

4.0 credits

30.0 h + 15.0 h

1q

Teacher(s) :	Matagne Ernest ; Labrique Francis (coordinator) ; Dehez Bruno ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<ul style="list-style-type: none"> - Methods taking into account certain physical characteristics in the form of global models (non-linear characteristic of magnetic materials, slipping circuits, calculation of parameters per homogenisation) - Electromechanical conversion analysis into local terms (based on the determination of the fields and the force distributions) - Introduction to the CAD software tools in electrical engineering - Detailed attention to the coherence of the introduced concepts
Aims :	<p>To analyse the internal physical behaviour of converters with electromagnetic coupling used for actuation or energy transformation, in order to allow the evaluation of their performances and the establishment of methods of designing of these devices. This analysis is based on the application of the laws of electromagnetism.</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>
Content :	<p>This course approaches the design of the converters with electromagnetic coupling. It describes the internal physics of these converters, its influence on their behaviour and the implications in terms of dimensioning and mode of use.</p>
Other infos :	<p>Prerequisites :</p> <p>A basic knowledge of the electromechanical converters is required, like that acquired at the time of the course ELEC1310 or ELEC2753.</p> <p>For more information, see http://www.lei.ucl.ac.be/~matagne/ELEC2311/INDEX.HTM. Moreover the students can require weekly all the explanations they wish</p> <p>Assessment :</p> <p>Oral exam during the session, on the basis of reports issued by the students during the year (in groups)</p>
Cycle and year of study :	<p>> Master [120] in Electrical Engineering</p> <p>> Master [120] in Electro-mechanical Engineering</p>
Faculty or entity in charge:	ELEC