Math 411/511: Introduction to Complex Variables Professor: Dan Singer Classroom: Wissink Hall 286, 11:00–11:50 AM, MTHF Office Hours: Wissink Hall 263, 3:00 – 3:50 PM, MTHF Webpage: http://mavdisk.mnsu.edu/singed Email: dan.singer@mnsu.edu

Course Description: A first course in Complex Analysis. Topics include sequences and series of complex numbers, holomorphic functions and the Cauchy-Riemann equations, the complex line integral, Cauchy's integral formula, sequences of functions, power series and Laurent series expansions of holomorphic functions, the residue formula, evaluation of real-valued integrals and infinite series using techniques of complex integration, properties of the Riemann Zeta function, and a proof of the Prime Number Theorem. We will review topics in real analysis as needed.

Prerequisites: Math 223 and Math 290 with a C or better, or consent of the instructor.

Textbook: Princeton Lectures in Analysis II: Complex Analysis, by Eilias M. Stein and Rami Shakarchi, Princeton University Press, 2003.

Course Format: I will make available notes for this course on my faculty webpage. The notes include material not contained in the textbook. I will discuss five to seven pages of notes each week. I will also place homework exercises online, some from the textbook and some I have designed myself. Grades will be based on the quality of homework submissions.

Homework Policy: Homework solutions should be typeset, preferably using Latex. They should be edited and polished, just like any writing assignment. Solutions must be complete, logically correct, and succinct. All solutions must be a student's own work, not something adapted from another source (solutions manual, internet, etc).

How to Study for this Class: Everything should be done carefully: taking notes in class as needed, reading the textbook, reading the course notes, writing up problem solutions. Students are encouraged to discuss ideas with each other, ask questions in class, and seek help in office hours.

Grades: I will use the following grade scale to assign course grades, which are based on homework solutions:

 $\begin{array}{l} A: \ 90 \ - \ 100\% \\ B: \ 80 \ - \ 89\% \\ C: \ 70 \ - \ 79\% \\ D: \ 60 \ - \ 69\% \\ F: \ < \ 60\% \end{array}$

Conduct: Electronic devices are prohibited. Please arrive on time, remain in your seats for the full class period (unless there is some kind of emergency), and don't interrupt the class with conversation. Your respectful conduct will be appreciated!