UCL Université catholique de Louvain

LELEC2650

2012-2013

Synthesis of analog integrated circuits

5.0 credits	30.0 h + 30.0 h	1q

Teacher(s) :	Flandre Denis ;
Language :	Français
Place of the course	Louvain-la-Neuve
Prerequisites :	LELEC1530 and LELEC2532 courses
Main themes :	Identical to description
Aims :	The design of analog integrated systems and of mixed analog-digital type in application in instrumentation, telecommunication, signal processing ... is based on in-depth knowledge of electronics devices and circuits. This course aims at presenting the state-of-the art (architectural solutions, performances and limitations) and at providing an advanced design methodology. *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 :	-- Analog modelling of the MOS transistor -- Operational and transconductance amplifiers -- Switched-capacitor filters -- Continuous-time filters -- Switched-current circuits -- D-A, A-D converters (incl. Sigma-Delta) The details of the internal achitecture and of the operation of analog CMOS basic blocks and circuits are studied in the cases of actual integrated systems. Design and optimisation strategies are derived in order to achieve the performance specifications of target applications. Advanced computer-aided analysis and synthesis techniques are introduced. Practical case studies are presented or implemented in the frame of exercice sessions.
Other infos :	Course given in French, but can be in English if necessry
Cycle and year of study :	> Master [120] in Electrical Engineering > Master [120] in Electro-mechanical Engineering
Faculty or entity in charge:	ELEC