

Math 617-600: Theory of Functions of a Complex Variable I, Fall 2007

Professor Emil J. Straube

Time/Loc.: MWF 12:40 - 1:30, BLOC 624

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Office hours: MWF 1:45 - 2:45, but feel free to come and see me any time.

Text: Robert E. Greene and Steven G. Krantz,
Function Theory of One Complex Variable, 3rd edition
American Mathematical Society, 2006

Math-617 constitutes the first half of the *Complex Analysis* qualifier sequence (Math-617, Math-618).

Prerequisites: This is a *first year graduate course*. Accordingly, a solid background in undergraduate analysis is expected. The officially listed prerequisite is Math-410.

Course Content: Math-617 covers chapters 1 through 6 in the text, Math-618 will cover chapters 7 through 12 (approximately). A brief list of topics for Math-617 is as follows: complex numbers, elementary properties of analytic functions, complex integration, Cauchy's theorem, power series representation, Cauchy estimates, Liouville's theorem, singularities, Laurent expansions, residues, the argument principle, the open mapping theorem, the maximum modulus principle, Schwarz's lemma, Möbius transformations, Riemann mapping theorem.

Grading Policy: There will be three exams worth 100 points during the semester, and a comprehensive final exam worth 100 points also. All exams will be takehome.