UCL Université catholique de Louvain

LPHY2273

2013-2014

Cryophysique et questions spéciales de supraconductivité

6.0 credits	45.0 h + 15.0 h	1q

Teacher(s) :	Piraux Luc (coordinator) ; Bayot Vincent ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	First part : Cryophysics Introduction Cryogenic liquids Properties of materials at low temperature Cooling Thermometry Low temperature experiments Second part : Superconductivity 1. Main experimental phenomena associated to the superconducting state 2. Theoretical models of superconductivity 3. Macroscopic quantum phenomena in superconductors 4. Mesoscopic superconductivity (superconducting thin films, nanowires and dots) 5. Main applications of superconductivity Lab demonstrations and experimental aspects
Aims :	Provide the physical background cryogenic systems and related low temperature physics. Overview of the main physical phenomena asociated to superconductivity in solids and nanostructures; link with the main applications of superconductors. *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 :	Prerequisite: basic knowledge in physics of condensed matter (for instance : PHY 2342 ou MAPR 1492) Support : slides, textbook, notes
Cycle and year of study :	> Master [120] in Physics > Master [120] in Physical Engineering > Master [120] in Chemical and Materials Engineering > Master [120] in Electro-mechanical Engineering > Master [120] in Electrical Engineering
Faculty or entity in charge:	PHYS