




5 credits

30.0 h

Q1

Teacher(s)	Hackens Benoît ;Melinte Sorin ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	<p>This course aims at teaching the main tools necessary to understand physical phenomena occurring at high and ultra-high vacuum, as well as to let students experiment with the technical aspects of the field. The following subjects are treated during the course : kinetic theory of gases, Boltzmann distribution, perfect gases and real gases, molecular effusion, conductance, pumping speed, phase change, vapor pressure, surface state, as well as the instruments related to the production and control of vacuum (vacuum pumps, pressure gauges, vacuum system design). The applications of vacuum are illustrated thanks to visits in different research laboratories, and several practical exercises realized in the laboratory allow to test the physical laws explained during the courses, to use different equipments related to the production and control of vacuum, and to demonstrate thin film deposition.</p> <p>The complementary expertise of the two professors is an asset that allows to cover a large variety of vacuum production techniques and applications.</p>
Aims	<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>
Bibliography	<ul style="list-style-type: none"> - Référence : le syllabus "Technique du vide", M. Guisset (1992); - les transparents donnés au cours; - les notices descriptives des laboratoires; - les notes techniques liées au projet.
Faculty or entity in charge	SC

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Electro-mechanical Engineering	ELME2M	5		
Master [120] in Electrical Engineering	ELEC2M	5		
Master [120] in Physics	PHYS2M	5		
Master [120] in Physical Engineering	FYAP2M	5		