

MA 713
Complex Variables
Paul Blanchard
Spring 2011

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

Text: Lars V. Ahlfors, *Complex Variables*, Third Edition. McGraw-Hill, 1979.
ISBN number 0070006571. There is also a paperback “international” edition
that is available in the U.S. Its ISBN number is 0070850089.

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, Wednesday 2–3, and Friday 3–4.

Course web page: <http://math.bu.edu/people/paul/MA713.html>

Academic conduct: Your work and conduct in this course are governed by the CAS Academic Conduct Code. This code is designed to promote high standards of academic honesty and integrity as well as fairness. A copy of the code is available on the CAS web site and in CAS Room 105 if you cannot access it on the web. It is your responsibility to know and follow the provisions of the code. Any cases of suspected academic misconduct will be referred to the CAS Student Academic Conduct Committee. We will discuss the degree to which joint work is allowed when your homework and exams are assigned.