Theory of Functions of a Complex Variable I

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 (that is, 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 We will be using an out-of-print book, *Invitation to Complex Analysis*, by Ralph P. Boas (my father). I am in the process of preparing a new edition of the book, and I will post pdf files of the chapters as the course progresses.

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 (epsilon-delta) proofs". Math 617 and its successor Math 618 currently form the basis for the Mathematics Department Qualifying Examination in Complex Analysis.

Venue The course will meet on Tuesdays and Thursdays, 2:20-3:35 P.M., in BLOC 111.

Home page The home page for the course is `http://www.math.tamu.edu/~harold.boas/courses/617-2006c/`.

The instructor

The instructor is Dr. Harold P. Boas. The email address is `boas@tamu.edu` and the telephone number is (979) 845-7269. The instructor's office hours are held in 202 Milner Hall from 11:00 to 12:00 on Tuesday, Wednesday, and Thursday; and also by appointment.

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Exams and grades

I will be giving a lecture at Amherst College on Wednesday, September 27, so there will be no class meetings on September 26 and 28. Instead there will be a take-home examination distributed on Monday, September 25 and due on Friday, September 29.

There will be in-class examinations on October 26 (Thursday) and on November 21 (Tuesday).

The final examination is scheduled by the registrar for Wednesday, December 13, from 1:00 to 3:00 P.M.

The four examinations each count for 20% of the course grade. The remaining 20% of the course grade will be based on homework/classwork.

Other information

Americans with Disabilities Act Statement from the Department of Student Life

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the office of Disability Services in Cain Hall (telephone 979-845-1637, web site `http://disability.tamu.edu/`).

Academic Integrity Statement from the Aggie Honor System Office

The Aggie Honor Code states: "An Aggie does not lie, cheat or steal, or tolerate those who do." Information about the Honor Council Rules and Procedures may be found at the web site `http://www.tamu.edu/aggiehonor/`.