PHYS2111 Introduction to non-linear dynamics

[30h+22.5h exercises] 4.5 credits

This course is taught in the 2nd semester

Teacher(s): Jean Bricmont, Luc Haine
Language: French
Level: Second cycle

Aims

Introducing the student to the modern theory of dynamical systems, in particular to a precise approach to the notion of chaos.

Main themes

Hamiltonian mechanics
Hamiltonian and non-Hamiltonian dynamical systems
Elements of ergodic theory

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: the courses of analytical mechanics from 1st and 2nd candidatures.
This course is the last one of the three courses of mechanics. It is linked to those of electromagnetism (PHYS 2460), relativity (PHYS 2141) and statistical mechanics (PHYS 2460).
Support: no written support but precise references to published books.

Other credits in programs

MAP21	Première année du programme conduisant au grade d'ingénieur civil en mathématiques appliquées	(4.5 credits)	
MAP22	Deuxième année du programme conduisant au grade d'ingénieur civil en mathématiques appliquées	(4.5 credits)	
MATH21/E	Première licence en sciences mathématiques (Economie mathématique)	(4.5 credits)	Mandatory
MATH21/G	Première licence en sciences mathématiques (Général)	(4.5 credits)	Mandatory
MATH21/S	Première licence en sciences mathématiques (Statistique)		Mandatory
PHYS21/A	Première licence en sciences physiques (Physique appliquée)	(4.5 credits)	Mandatory
PHYS21/G	Première licence en sciences physiques	(4.5 credits)	Mandatory
PHYS21/T	Première licence en sciences physiques (Physique de la terre, de l'espace et du climat)	(4.5 credits)	