

Complex Analysis: Spring 2017

- **Instructor:** Professor Chris Kottke
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- **Course Webpage:** <http://ckottke.ncf.edu/complex/>, or Canvas
- **Lectures:** T,Th 10:30-11:50, HNS 106
- **Office Hours:** T,Th 4:00-5:00, W 2:30-3:30
- **Textbook:** *Complex Analysis*, by Freitag and Busam. Electronically available (from NCF network) at <http://link.springer.com/book/10.1007%2F978-3-540-93983-2>

Course Description: This is a first course in the analysis of functions of a complex variable. While many concepts (sequences, series, limits, derivatives) mirror those from real analysis, the consequences of complex differentiability are strikingly different from the real case and have important applications throughout mathematics and beyond.

We will cover complex numbers; sequences and series; continuity; complex differentiability and the Cauchy-Riemann equations; complex line integrals and Cauchy's Integral Formulas; power series and analytic continuation; Laurent series and meromorphic functions; the residue theorem; and if time permits, the Riemann mapping theorem.

Ideally, you will have had at least one semester of Real Analysis prior to taking this course; we will use results about continuous functions, sequences and series, power series, total derivatives and the inverse function theorem. If you have not had a rigorous treatment of these topics, make sure you come talk to me.

Reading Assignments: A reading assignment for each class will be posted on the course webpage and in the Canvas course prior to each lecture. This reading should be completed *before* the lecture. Unless otherwise specified, you will be responsible for all material in the reading assignment, even if it is not covered in lecture.

Homework: Homework problems will be assigned and collected on a weekly basis.

Exams: There will be two exams, one at the end of each module. Provisional dates (which may be subject to change) are as follows:

- Exam 1: Thursday, March 23
- Exam 2: Thursday, TBD during finals week

Assessment: Your course performance (Sat/Unsat) will be evaluated based on homework and exams, weighted equally (1/3 homework, 1/3 Exam 1, 1/3 Exam 2). Class participation and attendance will be reflected in the narrative evaluation.

Policies: A student claiming a need for special accommodations because of a disability must work with the Counseling and Wellness Center, which will establish the need for specific accommodations and communicate them to the instructor.

No student shall be compelled to attend class or sit for an examination at a day or time when he or she would normally be engaged in a religious observance or on a day or time prohibited by his or her religious belief. Students are expected to notify their instructors if they intend to be absent for a class or announced examination, in accordance with this policy, prior to the scheduled meeting.