UCL Université catholique de Louvain

LPHY1323

2015-2016

General Relativity

5.0 credits	30.0 h + 22.5 h	2q

Teacher(s) :	Gérard Jean-Marc ;
Language :	Français
Place of the course	Louvain-la-Neuve
Prerequisites :	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes :	1. Introduction : from Newton's theory of gravitation to Einstein's equivalence principle. 2. Mathematical tools : differential geometry; tensors 3. Tests of general relativity around a massive spherical object : gravitational redshift and time dilatation; precession of Mercury perihelion; light deflection; radar echo; black holes; gravitational waves. 4. Cosmology : from Einstein's static universe to Lemaitre's expanding universe.
Aims :	A detailed description of general relativity, including the mathematical tools needed. Introduction to Einstein and Lemaitre's cosmology. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Other infos :	Prerequisites: theory of restricted relativity
Faculty or entity in charge:	PHYS

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Bachelor in Physics	PHYS1BA	5	LPHY1223	🔍