


5 credits

30.0 h + 30.0 h

Q2

Teacher(s)	Louveaux Jérôme ;Vandendorpe Luc ;
Language :	English
Place of the course	Louvain-la-Neuve
Aims	<p>With respect to the AA referring system defined for the Master in Electrical Engineering, the course contributes to the development, mastery and assessment of the following skills :</p> <p>1</p> <ul style="list-style-type: none"> <li>• AA1.1, AA1.2, AA1.3</li> <li>• AA2.1, AA2.2, AA2.4</li> <li>• AA3.1</li> <li>• AA4.2, AA4.4</li> <li>• AA5.3, AA5.5</li> </ul> <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>The project is evaluated through a written report as well as a presentation by the students, followed by oral discussion on the results of the project.</p> <p>The students are also evaluated individually with a written examination, based on the objectives described earlier. The examination is open-book and mostly based on exercices applying the different studied concepts.</p>
Teaching methods	<p>The cours is organized as follows</p> <ul style="list-style-type: none"> <li>• 14 lectures</li> <li>• 6-7 exercice sessions</li> <li>• A project based on Matlab simulations, carried out in groups of 2 students. The project is supervised and takes the equivalent of 6-7 exercice sessions. The project starts around April and lasts until the last week of the semester.</li> </ul>
Content	<ul style="list-style-type: none"> <li>• Introduction to digital communication systems</li> <li>• Random signals, modulations and detection</li> <li>• Coherent and noncoherent demodulation</li> <li>• Basics of Information theory</li> <li>• Convolutional codes</li> <li>• Adaptive modulation and coding</li> <li>• Equalization (Linear and decision-feedback)</li> <li>• Synchronization (time, frequency and phase)</li> </ul>
Inline resources	<p>Moodle</p> <p><a href="http://moodleucl.uclouvain.be/course/view.php?id=4823">http://moodleucl.uclouvain.be/course/view.php?id=4823</a></p>
Bibliography	<p><u>Supports</u></p> <ul style="list-style-type: none"> <li>• Syllabus de cours</li> <li>• Transparents</li> <li>• Enoncés et corrigés des séances d'exercices</li> </ul> <p>L'ensemble de ces supports de cours sont disponibles sur Moodle</p>
Faculty or entity in charge	ELEC

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Electrical Engineering	<a href="#">ELEC2M</a>	5		
Master [120] in Mathematical Engineering	<a href="#">MAP2M</a>	5		