

5.0 credits	30.0 h + 30.0 h	1q
-------------	-----------------	----

Teacher(s) :	Flandre Denis ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	Identical to the contents of the course
Aims :	<p>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.</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 :	<ol style="list-style-type: none"> 1. Analog modelling of the MOS transistor 2. Operational and transconductance amplifiers 3. Switched-capacitor filters 4. Continuous-time filters 5. Switched-current circuits 6. D-A, A-D converters (incl. Sigma-Delta) <p>The details of the internal architecture 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.</p> <p>Advanced computer-aided analysis and synthesis techniques are introduced. Practical case studies are presented or implemented in the frame of exercise sessions.</p>
Other infos :	<p>Prerequisites : ELEC1530, ELEC2531 and ELEC2532 courses</p> <p>Practical sessions mainly consists in computer-based implementations of the course optimal design strategies for cases of study under consideration and include the learning and use of standard CAD tools such as MATLAB, SPICE (ELDO), Cadence ...</p> <p>Assessment : Presentation of a work at the end of the semester.</p> <p>Supporting materials : in english This course is given in french but could be given in english for non french-speaking students</p>
Cycle and year of study :	<p>> Master [120] in Electrical Engineering > Master [120] in Electro-mechanical Engineering</p>
Faculty or entity in charge:	ELEC