Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT111	Physics I	1	3	0	0	3	5

Prerequisites	
Admission Requirements	
Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	Ability to question and initiation to physics methodology based on the concepts and principles of classical mechanics. Analyze different situations and physical phenomena based on the fundamental principles of classical mechanics: describe the translation and rotation movement of bodies, apply the concepts and laws of dynamics to the analysis of the movement of bodies. Tools: vector equation projection, polar coordinates, vector derivative and vector product (simple cases)
Content	Mechanics (kinematics, dynamics in Galilean frame of reference, work and energy, change of frame of reference)
References	- Physics for Scientists and Engineers by Serway and Jewett (Cengace Learning,9th Edition,2014) - Fundamentals of physics (Halliday and Resnick) - L'Univers Mécanique (Valentin)

Theory Topics

Week	Weekly Contents
1	Basic notions, Mathematics, Physics and Measurements
2	Vectors
3	1 Dimensional Motion
4	2 Dimensional Motion
5	Laws of Motion
6	Circular Motion and Other Applications of Newton's Laws
7	Midterm 1
8	Energy of a system
9	Conservation of Energy
10	The Law of Gravitation
11	Midterm 2
12	Linear Momentum and Collision of 2 Bodies
13	Rotation of a rigid object about a fixed axis
14	Angular Momentum