UCLouvain

lbir1341

2025

Laboratories, seminars and integrated practice of analytical chemistry

5.00 credits	30.0 h + 45.0 h	Q1

Teacher(s)	Detaille Arnaud (compensates Dupont Christine) ;Dupont Christine (coordinator) ;Huybrechts Thibaut (compensates Dupont Christine) ;
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.*
Learning outcomes	
Evaluation methods	Continuous evaluation (laboratory notebook keeping, individual and group reports, intermediate tests) (75% of final grade). Oral test, mainly related to data treatment and to the integrated exercises, at the end of the semester (25% of final grade) No examen in January (possibility of an exam in August, limited to the oral test)
Teaching methods	Resolution of exercises and discussion of concepts in group; feedback on laboratory reports. Laboratory practice, alone or in team of two or four students, and mentoring sessions to accompany planning of the work.
Content	Seminars (part B): Overview of analytical chemistry - Physico-chemistry of electrolyte solutions - Redox reactions and analytical applications - Membrane potential and potentiometric analytical methods - Precipitation and equilibria, gravimetric analysis - Acid-base reactions and analytical applications - Volumetry and titrimetry. Laboratory practice (part A and C): Volumetric and gravimetric analysis, direct and indirect potentiometric methods, use of analytical kits. The program is designed in such a way that: - It illustrates the course LBIR 1349 - It develops the critical mind towards quality of results (based on statistical tools acquired in other courses) - It ensures the progressive acquisition of autonomy in the work: application and discussion of protocols, comparison of different analytical methods, adaptation of protocols. - It allows the treatment of samples of particular interest for future bioengineers (soil samples, bio-industrial products) First part: analysis of a limestone, analysis of animal food samples (full protocols given) - statistical treatment of the experimental data Second part: integrated exercises: analysis of two systems chosen by the students (protocols must be adapted to each system) - comparison of methods - global balance - communication of results between students
Inline resources	Moodle On-line book: https://chem.libretexts.org/Bookshelves/Analytical_Chemistry/Analytical_Chemistry_2.1_(Harvey)
Bibliography	Notes et protocoles mis à la disposition des étudiants Informations diffusées via Moodle
Other infos	The course is in direct relationship with LBIR1349 Analytical chemistry 1
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Bioengineering	BIR1BA	5	LBIR1212 AND LCHM1211A	🔍