



5.00 credits

30.0 h + 30.0 h

Q2

Teacher(s)	Contino Francesco ;Jeanmart Hervé ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Main themes	<ul style="list-style-type: none"> <li>• Experimental characterization of energy conversion technologies</li> <li>• Introduction to the metrology specific to the energy systems</li> <li>• Application of uncertainty analysis to energy systems</li> <li>• Introduction to the safety aspects of lab work</li> </ul>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p><b>Contribution of the course to the program objectives (N°)</b></p> <ul style="list-style-type: none"> <li>• AA1.1, AA1.2, AA1.3</li> <li>• AA3.1, AA3.2</li> <li>• AA5.3, AA5.4, AA.5.5, AA5.6</li> <li>• AA6.1, AA.6.3</li> </ul> <p><sup>1</sup> <b>Specific learning outcomes of the course</b></p> <ul style="list-style-type: none"> <li>• Identify the different components of energy conversion technologies</li> <li>• Operate machines in laboratory</li> <li>• Collect and report experimental data</li> <li>• Analyze, interpret and appraise experimental results including their uncertainty analysis</li> <li>• Compare theoretical and actual performances of energy conversion technologies</li> </ul>
Evaluation methods	<p>Evaluation methods :</p> <ul style="list-style-type: none"> <li>• Continuous assessment during the labs : 50% of the final grade</li> <li>• Oral examination based on the lab reports (portfolio) / presentation by the students of some of their results to answer questions asked by the teachers : 50% of the final grade</li> <li>• The marks can be individualized for the different members of a group based on their effective participations to the activities during the semester and the oral examination.</li> </ul> <p>Participation to the labs is mandatory. Unmotivated absence to the labs means an absence for the course. The labs are only organised during the semester. The labs cannot be done during the summer. Based on Art. 78 of the RGEE, there is no August/September session for this course. <b>The marks obtained in June are kept for the next session.</b></p>
Teaching methods	<ul style="list-style-type: none"> <li>• Laboratory activities</li> <li>• Formal lectures on the analysis and the reporting of experimental data</li> </ul> <p>At minimum, the students must be available at the slots dedicated to the course on the planning (ADE). Labs might be organised also at other slots during the semester based on student availabilities.</p>
Content	<p>The course is centered on laboratories related to the field of energy. Several conversion technologies are available and are the subjects of the labs:</p> <ul style="list-style-type: none"> <li>• IC engines (CHP units)</li> <li>• Gas turbines</li> <li>• Wind turbines</li> <li>• PV panels</li> <li>• Heat pump</li> <li>• Compressor</li> <li>• Solar thermal</li> <li>• Cooling technologies</li> <li>• Batteries</li> <li>• Fuel cell</li> </ul>
Faculty or entity in charge	ELME

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Mechanical Engineering	MECA2M	5		
Master [120] in Electro-mechanical Engineering	ELME2M	5		
Master [120] in Energy Engineering	NRGY2M	5		