

MA 713
Complex Variables
Paul Blanchard
Spring 2005

Class time and location: MWF 12:00–1:00 in MCS B29

Text: Lars V. Ahlfors, *Complex Variables*, 3-th Edition. McGraw-Hill, 1979.
ISBN number 0070006571.

This will be a traditional graduate-level course in the theory of complex variables. During the first two-thirds of the semester, we will cover many of the standard topics: the Cauchy-Riemann equations, Cauchy's Theorem, the Cauchy Integral Formula, harmonic functions, Taylor series, Laurent expansions, the classification of singularities, and residues. For the remainder of the semester, we will discuss specialized topics such as conformal mapping, infinite sum and infinite product expansions, and if there is sufficient time, we will discuss Riemann surfaces and the role of the Poincaré metric in the theory of complex analysis.

This course is primarily intended for graduate students in mathematics, but it is also of interest to students in physics or engineering. An undergraduate course in complex variables is a desirable prerequisite, but it is not a necessity. The most important prerequisite is “sufficient mathematical maturity.”

Assignments and grading: Problems will be assigned and graded weekly. There will also be a take-home midterm and a take-home final. Your grade will be determined from the problem sets and the exams.

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Office hours: Monday 2:30–3:30, Thursday 11–12, and Friday 2–3.