Math 402 – Complex Analysis

Course Description from Bulletin: Analytic functions, conformal mapping, contour integration, series expansions, singularities and residues, and applications. Intended as a first course in the subject for students in the physical sciences and engineering. (3-0-3)

Enrollment: Required for AM majors

Textbook(s): Zill & Shanahan, *A First Course in Complex Analysis with Applications* (2^{nd} ed.), Jones & Bartlett

Other required material: None

Prerequisites: Math 251

Objective

1. Students will be proficient in basic computations with complex numbers.
2. Students will be able to use Cauchy-Riemann equations and conjugate harmonic functions.
3. Students will be able to compute conformal mappings between simple regions.
4. Students will be able to apply Cauchy's Theorem and the Cauchy Integral Formulas.
5. Students will learn the general theory and computation of Taylor and Laurent series.
6. Students will be able to apply residues to the computation of line integrals.

Le**cture schedule:** Three 50 minute (or two 75 minute) lectures per week

Course Outline: Hours

1. Complex numbers and sets in the complex plane 5
2. Complex functions and thei4Tf0 Tc T8(a)-1(ppings 0 Tc Tofir

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