

## The Department of Mathematics

2021–22–A term

**Course Name** Introduction to Linear Algebra C

**Course Number** 201.1.9281

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/fall2022/courses/introduction-to-linear->

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

### Abstract

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

### Course topics

1. Introduction: the real and complex numbers, polynomials.
2. Systems of linear equations and Gauss elimination.
3. Vector spaces: examples (Euclidean 2-space and 3-space, function spaces, matrix spaces), basic concepts, basis and dimension of a vector space. Application to systems of linear equations.
4. Inverse matrices, the determinant, scalar products.
5. Linear transformations: kernel and image, the matrix representation of a transformation, change of basis.
6. Eigenvalues, eigenvectors and diagonalization.

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