UCLouvain

lelec2880

2019

Modem design

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

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	With respect to the AA referring system defined for the Master in Electrical Engineering, the course contributes to the develoopment, mastery and assessment of the following skills : 1 • AA1.1, AA1.2, AA1.3 • AA2.1, AA2.2, AA2.4 • AA3.1 • AA4.2, AA4.4 • AA5.3, AA5.5 - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** 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. 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.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The cours is organized as follows • 14 lectures • 6-7 exercice sessions • 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.
Content	• Introduction to digital communication systems • Random signals, modulations and detection • Coherent and noncoherent demodulation • Basics of Information theory • Convolutional codes • Adaptive modulation and coding • Equalization (Linear and decision-feedback) • Synchronization (time, frequency and phase)
Inline resources	Moodle http://moodleucl.uclouvain.be/course/view.php?id=4823
Bibliography	Supports • Syllabus de cours • Transparents • Enoncés et corrigés des séances d'exercices L'ensemble de ces supports de cours sont disponibles sur Moodle
Faculty or entity in charge	ELEC

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Electrical Engineering	ELEC2M	5		
Master [120] in Mathematical Engineering	MAP2M	5		