



Faculté des sciences appliquées

FSA

ELEC2570 IMPLEMENTATION OF DIGITAL ELECTRONIC SYSTEMS

[30h+30h exercices] 5 credits

This course is taught in the 1st semester

Teacher(s): Jean-Didier Legat
Language: french
Level: 2nd cycle course

Aims

The aim of the course is to study in-depth advanced digital integrated circuits and digital electronics systems. This course will also introduce reconfigurable architectures and parallel processor architectures.

Content and teaching methods

- 1) Advanced digital integrated circuits
 - precharged circuits (Domino Logic, No-Race, TSPC)
 - differentials circuits
 - arithmetic circuits (adders, multipliers, PLA)
 - test of digital circuits
- 2) Reconfigurable architectures
 - PLD, CPLD, FPGA
 - hardware-software codesign
 - simulation and synthesis : VHDL and SystemC
- 3) Processor architectures
 - risk and pipelined architectures
 - parallel architectures (VLIW, SIMD, superscalar)
 - DSP architectures

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite :

ELEC2531 : Electronics III

Assessment method :

Works performed during the semester

Based on small projects done by the students (VHDL, SystemC, Eldo simulations) on a written examination

Support :

Copy of the slides and a dedicated website

For more information:

<http://www.dice.ucl.ac.be/~jdl/InfoCours/InfoCours.htm>

Other credits in programs

ELEC23	Troisième année du programme conduisant au grade d'ingénieur civil électricien	(5 credits)
ELME23/M	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)
FSA3DA	Diplôme d'études approfondies en sciences appliquées	(5 credits)