Class meetings: Tuesday 6:30 PM – 9:20 PM Olsen 407

Instructor: Professor Alexander Kheifets

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E-mail: Alexander_Kheifets@uml.edu  
URL: http://faculty.uml.edu/akheifets/

Office Hours:  
Tuesday 3:30 – 5:30 p.m.  
Thursday 3:30 – 5:30 p.m. And by appointment

Recommended Texts:


Goals of the course: The course is aimed to introduce into the theory of analytic functions of a single complex variable. Although analytic functions of one complex variable form a very special subclass of functions of two real variables they play a very important role in mathematics and its applications in physics and engineering. Analyticity has three faces (that turn out to be equivalent): complex differentiability, Cauchy’s Integral Theorem, and power series representations. I plan to cover (with some exceptions) chapters 1 (brief review), 2, 3, 4, 5 and 6 of the first textbook listed above. The second text is focused more on proofs of the theorems.

Prerequisites: Calculus I, II, III

Main Topics:

1. Complex numbers.
2. Complex Differentiability and Analyticity; Cauchy-Riemann Equations.
3. Contour Integrals and Cauchy’s Integral Theorems.
5. Zeros and Isolated Singularities of Analytic Functions.

Homework: Problems for practice (from the first recommended textbook) will be assigned every meeting. It is absolutely essential to success in this course that you complete the assigned problems. Typically they will not be graded. However, there occasionally might be a quiz based on the home assignments that will be graded. Also some assignments could be given for grading. Some of the assigned problems will be discussed in class by your request or my understanding of necessity. I also will be happy to answer your questions on material we cover and/or on the homework assignments in class, during my office hours and meetings by appointment.

Exams: There will be three exams (all three are equally weighed). They are tentatively scheduled to 4-th, 8-th and 12-th week. The exams may consist of the in class and take-home parts.

Grading: The grades will be assigned according to the following scale

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