


3.00 credits

22.5 h + 7.5 h

Q1

Teacher(s)	Fustin Charles-André ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Main themes	<ol style="list-style-type: none"> <li>1. Basic definitions</li> <li>2. Ionization modes</li> <li>3. Analyzers</li> <li>4. Chromatographic couplings</li> <li>5. Spectral data interpretation</li> <li>6. Introduction to the identification and sequencing of proteins and peptides by mass spectrometry.</li> </ol>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <ol style="list-style-type: none"> <li>1 This course covers technical aspects of mass spectrometry and interpretation of spectral data.</li> </ol>
Evaluation methods	The participation <b>to all the activities of the course</b> is mandatory to validate the course and be allowed to present the exam. The exam consist in a personnel work based on the scientific literature to be presented to all the other students following the course.
Teaching methods	The course is given mainly on the blackboard using powerpoint slides. The lecture part is followed by exercises.
Content	<p>After a brief survey of the basic definitions, the various mode of ionization (EI, CI, FAB, ESI, APCI, APPI, DESI, DAPCI, DAPPI) will be described in details.</p> <p>The different analyzers (Quad, triple Quad, Traps, TOF, Orbitrap, FTICR) will be presented together with their possible scanning modes and their combinations. Couplings with Gc and HPLC will be presented. The interpretation of spectral data will first emphasize the differences between low resolution and low accuracy versus high resolution and high accuracy data.</p> <p>The importance of the isotopic cluster will be demonstrated. The principal rules of fragmentation of radical-cations will be presented together with some basic rules for the fragmentation of ions with even-number of electrons.</p> <p>Selected examples and exercises will be explicitly studied in this part of the course.</p> <p>At the end of the course, several examples of the utility of mass spectrometry for different domains will be seen through the presentations of the students.</p>
Inline resources	A copy of the slides has been deposited on Moodle
Other infos	<p>Prerequisite :</p> <ul style="list-style-type: none"> <li>- Basic knowledge of chemistry and physics</li> <li>- CHM1251C course.</li> </ul>
Faculty or entity in charge	CHIM

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Chemistry	<a href="#">CHIM2M</a>	3		
Master [60] in Chemistry	<a href="#">CHIM2M1</a>	3		