

Mathematics 655 — Complex Analysis

Spring 2005

Time& Place: MW 19:00 - 20:15; JR 215;

Instructor: Werner Horn

Office: FOB 404, Tel. 677 7794;

Website: www.csun.edu/hcmth017;

Pre-requisites: Math 455 or an equivalent one semester undergraduate introduction to Complex Analysis, Math 501 or demonstrated knowledge of basic topological concepts.

Textbook: There will be no required textbook, however, students are encouraged, to read L. Ahlfors, *Complex Analysis* to accompany the class.

Homework: Homework will be assigned weekly and collected the following Wednesday. It will account for 20% of the grade.

Midterm Exams: Two Midterms will account for 25% of the grade each.

Final Exam: A cumulative final exam will account for 30% of the final grade.

Website: www.csun.edu/hcmth017/math650.html.

Contents:

Complex Analysis is one of the great achievements of 19th century mathematics. It was developed in part to aid Analytic Number Theory, but soon became a discipline in its own right with far reaching applications in mathematics and physics. Its great beauty comes from the fact that it unites methods from the three classical branches of mathematics – Algebra, Analysis, and Geometry – in a single discipline.

This course will cover the crucial concepts of the discipline in detail, including preliminary results, integration on paths, the Cauchy formula and its applications and conformal mappings.