Mathematics 300 , Section 951
July - August 2024

Course title: Introduction to Complex Variables.

Time and place: Monday, 13-13:50, in Buchanan A103. Tuesday, Wednesday, Thursday, 13-14:50 in Buchanan A104.
The first day of classes is Tuesday, July 2.

Textbook: Saff and Snider, Fundamentals of Complex Analysis with Applications to Engineering, Science and Mathematics, third edition. This book is well suited to Math 300, I will follow it closely. The specific sections we will cover are 1.1-1.6, 2.1-2.6, 3.1-3.3, 3.5, 4.1-4.6, 5.1-5.3, 5.5, 5.6, 6.1 - 6.3.

Course content: We will begin by discussing the complex numbers and functions of a complex variable, then proceed to develop differential and integral calculus in this setting. The resulting theory is beautiful and in many ways quite different from the "usual" calculus for functions of either one or several real variables. Complex analysis has many applications to science, engineering and other areas of mathematics. Proofs are integral to the subject; we will encounter them in every part of the course: lectures, textbook, homework, tests, etc.

Canvas Page: I will be relying on Canvas for every aspect of the course and updating it on a regular basis. This page will not be updated.

Attendance: Summer classes at UBC cover 13 weeks of material in 6 weeks. They are fast-paced and intense. Please make sure you allocate enough time to this class.
You are welcome to take your own notes during the lectures, but you don't need to: I will scan and post my actual notes from the document camera. after each lecture. The lecture notes are intended to give you a big picture/condensed view of each topic. The textbook will usually offer a more detailed treatment of the proofs as well as additional examples. You should read both the notes and the book on a regular basis. The lectures will move fast. I recommend reading ahead in the book before each lecture. You will get more out of the lectures if you know where I am going ahead of time and can focus on the finer points
All exams will be in person, no exceptions. If you schedule does not allow you to attend the exams or to attend the lectures on a regular basis, please do not sign up for this class.

Registration: I am not authorized to register students into my classes. If you have any questions or concerns about registering for this class, please contact the Mathematics Department.

Homework: I plan to assign three problem sets during the term. Barring the unexpected, they will be due by 9pm on the following days:
Problem Set 1: Friday, July 12 (week 2),
Problem Set 2: Friday, July 26 (week 4),
Problem Set 3: Friday, August 9 (week 6).
Late homework will not be accepted. The lowest homework grade will be dropped.

Group work: On Monday, July 8 (week 2), Monday, July 22 (week 4) and Tuesday, August 6 (week 6), I plan to have you work on problems in groups during regular class hours. I will divide you into groups at random. You can discuss the problems with other students in your group, you are also welcome to ask me questions. Marks will be assigned to individual students (not groups); these will count towards the final course mark; see below.

Note that the main purpose of the homework and group work is to give you an opportunity to practice and internalize the concepts introduced in the lectures. I will assign small amounts of credit to keep you engaged, but evaluation is only a secondary purpose for these activities.

Midterm Exams: There will be two in-class midterms, Monday, July 15 (week 3) and Monday, July 29 (week 5).

Final Exam: The final exam will take place some time during the final exam period, August 13-17. The specific time and place are set by UBC's central administration; they are usually announced some time in the middle of the term. Note that I have no control over the timing of the final exam. Students who are unable to take the final exam at the scheduled time (e.g., for health reasons) should apply for deferred standing (SD) status through their faculty. I do not have the authority to grant this status.

Marking scheme: I will compute the total term mark for each student in two ways,

Total 1 := HW (10%) + GW (10%) + Midterms 1 and 2 (20% each) + Final (40%)

Total 2 := HW (10%) + GW (10% each) + Top midterm (30%) + Final (50%)

and use whichever one is higher. Here HW stands for the total homework score, based on the top two homework assignments and GW stands for the total group work score, based on the top two group work assignments. I will drop the lowest homework score and the lowest group work score.