Instructor: **Dr. A. Muleshkov, Associate Professor of Mathematics**

Location: BEH-218  
Time: Mo We Fr(discussion) 2:30 P.M. – 3:45 P.M.

Office: CDC 1020  
Office Phone: 895-0387 \  
Office Hours:  
Monday and Wednesday 3:50 - 4:50 P.M.  
Tuesday and Thursday 4:00 - 4:55 P.M.

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Textbook: COMPLEX ANALYSIS FOR MATHEMATICS AND ENGINEERING (6th edition) by John H. Mathews and Russell W. Howell (Chapters 1, 2, 3, 4, 5, 6, 7, 8, 10, and 11)

Prerequisite: MATH 283 (min. grade C)

Learning Outcomes: Various forms of complex numbers and their use for arithmetic operations with complex numbers and finding the values of elementary functions of one complex variable; Riemann sphere and point at infinity; definitions/properties/theorems for analytic functions; branch points, branch cuts, and branches of a multivalued function; classification of singularities including at the point of infinity; contour integration; Taylor and Laurent series; conformal mapping and its application for solving boundary value problems for Laplace PDE, harmonic functions and potential theory; application of residue theorem for evaluation of some classes of definite integrals for which the indefinite integrals are not solvable.

The final grade for the course is obtained from the total (max 500) of:

- homework and/or quizzes - 90 points
- conformal mapping project - 60 points
- midterm exam - 110 points
- final exam - 150 points
- instructor's discretion - 40 points

There is going to be a recitation/discussion class taught by my graduate student Mr. Tan Nguyen every Friday. During his class, Mr. Tan Nguyen is going to solve problems, answer questions, collect and return homework, and administer quizzes. There will be a quiz about once every two or three weeks (on the material covered in
class after the previous quiz.) No calculators, notes, textbooks, or any electronic devices are allowed to be used on the examinations. The homework for a section is due at the beginning of the recitation class after the section has been fully covered in class. All work must be shown to receive any credit. A solution that includes only the answer will receive 0 points. On the other hand, the answer always needs to be given.

In this class, the textbook is only a tool. Very often, stronger and/or easier methods than the ones given in the textbook are going to be presented in class. Handouts are essential part of this course. Some of them are the result of tens of years of effort and experience with students’ difficulties. Timely learning of the handouts could facilitate students' studies a lot.

This is a very serious course. The student who studies MATH 459/MAT 659 needs to know the material of Calculus I, II, and III, Precalculus, College Algebra, and Trigonometry very well. Besides the time spent in class, the student will need to devote additional time to working problems, reviewing lecture notes and the text, and consulting with the instructor and his assistant. Accordingly, students should plan to allow sufficient time. Regular attendance, prompt arrival, and taking elaborate notes are strongly recommended. Students who do not maintain these good habits do not usually succeed in this course. Please keep this syllabus for future reference. If you have any questions about the issues raised here or other issues, please come to my office hours. Knowledge of phone number of and keeping in touch with a classmate could be very helpful.

P. S. If you have a documented disability that may require assistance, you may need to contact Disability Services (DS) for coordination in your academic accommodations. Disability Services is located within Learning Enhancement Services (LES) in the Reynolds Student Services Complex (SSC), Room 137. The telephone number is 895-0866 / TDD 895-0652.