UCLouvain

lchm1321

2020

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

4 credits	40.0 h	Q1

Teacher(s)	Dupont Christine (coordinator) ;Garcia Yann ;
Language :	French
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	At first, the course brings the student to a good knowledge in solution thermodynamics and to the quantitative prediction of their behaviour. Activity and standard state concepts must be used in a reasonable way at this stage. The different classes of reactions are then developed in order to rigorously exploit basic operations in quantitative chemical analysis. The study of gravimetry and titration allows illustrating fundamental bases of operating modes. Theoretical aspects of chromatographic separation methods as well as an introduction to spectrochemical analysis are given. Finally, theoretical bases and applications of potentiometry to an analytical problem are described. The student is here sensitised to important concepts such as electrode potentials, reference electrode, indicator electrode, and to the correspondence of an electrochemical circuit to the needs of analysis as well as analytical performances. The care specific to potentiometric methods is also outlined.
Aims	1 This course focuses on current methods of quantitative chemical analysis. It brings the student to practice a classical reasoning in quantitative chemical analysis and to strengthen his basic knowledge in this field. This project includes the familiarisation with the resolution methodology of a full analytical problem, starting from sampling to the evaluation and discussion of results. The cluster that also comprises CHM 1322 ensures a basic formation in analytical chemistry for the program in chemical sciences. This formation not only provides an excellent practice on analytical techniques, but also allows the student to develop schemes and analysis methods in a rigorous way, relying on physical chemistry concepts and an analytical thinking. - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Tests during the semester (20%) - Written exam (80%)
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** lectures - exercises - In reason of the limited number of places in classrooms this year (COVID crisis), part of the lectures will be given remotely
Content	Introduction - Chemical analysis and information - Chemical potential - Introduction to spectroscopy - gravimetry - volumetry - redox reactions - potentiometry - chromatography
Inline resources	Moodle website
Faculty or entity in charge	CHIM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Chemistry	CHIM1BA	5	LCHM1111 AND LCHM1211 AND LPHY1101 AND LPHY1102	