UCLouvain

lchm1111

2017

General chemistry 1

10 credits	60.0 h + 60.0 h	Q1

Teacher(s)	Devillers Michel ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	The course will familiarize with scientific reasoning, the chemical and physico-chemical phenomena and the rules that they depend on. It will deal with (1) the classical atomic theory, leading to understanding the constitution, organisation and properties of atoms (2) mass relationship in chemical reactions and the concept of limiting reagents (3) the description of chemical bonding and the geometry of molecules, (4) the study of the main classes of chemical reactions, (5) an introduction to physical chemistry and its thermodynamic and kinetic aspects, with particular emphasis on chemical equilibrium. The course will cover in detail the acid-base reactions (including pH calculations, acid base titrations and buffer solutions), the reactions of precipitation and complexation, as well as oxido-reduction reactions (including the applications in batteries and electrolysis). Selected illustrations of these concepts will also provide a general overview of mineral chemistry in relation with its main industrial uses and daily life.
Aims	1 To give the bases of scientific reasoning, first qualitative, then quantitative, allowing to understand, analyse and forecast simple chemical phenomena. To give a global view of general chemistry from the point of view of matter constitution (atomic theory and chemical bonding), the main classes of reactions and chemical equilibrium. To illustrate the fundamental concepts by referring to examples of mineral chemistry linked to daily life and to the present challenges in science and technology. - - - - *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".*
Bibliography	Livre de P. Atkins, Laverman et Jones : "Principe de chimie", Trad. Française de A. Pousse (De Boeck SUPERIEUR), ou édition anglaise originale correspondante, complété par des notes de cours sur la première partie. Manuel de travaux pratiques.
Other infos	Prerequisites: secondary school level. Evaluation: Written and oral examination at the end of the year. Continuous evaluation (preparations and reports of laboratory work).
Faculty or entity in charge	CHIM

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [60] in Environmental Science and Management	ENVI2M1	10		
Bachelor in Chemistry	CHIM1BA	10		
Bachelor in Bioengineering	BIR1BA	10		
Bachelor in Biology	BIOL1BA	10		
Master [120] in Environmental Science and Management	ENVI2M	10		
Bachelor in Geography : General	GEOG1BA	10		
Minor in Scientific Culture	LCUSC100I	10		