

3.00 credits

0 h + 60.0 h

Q2

Teacher(s)	Leysens Tom ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	<p>The course contains a practical and theoretical formation to experimental methods of physical chemistry. The aspects treated are mainly :</p> <ul style="list-style-type: none"> • Thermodynamics in gas or condensed state (thermochemistry, phase equilibrium, chemical equilibrium, properties of solutions, ...) • Kinetics of chemical reactions (determination of reaction orders, rate constants, ...) • Transport properties (kinetic theory of gases, viscosity of gases and liquids, electric field effects, ...) • Electrochemistry (conductivity, ...) • Molecular properties (spectroscopies: IR, UV, ..., dielectric properties, ...).
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>1 The objectives of the course are to integrate and analyze in a critical way the acquisitions and treatments of experimental data necessary to study a chemical problem. Emphasis is put on the polyvalent character of techniques and methods used.</p>
Evaluation methods	<ul style="list-style-type: none"> • reports • 1 written exam • laboratory behavior rating
Teaching methods	<ul style="list-style-type: none"> • Laboratory 8h30-5h30 • Careful handling (products,) • Gown and glasses are mandatory • No smoking or eating in the lab • Clean everything at the end (the end = after you have interpreted your results) • Syringes vs. pipettes • Help your classmates in the morning / interactive learning by explanation
Content	<ul style="list-style-type: none"> • Physical chemistry = why a change (chemical/physical). • Different from other labs / we aim to understand the concepts you have seen. • Data collected in the lab are to be interpreted to understand the physical/chemical phenomena. <p>In an ideal reality, the approach would be :</p> <ul style="list-style-type: none"> • Problem • Identify the questions it raises • Develop relevant experiments in view of these questions • Carry out these experiments and collect data • Interpret the data • Formulate answers/answers to the initial questions • Review the initial problem
Inline resources	Explained labs available on moodle.

<p>Other infos</p>	<p><u>Interpretation of the results</u> :</p> <ul style="list-style-type: none"> • On computer • End of day report or sheet with results (by mail) • Tools learned in statistics class (confidence intervals/prediction, CS, regression, ...) <p><u>Report</u> :</p> <ul style="list-style-type: none"> • 1 per group/ heading: Names; Group nr, Dte, Session nr, Title) • Report writing is important and crucial in these labs. • Learning: COMMUNICATE YOUR RESULTS • 4 parts (principle and goals; measured quantities, experimental results, interpretation !!!!!!!). • Comparison with literature (database, NIST, Handbook of Physics, ...). Mention where you find these data. • Value does not have to be exact, but explain well why, ... Reflect on your results. • No lab notebook to hand in (notebook = personal) • Pay attention to the units • 4/5 pages
<p>Faculty or entity in charge</p>	<p>SC</p>

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Chemistry	CHIM1BA	3		