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**Mathematics 185, Summer 2005**  
**Syllabus**

**Topics:** Analytic functions of a complex variable. Cauchy's integral theorem, power series, Laurent series, singularities, the residue theorem. Conformal mappings. Various other topics will be included if time permits.

**Textbook:** Sarason, *Notes on Complex Function Theory*. This is required, and very cheap. We will be following it, more or less. But I urge you to consult the math library for other complex analysis textbooks, which tend to be meatier, with more theory and (most importantly) more examples. It is always good to supplement your reading with other perspectives on the same material.

**Prerequisites:** Math 104, real analysis. We will use certain concepts and theorems from Math 104, e.g.: basic topological concepts like metric spaces, continuity, and connectedness, along with the general definition of derivative and partial derivative for functions of two variables. Rest assured that we will review them when we use them. There will be plenty of proofs on the homeworks and exams, so it is important to be comfortable writing proofs.

**Grading:** The class will be graded on a curve, around whatever grade I deem average. Here is the breakdown I'll be using:

*Homeworks* (20%): These will be due every Tuesday and Thursday in class, starting Thursday June 23. I'll be taking the problems from various sources, including (but not limited to) Sarason's text. There is no way you can learn the material satisfactorily without doing these homeworks!

I urge you to collaborate on these homeworks. But please put your answers in your own words.

There will be a reader who'll be grading your homeworks; he won't be able to grade every problem, but he'll grade several on each set. He and I will agree on which ones he should grade, and he'll write comments about your mistakes, more detailed than "this is wrong." Please read these comments!

*Quizzes* (10%): Every Monday and Wednesday, starting Wednesday June 22. 10-15 minutes, one problem. The goal is to have the average score be above 80%.

*Midterms* (20%, 20%): There will be two midterms. They'll be on Thursday July 7, and Wednesday July 27. They'll be in class. If you can't make these dates, then you shouldn't take this class. There will be no makeup midterms.

*Final exam* (30%): This will also be in class, on the last day, Thursday August 11. It will go the full two hours. Again, if you can't make this, then you shouldn't take this class.

**Website:** Go to <http://math.berkeley.edu/~corn/185.html> for announcements, assignments, and solutions to homeworks.

**Office hours:** Officially, TTh 11-12, in my office, 810 Evans. I also plan on being in my office from 4-5 pm every day after class, though I will leave early if no one comes up before 4:30. If you can't make these office hours, email me, using the address given above,

and let me know when you want to come in. I'm pretty flexible, as long as you give me 24 hours' notice. In general, email is the best way to reach me.

**Some words about the course philosophy:** First of all, this course goes fast—faster than the semester-long Math 185 taught during the school year. Stay on track. If you fall behind, it will be hard to catch up because everything moves so quickly.

The first hour is “lecture” and the second hour is “section.” I'm not sure what this means, but I'd like to try different things. Some days I'll have collaborative work to do, and some days I'll try a hybrid lecture-section alternating format (20 minutes lecture, 20 minutes doing problems) for the whole two hours. It is completely unacceptable to only come to the first hour of class and skip the second. If you do this, I guarantee you'll be missing lots of important stuff.

One thing I would like to emphasize: Especially in upper-division classes, students tend to be tentative about asking questions. Don't stop yourself from asking a question because you think that the answer is trivial or obvious, or that it would be a waste of time. If you're confused about something, then your neighbors probably are too. One way to look at it is that my natural lecturing pace is too fast (since I know the material a bit better than you do), so it's your job to slow me down.