The Department of Mathematics

2018–19–A term

Course Name Introduction to Linear Algebra A

Course Number 201.1.9041

Course web page
    `https://www.math.bgu.ac.il//en/teaching/fall2019/courses/introduction-to-linear-`

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Office Hours `https://www.math.bgu.ac.il/en/teaching/hours`

Abstract

Requirements and grading[1]

Course topics

The course discusses elements of linear algebra over the real and complex numbers. .1 The complex numbers. Linear equations: elementary operations, row reduction, homogeneous and non-homogeneous linear equations. .2 Real and complex vector spaces. Examples, subspaces, linear dependence, bases, dimension. .3 Matrix algebra. Matrix addition and multiplication, elementary operations, LU decomposition, inverse matrix, the determinant, Cramer's law. .4 Linear transformations: examples, kernel and image, matrix representation. .5 Inner products, orthonormal sequences, the Gram-Schmidt process. .6 Diagonalization: eigenvalues and eigenvectors, the characteristic polynomial. Time permitting: unitary and orthogonal matrices and diagonalization of Hermitian and symmetric matrices.

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[1]Information may change during the first two weeks of the term. Please consult the webpage for updates