


5 credits

45.0 h + 10.0 h

Q1

Teacher(s)	Leyssens Tom ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	A detailed study of the properties of matter and molecules is presented and completed by a discussion of chemical reactivity models. Teachers will place emphasis on microscopic versus macroscopic properties connecting both approaches through a statistical point of view.
Aims	<p>1 The course aims to guide students in completing their knowledge in physical chemistry and to apply it to concrete cases. A systematic presentation completes the education of chemical thermodynamics and kinetics acquired during the bachelor's degree.</p> <p>-----</p> <p><i>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".</i></p>
Content	<p>Content 1. Study of intermolecular interactions and their consequences on the thermodynamics of chemical phenomena. Introduction to the statistical thermodynamics of condensed phases (Molecular dynamics and Monte Carlo approaches)</p> <p>2. Defining and studying molecular properties (dipoles, quadripoles, polarisabilities, hyperpolarisabilities,).</p> <p>3. Chemical reaction theories: collisions theory, transition state theory</p> <p>4. Complex Reactions: Chain reactions (linear or branched) polymerisation reactions, catalysed reactions, chemical oscillators,</p>
Other infos	Background: Physical chemistry I (CHM1351). Evaluation: written examination. Documents: detailed plan of the course and reference books. The course could be partly or totally delivered by an invited lecturer.
Faculty or entity in charge	CHIM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Chemistry	CHIM2M	5		
Master [60] in Chemistry	CHIM2M1	5		