

5.00 credits

30.0 h + 30.0 h

Q1

**This learning unit is not open to incoming exchange students!**

Language :	French
Place of the course	Charleroi
Prerequisites	The student must have the basic notions of chemistry as taught in science courses in general secondary education, namely: basic concepts such as understanding the notion of mole, atomic mass, molar and relative molecular, Avogadro's number, density, concentration and specific gravity. He must also know the symbols of the chemical elements, the nomenclature used in general chemistry and the main organic chemical functions.
Main themes	The first part of the course will deal with elements of general chemistry and thermodynamics for the understanding of chemical structures, interactions and reactivity. In a second part, the major classes of organic compounds will be presented as well as the main chemical reactions useful for understanding certain biochemical or biological phenomena.
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p>S1.G5 At the end of this teaching unit, the student is able to:</p> <p>S5.2, - to master the molecular structures of the main organic compounds, their interactions and their transformations by chemical reactions;</p> <p>S5.3, - to master the concepts making it possible to quantify a chemical reaction both from the point of view of the material balance and the energy balance;</p> <p>S5.4, - to master the concepts making it possible to quantify a chemical reaction both from the point of view of the material balance and the energy balance;</p> <p>S6.1, - apply computer science skills to general and organic chemistry such as the use of software for the simulation of chemical reaction monitoring.</p>
Evaluation methods	<p>Students are evaluated on the basis of:</p> <ol style="list-style-type: none"> <li>1) their work during the quarter and</li> <li>2) a final exam.</li> </ol> <p>The final grade is based on:</p> <ul style="list-style-type: none"> <li>- a written exam at the end of the semester which counts for 65% of the final grade</li> <li>- a lab grade which is based on the participation in the lab sessions and the submission of two reports, and which counts for 25% of the final grade</li> <li>- a continuous assessment during the semester which counts for 10% of the final grade</li> </ul> <p>The mark related to the laboratories is acquired for all sessions of the academic year, by virtue of art. 78 of the RGEE.</p> <p>A written quiz during the quarter may allow to be exempted from a part of the questions of the final exam if the mark obtained for this quiz is equal to or higher than 13/20. The parts of the course covered by this exemption will be communicated to the concerned students after the quiz.</p> <p>Participation in practical work sessions (laboratories) organized during the year is required.</p>
Teaching methods	<p>The course is based on :</p> <ul style="list-style-type: none"> <li>- Lectures given in person and/or by video-conference</li> <li>- video clips describing some concepts covered during the course</li> <li>- exercise sessions</li> <li>- practical work sessions (laboratories).</li> </ul>
Content	The first part of the course deals with the elements of general chemistry and thermodynamics for the understanding of chemical structures, interactions and reactivity. In a second part, the main classes of organic compounds will be presented as well as the main chemical reactions useful to understand some biochemical or biological phenomena.
Inline resources	The slides used during the lectures, the video capsules as well as the statements of the exercises and labs are made available via the Moodle website of the course.

Bibliography	<p>Les ouvrages suivants sont recommandés :</p> <p>1- Chimie générale, une approche moléculaire, 2e édition   (Français) Broché – 27 avril 2018 de Julie Vézina (Adapté par), Nivaldo J. Tro (Avec la contribution de), Jean-Marie Gagnon (Avec la contribution de)</p> <p>2- Chimie organique simple et intuitive - David Klein – Traduction française P. Depovere – Edition Deboeck.</p>
Other infos	<p>The student taking this course must have basic notions of chemistry such as the notion of mole, atomic, molar and relative molecular mass, Avogadro number, density, concentration and density. He/she must also know the symbols of chemical elements, the nomenclature used in general chemistry and the main organic chemical functions.</p>
Faculty or entity in charge	SINC

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Computer Science	<a href="#">SINC1BA</a>	5		