UCL Université catholique de Louvain

LELEC2525
2012-2013

Introduction to electric and electronic circuits

5.0 credits	30.0 h + 30.0 h	1q

Teacher(s) :	Verleysen Michel ; Legat Jean-Didier ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	Identical to description
Aims :	At the end of the course, the students will be able to : - calculate DC, transient, periodic and frequency responses of circuits with resistors, capacitors and inductors, - understand and describe the behavior of basic electronic components (diodes, MOS and bipolar circuits), - use their knowledge of transistor responses to understand basic electronic circuits and comute their DC and transient responses - design simple electronic circuits based on operational amplifiers, - understand the principles of analog-to-digital and digital-to-analog converters, - make electrical measures with standard measurement devices like oscilloscopes and multimeters *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".*
Content :	Part A : introduction to electrical circuits - reminder on circuit theory : resistive, RL, RC and RLC circuits; dependent sources; DC and transient responses - periodic and transient responses Part B : introduction to electronical circuits - semiconductors : N and P doping - diodes - MOS transistors : DC and small-circuit responses, frequency response - bipolar transistors : modes of operation, large and small-signals transfer functions - operational amplifiers; feedback - analog-to-digital and digital-to-analog converters
Other infos :	Group exercices and laboratories Reference : Electrical Engineering - Principles and Applications 2nd Edition - Allan R. Hambley - 2002-0-13061070-4 Assessment : Written exam during the sessions.
Cycle and year of study :	> Master [120] in Computer Science and Engineering > Master [120] in Mechanical Engineering
Faculty or entity in charge:	ELEC