UCL Université catholique de Louvain

LPHY1222

2015-2016

Quantum Physics

4.0 credits	30.0 h + 30.0 h	2q

Teacher(s) :	Maltoni Fabio ;
Language :	Anglais
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 :	The course is divided in two concurrent parts: Part 1. Quantum Physics (30h) (2 lectures per week) Part 2. Mathematical tools for Quantum Mechanics (15h) (1 lecture per week) Part 1: - Discovery and observation of quantum phenomena in the microscopic world - The notion of a probability amplitude - Linear superposition and the Heisenberg principle - The Schrödinger equation - Examples of Solutions - The tunnel effect - Physical applications - The Stern-Gerlach experiment - Quantization of angular momentum. Part 2: - Fourier Series - Fourier Transforms - Hilbert Spaces
Aims :	As a complement to the courses PHYS 1111, PHYS 1112 and PHYS 1211 which establish the bases of classical mechanics, special relativity, electromagnetism and wave physics, the aim is to expose the student to the conceptual and physical bases of the quantum description of the microscopic world. *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 - Algebra and Analysis courses of BAC 1 - PHYS 1211
Faculty or entity in charge:	PHYS

Programmes / formations proposant cette unité d'enseignement (UE)

Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Minor in Physics	LPHYS100I	4	-	
Bachelor in Physics	PHYS1BA	4	LPHY1111 **and** LPHY1112	
Minor in Scientific Culture	LCUSC100I	5	-	
Additionnal module in Mathematics	LMATH100P	5	-	