

Syllabus MATH 305/573, Complex Calculus Spring 2023-2024

1 Instructor

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Office hours: Wednesday 10:40-11:30

2 Content

This course covers the field of complex numbers, functions of one complex variable, analytic functions, the Cauchy-Riemann equations, harmonic functions, integration in the complex plane, Cauchy integral formula, power series, Laurent series and isolated singularities, theory of residues and applications.

3 Schedule

Wednesday 14:40-15:30 (FASS G018)
Thursday 13:40-15:30 (FASS G018)

4 Recommended books

(Textbook) Complex Variables and Applications (Eighth Edition) James Ward Brown, Ruel V.Churchill, 2008, McGraw Hill. (We will cover a significant portion of Chapters 1-7.)

Fundamentals of Complex Analysis, Applications to Engineering and Science (Third International edition), E. B. Saff, A. D. Snider, 2003, Pearson.

5 Grading

There will be 5 homework assignments of which the best 4 will be taken (40%), and a Midterm exam (60%). The midterm exam will be on May 23rd during the class hours 13:40-15:30. Participation (5% bonus.)

6 Homework

Homework assignments are based on the lectures and will be posted on the SU-course website sometime on Thursday. That assignment will be due in two week on Thursday at the beginning of the lecture. You are encouraged to do your homework in groups. You are required, however, to write up your homework on your own. Homework is an essential educational part of this course. Your work will be graded mostly on your ability to work problems on exams. You cannot work problems on midterm exams if you have not practiced the techniques within the homework problems. If you misuse homework by not doing it yourself, or not checking that you can solve a problem on your own after having been shown how to do it, then your exam scores and corresponding grade will reflect this.

7 Attendance

You are expected to attend every class. If you miss a class, it is your responsibility to obtain a copy of the lecture notes from another student. You are also responsible for any announcements about changes to the course schedule, the exam schedule, or the course requirements made during that class.

8 Make-up policy

In order to take a make-up exam for the midterm exam, you need to provide documentation (eg. a doctor's report) and contact me in advance to make arrangements.

9 Academic Honesty

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Cheating hurts our community by undermining academic integrity, creating mistrust, and fostering unfair competition. The university will punish cheaters with failure on an assignment, failure in a course, permanent transcript notation, suspension, and/or expulsion.

Violations can include cheating on exams, plagiarism, reuse of assignments without permission, improper use of the Internet and electronic devices unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Ignorance of these rules is not an excuse.

In this course, as in many math courses, working in groups to study particular problems and discuss theory is strongly encouraged. Your ability to talk mathematics is of particular importance to your general understanding of mathematics.

You should collaborate with other students in this course on the general construction of homework assignment problems. However, you must write up the solutions to these homework problems individually and separately. If there is any question as to what this statement means, please see the professor or the recitation instructor.