

# MAT 5230: Complex Variables and Applications

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**Textbook:** Complex variables and Applications, 7th ed. by James Ward Brown and Ruel V. Churchill, McGraw-Hill, Higher Education, ISBN 0-07-287252-7.

Time: 4:00–5:50 pm. MW      Room: 0328 State Hall      Section: 001

## Course Outline

Cauchy-Riemann equations; elementary functions; mappings by elementary functions; the Cauchy integral formula; Morera's theorem; Taylor series; Laurent series; residues and poles; conformal mappings; the Schwarz-Christoffel transformations; potential theory; Fourier and Laplace transforms and applications in differential and integral equations.

## Homeworks and Exams

Homeworks will be regularly assigned and some will be collected. They must be answered neatly and handed in on time to receive full credit. A 20% will be deducted after the due day and no credit after the graded homework/project has been returned.

There will be a midterm exam on Wednesday, March 5. Questions on the exam will be similar to homework problems.

There will be a final on Wednesday, April 23, which is comprehensive.

## Grading Policy

Homework 30%, midterm exam 30%, final exam 40%.