Math 514, Spring 2016
Analysis I: Complex Analysis

In real analysis, everything that can go wrong does go wrong.
In complex analysis, everything that can go right does go right.

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Course webpage: on Moodle

Meeting times: MWF 10:00-10:50a, ESC 618
Office hours: MWF 9-10a, or by appointment
Problem Session: TBA?

Text: Complex Analysis, Stein and Shakarchi
References: Complex Analysis, Ahlfors
Real and Complex Analysis, Rudin

Course overview: The topic of this course is the theory of functions of one complex variable, specifically the theory of functions which are differentiable in the correct complex sense. We will prove the Cauchy integral formula and its various applications; study meromorphic functions, power series and infinite products; study the Gamma and zeta functions with applications to number theory; and study conformal mappings, including the Riemann mapping theorem, as time allows.

Logistics: We will have weekly problem sets, and two exams (midterm and final). Students will also give lectures in class (or do some equivalent work).

Exams: 20% each
Problem sets: 45%
Class participation: 15%
Problem sets should be neat, clear, and STAPLED. You are welcome/encouraged to collaborate with others on the problem sets but you must sit down by yourself to produce an independent write-up of your solutions. Please indicate your collaborators on your write-up. The lowest-scoring problem set will be dropped. They are always due at the start of class. Late homework is not accepted.

**Student lectures:** Many of the lectures this semester will be given by members of the class. The idea is to encourage deeper engagement with the material by all students, those speaking and those listening. We will follow the textbook closely, and reading ahead of lectures is essential. Students who are not lecturing are expected to be ready to contribute to class discussion.

The ground rules for student lectures are the following: I will supply a specific, short section of the text to prepare a lecture on. The lecturer will explain the material as best they can, pointing out how the proofs work, giving key definitions, and examples as appropriate. It is totally fair game to say at any moment, ‘I did not understand how this works.’

I will **not** be grading anyone on the quality or eloquence or smoothness of their presentations. Anyone who presents the assigned material gets full marks. I do expect the non-lecturing students to come to class prepared to discuss material, to answer questions, and to try to help clarify spots where we are confused. Good participation in this way is an important part of the participation grade.

It is entirely possible, and hopefully likely, that everyone will get full marks for the class participation part of the grade.

If any student really does not want to give lectures (you really are not comfortable with public speaking, for instance), let me know and we will find an equivalent project for you to do – probably a writing project of some sort.

**Important dates:**

- **Midterm exam:** Week of Feb 29th, time TBA
- **Final exam:** Thursday, May 12, 7p-10pm (or another time??)

**Students with Disabilities:**

It is the policy of Wesleyan University to provide reasonable accommodations to students with documented disabilities. Students, however, are responsible for registering with Disabilities Services, in addition to making requests known to me in a timely manner. If you require accommodations in
this class, please make an appointment with me as soon as possible so that appropriate arrangements can be made. The procedures for registering with Disabilities Services can be found at


Please note:
I very rarely give an incomplete or any sort of make-up exam, and do so only for very serious circumstances. Under all circumstances, there is a much better chance I can do something for you if you let me know what is going on ahead of time.

Be familiar with and abide by University policy on cheating and plagiarism, and with the Honor Code. Ask me if you have questions, and note the homework collaboration policy above.