Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT262	Linear Algebra II	3	3	2	0	5	8

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Get to grips with basis Linear Algebra.
Content	Reminder: Determinant, Dual basis, Dual space, Eigenvalues, Eigenvectors, subspace, eigenspace and diagonalization. Inner product spaces, orthogonality, orthogonal complement. Operators on Inner product spaces, adjoint, self-adjoint, normal operators. Spectral theorem.
References	Linear Algebra Right Done, S. Axler Algebre Linéaire, Joseph Grifone, Algèbre linéaire et bilinéaire, F. Cottet Emard, de Boeck, 2007.

Theory Topics

Week	Weekly Contents
1	Introduction of course. Recall: Determinant, Dual Spaces, Dual basis
2	Eigenvalues, Eigenvecteurs
3	Diagonalisation
4	Quiz- Inner product spaces, Norms
5	Orthogonality
6	Orthonormal Basis
7	Orthogonal Complement
8	Midterm Exam- Adjoint-Self Adjoint Operators
9	Normal Operators
10	Spectral Theorem
11	Midterm Quiz-Positive Operators
12	Isometries
13	Unitary operators
14	Factorizations