Teaching Plan (Discipline A-2: Elementary Linear Algebra):

Week 1: Fundamental operations with vectors in Euclidean space $\mathbb{R}^n$, Linear combination of vectors, Dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality.
[1] Chapter 1 [Sections 1.1, and Section 1.2 (up to Theorem 1.8)].

Weeks 2 and 3: Solving system of linear equations using Gaussian elimination, Application: Curve Fitting, Gauss-Jordan row reduction, Reduced row echelon form, Application: Solving several systems simultaneously.
[1] Chapter 2 (Sections 2.1, and 2.2).

Week 4: Equivalent systems, Rank of a matrix, Row space of a matrix.
[1] Chapter 2 (Section 2.3)

Weeks 5 and 6: Eigenvalues, Eigenvectors, Eigenspace, Diagonalization, Characteristic polynomial of a matrix.
[1] Chapter 3 [Section 3.4 (up to Page 197)].

Week 7: Definition, Examples and some elementary properties of vector spaces.
[1] Chapter 4 (Section 4.1).

Weeks 8 and 9: Subspaces, Span, Linear independence and linear dependence of vectors.
[1] Chapter 4 [Sections 4.2 to 4.4 (proofs of the Theorems in the Section 4.4 to be omitted)].

Week 10: Basis and dimension of a vector space, Maximal linearly independent sets, Minimal spanning sets.
[1] Chapter 4 [Section 4.5 (proofs of the theorems to be omitted)].

Weeks 11 and 12: Linear transformations: Definition, Examples and elementary properties, The matrix of a linear transformation.
[1] Chapter 5 [Section 5.1, and Section 5.2 (up to Example 4 on Page 341),
proofs of the Theorems 5.4 and 5.5 to be omitted].

Week 13: Kernel and range of a linear transformation, The dimension theorem.
[1] Chapter 5 [Sections 5.3].

Week 14: one-to-one and onto linear transformations, Invertible linear transformations, Isomorphic vector spaces.
[1] Chapter 5 [Sections 5.4 and Section 5.5 (up to page 376), proofs of the Theorems 5.16 and 5.17 to be omitted].