



CHIM2151 Analytical chemistry I

[30h] 3 credits

Teacher(s): Yann Garcia (coord.), Paul Rouxhet
Language: French
Level: Second cycle

Aims

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. This teaching cluster that also comprises CHIM 2152, CHIM 2154 and CHIM 2155, ensures a basic formation in analytical chemistry of the masters 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 and analytical reasoning basis.

Main themes

At first, the course brings the student to a good knowledge in solution thermodynamics and to the quantitative prevision of their behaviour. Activity and standard state notions must be used in a reasonable way at this stage. The different classes of reactions are then developed in order to rigorously exploit basics operation in quantitative chemical analysis. The study of gravimetry and titration allow illustrating fundamental bases of operating processes. Finally, theoretical bases and applications of potentiometry to an analytical problem are described; at this occasion, the student is sensitised to electrode potentials notions, reference electrode, indicator electrode, correspondence of an electrochemical circuit to the needs of analysis, as well as analytical performances and to care specific to potentiometric methods.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: knowledge of general chemistry is indispensable (1st candidature course).

Evaluation: written examination.

Support: Skoog, West and Holler, Harris, syllabus.

Programmes in which this activity is taught

BIR2 Bio-ingénieur

Other credits in programs

BIR21/C	Première année du programme conduisant au grade de bio-ingénieur (Chimie)	(7.5 credits)	Mandatory
CHIM21	Première licence en sciences chimiques		Mandatory