MATH 310 Fall 2021 Complex Analysis

Instructor: James Phillips Email: jp100 @ wellesley.edu Office: Clapp 308 Office Hours: Monday and Thursday 1:00 - 2:00 (in person), Wednesday 10:00 - 12:00 (on Zoom), and by appointment.

Textbook: The primary textbook for this class is *Complex Variables and Applications* by Brown and Churchill. Other textbooks that cover similar material are *Complex Analysis* by Gamelin and *Basic Complex Analysis* by Marsden and Hoffman.

If anyone is looking for more advanced resources, I'm happy to chat and point you in the right direction.

General Policy: Students are expected to attend class and, in the event of an absence, are responsible for making up any missed material. Students are also encouraged to participate and ask questions during class. As with all math, complex analysis is learned best through practice; I am happy to work with students in class and in office hours to ensure the best understanding of the subject. In the end, the skills we will stress are *critical thinking* and *problem-solving*.

In class, please be courteous: arrive on time and stay until in the end of class. Lectures are a good starting point, but the best understanding comes from getting your own hands dirty: give the material a look before lecture, and spend some time reviewing and practicing afterward.

Throughout the term, I will do my best to keep things as steady as possible, but our flexibility may very well be called on. Thus, communication will be vital. Even in a typical semester, I understand that things do come up. If a circumstance arises that affects your performance in the course, you should inform me *before* it influences your grade. If anything were to arise, we can work together to figure out an appropriate plan.

I reserve the right to modify this syllabus and the course as needed. Any changes will be announced before they can affect anyone's grade.

Topics: This course is meant to serve as an introduction to complex analysis. Topics covered in this class include complex numbers, complex functions, multi-valued functions, complex derivatives, analyticity, contour integrals, power series, Laurent series, singularities, residues.

Homework: Homework will be assigned weekly on Friday and solutions should be turned in no later than 5:00 PM EST the following Friday. Each assignment will be posted to Sakai. Some problems may be difficult, so be sure to start early to give yourself time to work through problems that might take more creative energy. You are also welcome to work together on homework, but any work submitted must be your own. Late homework will not be accepted. Your lowest two homework scores, however, will be dropped. Homework comprises 40% of your overall grade in the course.

Quizzes: There will be a quiz each every other Wednesday, beginning with the third Wednesday of the term, covering the material from the previous two calendar weeks. Quizzes will often be a mix of computational and proof-centric problems. Quizzes will be administered during the Wednesday class meeting. Your lowest quiz score will be dropped at the end of the semester. Quizzes comprise 40% of your overall grade in the course.

Exam: There will be a self-scheduled final exam following the term. Like quizzes, the final exam will contain a mix of computational and theoretical questions covering the material from the entire term. The final exam comprises 20% of your overall grade in the course.

Honor Code: On homework, collaboration is expected and encouraged. You should feel free to talk to other students while you are in the process of thinking about a problem. You will need periods of concentrated individual study, but it is also helpful to spend time talking about the subject. However, solutions should be written up on your own, to gain practice and confidence in your ability to problem solve. Exams and quizzes are completed individually. Feel free to direct any questions to me.

Accommodations: If you have a disability or condition, either long-term or temporary, and need reasonable academic adjustments in this course, please contact Accessibility and Disability Resources (ADR) to get a letter outlining your accommodation needs, and submit that letter to me. You should request accommodations as early as possible in the semester, or before the semester begins, since some situations can require significant time for review and accommodation design. If you need immediate accommodations, please arrange to meet with me as soon as possible. If you are unsure but suspect you may have an undocumented need for accommodations, you are encouraged to contact (ADR). They can provide assistance including screening and referral for assessments. If the course schedule includes quiz or exam dates that conflict with your religious observances, please let me know at least one week in advance in order for us to make an alternative arrangement.