Mathematics 165B

(Spring, 2022)

Instructor: BUN WONG

Office, email address: Skye 244, wong@math.ucr.edu

Lectures: TR 11:00 am to 12:20 pm, Skye 170.

TA: Ryan Ta, rta002@ucr.edu

Discussion : M 1:00 pm to 1:50 pm.

Office hours: TR 12:30 pm to 1:30 pm, or by appointments.

Text: "Complex Variables and Applications" by Brown and Churchill, Ninth edition

Grading and homework policies:

There will be one final and one midterm. The date for the midterm will be determined later. For the course grade, the midterm will account for 30%, final for 70%, respectively. The homework will be assigned in ILearn. The TA will discuss their solutions in the sections. It is important for the students to go through the assigned problems in detail and attend the discussion sections regularly. Many problems in the examinations will be related to the homework assignments.

Topics of discussion and coverage:

(1) A review of Math 165A, Laurent Series (Chapter 5).

(2) Residue Theorem, Evaluations of certain definite integrals, Singularities, zeros and poles of analytic functions, Argument principle, Rouche's Theorem (Chapters 6 and 7).

(3) Mappings by elementary functions, conformal mappings and their applications (Topics chosen from Chapters 8, 9, 10, 11).

(4) Harmonic functions, Dirichlet problem on a disk, and related boundary values problem (Chapter 12).

(5) Some physical applications.

There will be no video recording of my lectures this quarter. I will not post my lecture notes online. Students are encouraged to attend the classes in person and copy down my lectures by hand from the whiteboard in a traditional manner. I believe this is a better way to learn mathematics.