The Department of Mathematics
2021–22–B term

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