

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

5 credits








30.0 h + 30.0 h

Q1

Teacher(s)	Mouraux André ;Verleysen Michel ;
Language :	English
Place of the course	Louvain-la-Neuve
Aims	<p>With respect to the AA referring system defined for the Master in Biomedical Engineering, the course contributes to the development, mastery and assessment of the following skills :</p> <p>1       • AA1.1, AA1.2, AA1.3                   • AA2.1, AA2.2, AA2.3, AA2.4                   • AA3.2                   • AA6.1, AA6.2, AA6.3</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>
Evaluation methods	<p><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <p>Closed book oral exam. Examination modalities may be adapted according to sanitary rules and to the number of registered students.</p>
Teaching methods	<p><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <p>Ex-cathedra course organized physically if sanitary conditions permit, and broadcasted or recorded if required by sanitary rules. Practical sessions on computers. Meetings with biomedical instrument users and/or manufacturers (hospitals, pharmacology industry, and instrument manufacturers) if feasible according to sanitary rules.</p>
Content	<ul style="list-style-type: none"> <li>• specifics of measurements and instruments in clinic and biology</li> <li>• electric and magnetic stimulation and recording</li> <li>• use of other energy types (indications, methods and interest)</li> <li>• safety notions (patient and user protection, asepsis and sterilization, device compatibility)</li> <li>• application examples, especially those requiring a mathematical analysis (ECG, EEG, evoked potentials, etc..)</li> <li>• descriptive methods of data analysis</li> <li>• single- and multi-variable analysis</li> <li>• linear and non-linear regression</li> <li>• classification</li> <li>• principal components analysis</li> <li>• frequency analysis of signals, spectrum and sampling</li> </ul>
Inline resources	<a href="http://moodleucl.uclouvain.be/course/view.php?id=86">http://moodleucl.uclouvain.be/course/view.php?id=86</a>
Bibliography	Les transparents présentés lors des exposés théoriques, de même que quelques articles scientifiques de référence, sont disponibles sur Moodle.
Other infos	/
Faculty or entity in charge	GBIO

### Force majeure

Teaching methods	Ex-cathedra course broadcasted or recorded. Distant practical sessions on computers. Meetings with biomedical instrument users and/or manufacturers (hospitals, pharmacology industry, and instrument manufacturers) if feasible according to sanitary rules.
Evaluation methods	Closed book oral exam, possibly organized online.

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Computer Science and Engineering	<a href="#">INFO2M</a>	5		
Master [120] in Electrical Engineering	<a href="#">ELEC2M</a>	5		
Master [120] in Chemical and Materials Engineering	<a href="#">KIMA2M</a>	5		
Master [120] in Electro-mechanical Engineering	<a href="#">ELME2M</a>	5		
Master [120] in Mathematical Engineering	<a href="#">MAP2M</a>	5		
Master [120] in Chemistry and Bioindustries	<a href="#">BIRC2M</a>	5		
Master [120] in Statistic: Biostatistics	<a href="#">BSTA2M</a>	5		
Master [120] in Biomedical Engineering	<a href="#">GBIO2M</a>	5		