

Mathematics 300, Introduction to Complex Variables, Section 201.
January - April 2019, TuTh 14:00-15:20, LSK 200

Instructor: Zinovy Reichstein

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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.

Homework will be posted on line and collected in class. A portion of each assignment will be marked.

Website: For more detailed up to date information on this course, see the course web page at <http://www.math.ubc.ca/~reichst/300S19syll.html>