Math 419: Introduction to Complex Variables

**Time/place:** MWF 1–1:50 p.m. in Engineering E205

**Course website:** www.math.colostate.edu/~bates/courses/F09/419

**Text:** *Complex variables and applications* by Brown & Churchill (ISBN 9780073051949). I will expect you to read parts of this book, use it as reference, and find the problems in it, so you will need access to it one way or another. Feel free to buy it in groups, buy old editions, etc. – just make sure you have access to a copy AND that you have a way to check that the problems in your edition are the correct ones.

**Instructor info:** Prof. Dan Bates, bates@math.colostate.edu, Weber 221 (1-1037)

**Office hours for 419:** Tuesday and Thursday 2–3, though we may be able to change that if necessary. In general, just let me know if you would like to chat and we’ll set something up. I also try to respond quickly to email.

**Prerequisites:** Math 261 (Calc. III).

**Topics to be covered:** Complex analysis is a beautiful, classical subject which touches many areas of mathematics and is essential in a number of applications. We will aim to cover most of the first seven chapters in the book, though we may skip a few sections here and there and we may jump ahead to a few topics later in the book. The course catalog says that we will cover “analyticity, Cauchy integral theorem and formula, Taylor and Laurent series, residue calculus, conformal mappings and harmonic functions.” We’ll hit all of that and more....

**Structure of the class:** This will be a fairly standard lecture class. I welcome your comments and ideas during lectures! It’s a small class, so please feel free to speak up. There will be homework due once a week, one midterm exam (tentatively scheduled for **Wednesday, October 14**), and a final exam. You are absolutely welcome (and encouraged) to work on the homework together, though your homework MUST be written up individually. Please refer to the student handbook for a definition of plagiarism and the consequences of plagiarizing. (Just don’t do it!)

**Grading:** The homework is worth 50% (each assignment will be equally weighted), and the midterm and final are each worth 25%. Do your homework and turn it in on time! I’ll just use the standard scale (90–100 A, 80-89 B, etc. with +’s and -’s as appropriate) to assign final letter grades. I don’t expect to curve anything.

**Feedback:** I want it! I want this class to go well both for you and for me. I may survey you from time to time, but if you are concerned about some aspect of the class or have some idea about how to make it better, please let me know.

**Final Note:** You should know that I have insulin-dependent diabetes and may therefore need to sit down and take it easy occasionally. There is also the very slight risk that I could have very low blood sugar at some point, causing me to pass out. If that happens (the probability of this is very low), I will need somebody to call 911. Please don’t worry: I haven’t passed out yet and don’t intend to! Even if I do pass out, I am not in any significant danger.