




6.0 credits	45.0 h + 15.0 h	1q
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Teacher(s) :	Bayot Vincent ; Piraux Luc ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>First part : Cryophysics</p> <p>Introduction                      Cryogenic liquids                      Properties of materials at low temperature                      Cooling                      Thermometry                      Low temperature experiments</p> <p>Second part : Superconductivity</p> <ol style="list-style-type: none"> <li>1. Main experimental phenomena associated to the superconducting state</li> <li>2. Theoretical models of superconductivity</li> <li>3. Macroscopic quantum phenomena in superconductors</li> <li>4. Mesoscopic superconductivity (superconducting thin films, nanowires and dots)</li> <li>5. Main applications of superconductivity</li> </ol> <p>Lab demonstrations and experimental aspects</p>
Aims :	<p>Provide the physical background cryogenic systems and related low temperature physics.                      Overview of the main physical phenomena associated to superconductivity in solids and nanostructures; link with the main applications of superconductors.</p> <p><i>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".</i></p>
Other infos :	<p>Prerequisite: basic knowledge in physics of condensed matter (for instance : PHY 2342 ou MAPR 1492)                      Support : slides, textbook, notes</p>
Faculty or entity in charge:	PHYS

<b>Programmes / formations proposant cette unité d'enseignement (UE)</b>				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Chemical and Materials Engineering	KIMA2M	5	-	
Master [120] in Physical Engineering	FYAP2M	5	-	
Master [120] in Electrical Engineering	ELEC2M	5	-	
Master [120] in Physics	PHYS2M	6	-	