The midterms will be given in class Thursday, February 9 and Thursday, March 16. The final exam is scheduled for Thursday, April 13 at 3:30pm. No books, notes or calculators will be allowed on any of the exams.

Marking scheme: I will compute the total term mark in two ways,

Total 1 := Homework (20%) + Midterm 1 (20%) + Midterm 2 (20%) + Final exam (40%), and

Total 2 := Homework (20%) + Best midterm (20%) + Final exam (60%),
and use the higher of these two numbers.

Website: For detailed up-to-date information on this course, see the course web page at <http://www.math.ubc.ca/~reichst/300S17sy11.html>