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

Supervision
Office hours  No
Assistants  Yes
Forum  No

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