

Math 4200-001/Introduction to Complex Variables/Fall 2017 Syllabus

Course webpage: www.math.utah.edu/~bertram/4200

Class meets: MWF 11:50-12:40 in ST 215

Instructor: Aaron Bertram Office: JWB 302

Email: bertram@math.utah.edu

Office Hours: MWF 10-11:30 or by appointment

Text: Taylor, *Complex Variables*

Grading: Based on homework, midterm and final exam scores.

Homework: Assigned on Mondays, collected the following Monday. You are encouraged to discuss the problem sets among yourselves and with me at office hours, but the final write-up must be your own work. Each problem set is worth 10 points, and the top 10 will be counted.

Midterms: Two midterms, in class.

1st Midterm: Wednesday, October 4 (50 points)

2nd Midterm: Wednesday, November 15 (50 points)

Final Exam: Wednesday, December 13, 10:30-12:30 (100 points)

Total: 10 problem sets + 2 Midterms + Final = 300 points.

ADA Statement: The Americans with Disabilities Act requires that reasonable accommodations be provided for each student with physical, sensory, cognitive, systemic, learning, and psychiatric disabilities. Please contact me at the beginning of the semester to discuss whether such accommodations are necessary.

Objectives: This is a course on functions of one complex variable. An amazing thing happens when such a function has a derivative. Namely, it then has infinitely many more derivatives and the function is equal to its Taylor series near every point where it is defined. Recall that this is **not** the case for functions of one real variable!

Topics to be covered include: the complex numbers, derivatives of functions of one complex variable, contour integrals, Cauchy's integral formula, power series, harmonic functions, residues, Fourier transforms and the Riemann mapping theorem.