אוניברסיטת
בן-גוריון בנגב

The Department of Mathematics

2019—20—A term

Course Name Linear Algebra for Biotechnology

Course Number 214.1.9551

Course web page
`https://www.math.bgu.ac.il//en/teaching/fall2020/courses/linear-algebra-for-biot`

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

Abstract

Requirements and grading[1]

Course topics

Complex numbers.Systems of linear equations. Solving linear systems: row reduction and echelon forms. Homogenous and inhomogenous systems.Rank of matrix.Vector spaces. Linearly independent and linearly dependent sets of vectors. Linear combinations of vectors.Inner (dot) product, length, and orthogonality. The Gram - Schmidt process.Matrices: vector space of matrices, linear matrix operations, matrix multiplication, inverse matrix. An algorithm for finding inverse matrix by means of elementary row operations.Rank of matrix and its invertibility. Solving systems of linear equations by means of inverse matrix.Determinants. Condition detA=0 and its meaning. Tranposed matrix.Eigenvectors and eigenvalues. The characteristic polynomial and characteristic equation. Finding of eigenvectors and eigenvalues.Diagonalization and diagonalizable matrices. Symmetric matrices.

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