

Math 617-600

Theory of Functions of a Complex Variable I

Harold P. Boas

Fall 1998

General course information

About the course

This is a first rigorous course in the theory of functions of one complex variable. The basic objects studied in the course are holomorphic (complex analytic) functions. The course covers the representation of holomorphic functions by power series and by integrals; complex line integrals, Cauchy's integral formula, and some of its applications; singularities of holomorphic functions, Laurent series, and computation of definite integrals by residues; the maximum principle and Schwarz's lemma; conformal mapping; and harmonic functions.

Textbook The required textbook is *Function Theory of One Complex Variable* by Robert E. Greene and Steven G. Krantz, Wiley, 1997. We will cover chapters 1–7.

Prerequisite The official prerequisite for this course is Math 410 (Advanced Calculus II) or its equivalent. The essential background you need is familiarity with the kind of analytic reasoning used in “ ϵ - δ proofs”. Math 617 and its successor Math 618 form the basis for the Mathematics Department Qualifying Examination in Complex Analysis.

Venue The course meets 12:40–13:30 Monday, Wednesday, and Friday in ZACH 105D.

Home page The URL of the home page for the course is
<http://www.math.tamu.edu/~harold.boas/courses/617-98c/>.

About the instructor

Dr. Harold P. Boas

E-mail address boas@math.tamu.edu

Office location 322 Milner Hall

Office hours 14:00–15:00 Monday, Wednesday, and Friday; and by appointment

Office telephone number 409-845-7269

Exam dates

- Friday, October 9
- Friday, November 20
- Final examination: 10:30–12:30, Monday, December 14

Grading

The final examination and the homework each count for 30% of the course grade. The two mid-term examinations each count for 20% of the course grade. Final letter grades will be based on the standard scale: you need an average of 90 for an A, 80 for a B, 70 for a C, 60 for a D.