

Mathematics 4460.01
Complex Variables
Fall, 2025
Gasson 210, MWF 1–2
Rob Gross

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OFFICE HOURS: Monday, 2–3, Wednesday, 2–5, and by appointment

ELECTRONIC MAIL: gross@bc.edu

CLASS HOME PAGE: <http://fmwww.bc.edu/gross/MATH4460>

ALTERNATIVE: <http://sites.bc.edu/rob-gross/MATH4460>

TEXT: *Fundamentals of Complex Analysis with Applications to Engineering, Science, and Mathematics*, third edition, by Edward B. Saff and Arthur D. Snider

PREREQUISITES: Multivariable Calculus (MATH2202), Linear Algebra (MATH2210), and Introduction to Abstract Mathematics (MATH2216).

This course gives an introduction to the theory of functions of a complex variable, a fundamental and central area of mathematics. It is intended for mathematics majors, mathematics minors, and science majors.

Topics covered include complex numbers and their properties; analytic functions and the Cauchy–Riemann equations; the logarithm and other elementary functions of a complex variable; integration of complex functions; the Cauchy integral theorem and its consequences; power series representation of analytic functions; and the residue theorem and applications to definite integrals.

Homework

Homework will be assigned and collected weekly, usually on Fridays. If you wish to turn in any homework longer than one page, *you must use a stapler*. Folding the edges of the pages over is unacceptable. Paper clips are also not acceptable. This rule makes grading homework much faster.

You may not work together on homework assignments, and you may not use artificial intelligence to solve homework problems. You should feel free to see me during office hours, or e-mail me for help when you are stuck on problems. Many of the homework problems can require days to solve, so you should not wait until Thursday evening to read the assignment.

Grades

There will be three examinations during the semester, tentatively scheduled for Wednesday, September 24; Monday, October 27; and Friday, December 5. The three examinations count for 18%, 20%, and 22% of your grade, respectively. The final examination counts for 30% of your grade. Homework and class participation counts for the remaining 10% of your grade.

The final examination for MATH4460.01 is scheduled for Friday, December 12, at 12:30 PM. Note that this time is fixed by the Registrar, and cannot be altered.

Academic Integrity

Any violations of the College's policy on academic integrity will be dealt with severely. For more information, see

<https://www.bc.edu/bc-web/academics/sites/university-catalog/policies-procedures/academic-integrity.html>

Make sure that the work you submit is in accordance with university policies. If you have any questions, please consult with me.

Note: If you are a student with a documented disability seeking reasonable accommodations in this course, please contact Kathy Duggan (617-552-8093, dugganka@bc.edu) at the Connors Family Learning Center regarding learning disabilities and ADHD, or the Disability Services Office, (617-552-3470, disabsrv@bc.edu) regarding other types of disabilities, including temporary disabilities. Advance notice and appropriate documentation are required for accommodations.