

SPRING 2013
MATH 138
COMPLEX ANALYSIS
TTH 16:30 – 17:45
(3 units)

Prerequisites: Math 32 with a grade of C- or better
(Calculus III or an equivalent course)

In this course we will study several topics including:

1. Complex Numbers and their geometry
2. Roots of complex polynomials
3. Mappings and their applications
4. The Cauchy-Riemann equations
5. Harmonic functions and their use in applied math, engineering, and physics such as solving boundary value problems
6. Contour integrals and Cauchy's integral theorem
7. Cauchy's Integral Formula and its applications
8. Series of complex numbers, Taylor and Laurent series.
9. The residue theorem and its applications in evaluating definite integrals and summations

Text: Complex Variables and Applications by
J. Brown and R. Churchill , 8th edition
McGraw-Hill.

You can use any of the following editions: 4th – 8th .