## INTRODUCTION TO COMPLEX VARIABLES TuTh 3:30pm-4:50pm, PKH 107

INSTRUCTOR: Prof. Ren-Cang Li, 445 PKH, (817) 272-0548, rcli@uta.edu

CLASS HOME PAGE: http://www.uta.edu/faculty/rcli/Teaching/math4322/f2016

OFFICE HOURS: TuTh 2-3pm or by appointment

**Text**: J. W. Brown and R. V. Churchill, *Complex Variables and Applications*, 9th edition, McGraw Hill Education 2014.

- Complex Numbers Chapter 1
- Analytic Functions Chapter 2
- Elementary Functions Chapter 3
- Integrals Chapter 4
- Series Chapter 5
- Residues and Poles Chapters 6 & 7
- Mapping by Elementary Functions Chapter 8
- Conformal Mapping Chapters 9 & 10

Learning Outcomes: On successful completion of this course, students will be able to

- conceptualize the geometry and algebra of the complex number system and contrast it with the system of real numbers,
- represent complex functions of a complex variable as mappings from the complex plane to itself and explain the geometric meaning of the functional formulas,
- explain and illustrate multi-valuedness of complex functions of a complex variable,
- explain the meaning of and demonstrate calculations of path integration in complex variables, including residues and poles,
- prove statements involving complex variables, at the level of the course,
- present and discuss applications of complex variables as studied in the course,
- read and analyze mathematical writing on complex variables at the level of the textbook,
- give clear explanations of solutions to problems in the course, both theoretical and applied, and both orally and in writing,

• and be confident about the correctness of their explanations and solutions.

**Homework**: With each lesson, you will be given a set of homework problems. Some will be worked on in class, and the rest on your own or with classmates outside of class. The homework will not be collected; it is given to help you learn the material and prepare for the MidTerm and the Final. The tests will be designed to determine whether you have mastered the ideas in the homework.

**Quiz**: There will be 12 short closed book, equally weighted quizzes on Tuesdays in the weeks when no exams take place. See the classweb for detail. Your quiz grade will be the sum of your best 10 quiz scores.

## There will be no make-up quizzes.

Exams, Weights: There will be a MidTerm and a Final. All exams are comprehensive.

Component	Date	Points	
Midterm	Tuesday, October 25 (in class)	30	
Final exam	Tuesday, December 13, 2-4:30pm	40	
quizzes	Tuesdays on no exam weeks (in class)	30	
Total Points Possible: 100			

Your personal commitments (e.g., work) must accommodate these examination times. You are entitled to a rescheduling of the exams, provided that you have compelling reasons such as serious health problems or a similar serious situation. For an unavoidable and excusable event in conflict with the exam dates, you must give the instructor written notices at least two weeks prior to the conflicted exam date.

**Course Grade**: While the instructor reserve the right to adjust grades, as a rule having the following percent of the scaled points will earn a grade of

Grade	Minimum $\%$
А	90
В	80
С	70
D	60

## Expectations of the Student:

- Attendance. At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, attendance is mandatory. You are expected to attend every class, arrive on time, and remain in class for the whole period. You are responsible for any and all announcements made in class. You are responsible for any material missed during class.
- 12 hours per week outside of class. Spend at least 12 hours per week outside of class studying and (re-)working problems for this course.
- *Picture ID.* You may be asked to present a UTA picture ID at any exam and quiz. Please bring your UTA picture ID to all exams and quizzes.
- *MavMail and Announcements.* Keep an activated MavMail account and check it regularly. You are responsible for all information that I send to your MavMail account and all announcements made in class or on the course website.
- Asking for help when needed. Ask for help on material that you may not be grasping fully. You may work with your classmates, come to office hours, or send me an e-mail with specific questions.

## Important Dates:

Thursday, August 25		First day of class
Monday, September 12		Census Date
Tuesday, October 25		Midterm (in class)
1	Wednesday, November 2	Last day to drop
November 24, 25		Thanksgiving holidays
Wednesday, December 7		Last day of class
Tuesday, December 13, 2-4:30pm		Final Exam

Information is subject to change, please keep yourself informed!

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 - The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Dishonesty: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents Rules and Regulations, Part One, Chapter IV, Section 3, Subsection 3.2, Subdivision 3.22)

**Student Disruption**: The University reserves the right to impose disciplinary action for an infraction of University policies. For example, engagement in conduct, alone or with others, intended to obstruct, disrupt, or interfere with, or which in fact obstructs, disrupts, or interferes with, any function or activity sponsored, authorized by or participated in by the University.

**Drop Policy**: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao/).