Summary
The purpose of the course is to introduce the basic notions of linear algebra and its applications.

Content
1. Linear systems;
2. Matrix algebra;
3. Vector spaces;
4. Bases and dimension;
5. Linear applications and matrices;
6. Determinant of a matrix;
7. Eigenvalues and eigenvectors;
8. Inner product, orthogonality, quadratic forms;
9. Orthogonal & Symmetric Matrices

Keywords
vector space, linearity, matrix, determinant, orthogonality, inner product

Learning Outcomes
By the end of the course, the student must be able to:
• Accurately make standard computations relevant to linear algebra and interpret the results;
• Define and provide illustrative examples of relevant theoretical notions;
• Identify examples of relevant theoretical notions;
• Construct a simple logical argument rigorously;
• Identify some connections between linear algebra and other branches of mathematics.

Teaching methods
Lectures and exercises in the classroom

Assessment methods
Written exam
Resources

Bibliography
Linear Algebra and its Applications / D.C. Lay etal, preferably 5th edition

Ressources en bibliothèque
• Linear Algebra and its Applications / Lay

Prerequisite for
Analysis II, III and IV, Numerical Analysis Statistics