

Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT116	Analytic Geometry	2	4	0	0	4	6

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Draw a connection between geometry in High School and 2nd year Undergraduate Linear Algebra and Analysis
Content	Planar coordinates, orthogonal coordinates, parallel coordinates, polar coordiantes, homogen coordinates, Vectors, Change of basis in a plane, Curves, Classification of planar curves, examples of algebraic curves, conics, Second degre curves in a plane, families of curves
References	Géométrie, Cours et Exercices, A. Warusfel et al., Vuibert 2002 Géométrie élémentaire, André Gramain, Hermann, 1997. Précis de géométrie analytique, G.Papelier, Vuibert 1950. Exercises de géométrie analytique, P.Aubert, G.Papelier,Vuibert 1953. Cours de géométrie analytique, B. Niewenglowski, Gauthier-Villars, 1894.

Theory Topics

Week	Weekly Contents
1	Planar coordinates, orthogonal coordinates, parallel coordinates, polar coordiantes, homogen coordinates
2	Planar coordinates, orthogonal coordinates, parallel coordinates, polar coordiantes,
3	homogeneous coordinates
4	Vectors, oriented segments
5	Linear dependance of vectors
6	Interior product, exterior product
7	Interior product, exterior product
8	Change of coordiantes in a plane
9	Change of coordiantes in a plane
10	Mid-term examination
11	Translations, rotations
12	Curves, classification of planar curves
13	Curves, classification of planar curves
14	Conics, Second degre curves in a plane, families of curves