

# The Department of Mathematics

2023–24–A term

**Course Name** Geometric infinitesimal calculus 1

**Course Number** 201.1.1031

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/fall2024/courses/geoemtric-infi-1>

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**Office Hours** <https://www.math.bgu.ac.il/en/teaching/hours>

## Abstract

## Requirements and grading<sup>1</sup>

## Course topics

Open, closed and compact sets in Euclidean space. Matrix norms and equivalence of norms. Limits and continuity in several variables. Curves and path connectedness. Partial and directional derivatives, the gradient and differentiability. The implicit, open and inverse function theorems. Lagrange multipliers. Optimization: the Hessian matrix and critical points. Multivariable Riemann integration: Fubini's theorem and the change of variables formula.

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<sup>1</sup>Information may change during the first two weeks of the term. Please consult the webpage for updates