Instructor: Prof. J. H. Shapiro  
• Office: D304 Wells Hall,  
• Phone: 3-3831,  
• email: shapiro@math.msu.edu  
• Office Hours: MWF 11:30 AM–12:20 PM, and by appointment.

Text: *Notes on Complex Function Theory* by Donald Sarason (required).

Prerequisites: You need a good working knowledge of undergraduate-level real analysis, in particular limits and continuity, “delta-epsilon” proofs, and the topology of Euclidean space $\mathbb{R}^n$ (at least for $n = 2$)—especially the concepts of “open set”, “closed set”, “boundary”, and “compact set”. You must know the fundamental properties of continuous functions (e.g., *a function that is continuous on a compact set is bounded, and attains its maximum and minimum*), and know how they are proved. You should have solid experience with multi-variable calculus, especially partial derivatives and gradients, line integrals and Green’s Theorem.

A previous undergraduate course in complex analysis can help, but is not necessary.

Course Objectives: The course will cover just about all of the text, with some additional topics as time permits. The goal is to understand analytic functions of one complex variable: their fundamental properties, representations, and applications.

Course Organization: Your preliminary grade will depend solely on examinations and homework: 600 points total, apportioned as follows.

• Midterm exam: Fri. Feb. 23 (100 pts),

• Final Exam: Fri. May 7,  
10 AM–12 Noon (200 pts),

• Homework: (300 pts)  
Collected periodically (see below).

No exams or homework sets will be dropped. In most cases your preliminary grade will be your final grade. However, other factors, such as: exceptional effort, positive contributions to the classroom experience, improvement over time . . . , can play a role in raising your preliminary grade, whereas negative factors such as lack of effort, declining performance, or disruptive behavior can lower it.

Homework: Problems will be assigned and collected on a regular basis, and some subset of them will be graded. In order to get credit for a problem set, you must be present (both physically and mentally) for the entire class at which it is due. You must write up problems neatly and logically, providing appropriate explanations of what you are doing. *If a grader cannot easily follow your work, you will lose points.*

Collaboration. Work on the homework problems must be your own! You may discuss with me, or with your classmates any of difficulties you are having with the homework problems, however you must acknowledge any help you get from classmates. If there is persuasive evidence of widespread unacknowledged collaboration, exams will count more and homework less. Cases of flagrant cheating on either homework or exams will be handled according to the University’s policy on Integrity of Scholarship and Grades; see pages 77 and 109-110 of the Spartan Life Handbook, which may be downloaded at [http://www.vps.msu.edu/SpLife/](http://www.vps.msu.edu/SpLife/).

Policy on Makeup Work: The only valid reasons for missing an exam or a homework assignment are: (1) illness, or (2) a conflicting University activity that cannot be rescheduled. Claims involving such contingencies must be supported by verifiable documentation signed by: (1) your physician in case of illness, or (2) your faculty supervisor in case of a non-rescheduleable University activity. Each case will be handled on an individual basis.

Grading Policies: Graduate students will be eligible for grades of DF on the same basis that undergraduates are eligible for grades of I (see *Academic programs 1995-97*, page 50).

Specifically: To qualify for a DF or an I, a student must: (a) have completed 12 weeks of the term, but be unable to complete the class because of illness or other compelling reason, and (b) have done satisfactory work in the course, and in the instructor’s judgment, be able to complete the course without repeating it.

Important Dates:

• Mon. Jan. 12: First day of classes  
• Fri. Jan 16: Close of computer/telephone enrollment. Last day to change to or from Credit/No credit grading options.  
• Mon. Jan. 19: Martin Luther King Day. Classes cancelled  
• Fri. Feb. 6: Last day to drop a course with 100% refund.  
• Wed. March 3: *Middle of term*—last day to drop a course with no grade reported.  
• Mon. March 8—Fri. March 12: Spring Break  
• Friday, April 30: Last day of class.  
• Friday, May 7: Final Exam, 10 AM–12 Noon, in the classroom.