The Department of Mathematics
2017–18–B term

Course Name  Linear Algebra for physics students
Course Number  201.1.9641
Course web page  https://www.math.bgu.ac.il//en/teaching/spring2018/courses/linear-algebra-for-physics-students
Lecturer  Dr. Yosef Strauss, <strauss@bgu.ac.il>, Office 109-
Office Hours  https://www.math.bgu.ac.il/en/teaching/hours

Requirements and grading

Course topics

- Fields: definitions, the field of complex numbers.
- Linear equations: elementary operations, row reduction, homogeneous and inhomogeneous systems, representations of the solutions.
- Vector spaces: examples, subspaces, linear dependence, bases, dimension.
- Matrix algebra: matrix addition and multiplication, elementary operations, the inverse of a matrix, the determinant, Cramer’s rule.
- Linear transformations: examples, kernel and image, matrix representation.
- Diagonalization: eigenvectors and eigenvalues, the characteristic polynomial, applications.
- Bilinear forms.
- Finite dimensional inner product spaces.

\[\text{Information may change during the first two weeks of the term. Please consult the webpage for updates}\]
• Operators on finite dimensional inner product spaces: the adjoint, self adjoint operators, normal operators, diagonalization of normal operators.