A Summer Course for the 'C' Term

MAA 4402-01 Complex Variables

(also listed as MAT 5933-07)

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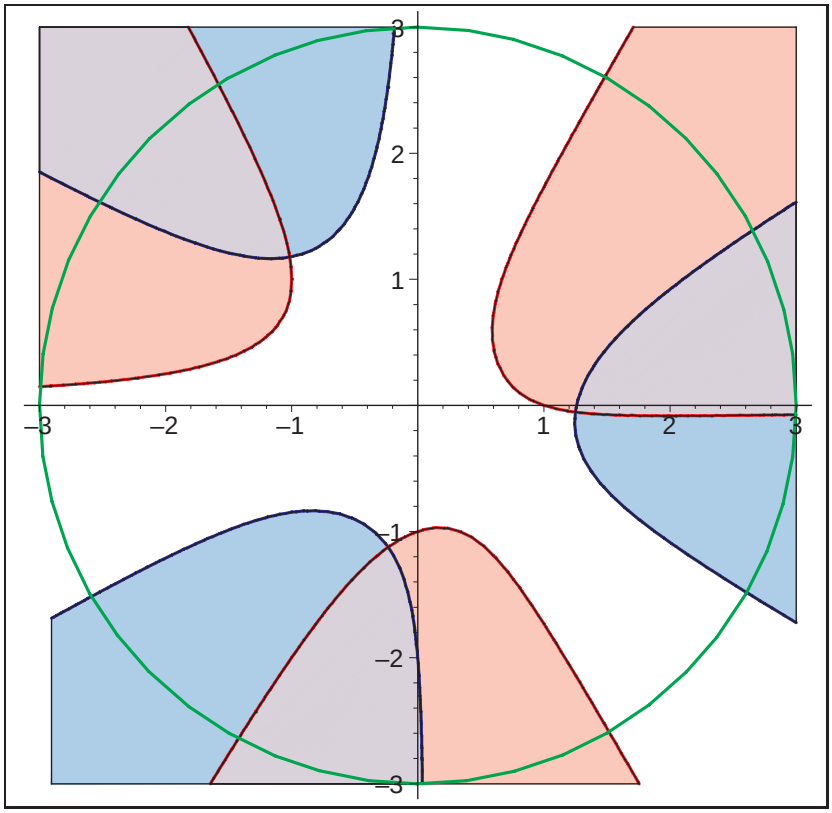
http://www.math.fsu.edu/∼bellenot/class/su04/complex/

MTWRF 9:30-10:50 106 LOV



Complex variables is an introduction to the analysis of functions of a complex variable $z = x+iy$. Ironically, complex analysis is often easiler then non-complex analysis; and imaginary numbers are no less real than real numbers. There is tremendous power in complex analysis because of the number of ways to view the same property.

The picture illustrates Gauss's proof of the famous fundemental theorem of algebra. (Every polynomial has a complex root.) The picture shows the inverse images of $\Re \geq 0$ (pink) and $\Im \geq 0$ (blue) for the polynominal $z^3+iz-2-i$. The green circle is chosen far enough out so the z^n term dominates. The the pattern of red and blue lines represent the points mapped to the real and complex axes respectively. The intersections (which are required by the immediate value theorem) are zeros of the polynomial.