

Lecture 17.03.2020

Linear mappings and Matrix Representation of a Linear Operator. Properties of Matrix Representations. A change-of-basis matrix. Matrices and General Linear Mappings.

Practical class 17.03.2020

Matrix Representation of a Linear Operator. A change-of-basis matrix.

Lecture 24.03.2020

Characteristic Polynomial, Cayley–Hamilton Theorem. Diagonalization, Eigenvalues and Eigenvectors.

Practical class 24.03.2020

Computing Eigenvalues and Eigenvectors, Diagonalizing Matrices.

Lecture 31.03.2020

Inner Product Spaces. Euclidean n -Space \mathbf{R}^n . Cauchy–Schwarz Inequality, Applications.

Practical class 31.03.2020

Inner Products. Orthogonality, Orthonormal Complements, Orthogonal Sets.

Lecture 07.04.2020

Orthogonality. Orthogonal Complements. Orthogonal Sets and Bases. Gram–Schmidt Orthogonalization Process

Practical class 07.04.2020

Projections, Gram–Schmidt Algorithm, Applications. Orthogonal Matrices.

Lecture 14.04.2020

Complex Inner Product Spaces. Normed Vector Spaces and Inner Product Spaces.

Practical class 14.04.2020

Complex Inner Product Spaces. Normed Vector Spaces.

Lecture 21.04.2020

Linear Operators on Inner Product Spaces. Adjoint Operators. Self-Adjoint Operators. Orthogonal and Unitary Operators. Spectral Theorem

Practical class 21.04.2020

Adjoint operators. Symmetric Operators and Canonical Forms in Euclidean Spaces. Normal Operators and Canonical Forms in Unitary Spaces