Course Name: Introduction to Complex Analysis
Course Number: 201.1.0071
Course web page: https://www.math.bgu.ac.il/en/teaching/spring2022/courses/introduction-to-complex-analysis
Office Hours: https://www.math.bgu.ac.il/en/teaching/hours

Abstract

Requirements and grading

Course topics

1. Complex numbers, open sets in the plane.
2. Continuity of functions of a complex variable
3. Derivative at a point and Cauchy–Riemann equations
4. Analytic functions; example of power series and elementary functions
5. Cauchy’s theorem and applications.
6. Cauchy’s formula and power series expansions
7. Morera’s theorem
8. Existence of a logarithm and of a square root
9. Liouville’s theorem and the fundamental theorem of algebra
10. Laurent series and classification of isolated singular points. The residue theorem
11. Harmonic functions

Information may change during the first two weeks of the term. Please consult the webpage for updates
12. Schwarz’ lemma and applications
13. Some ideas on conformal mappings
14. Computations of integrals