ELEC2531 Electronics II : Digital electronic circuits

[30h+30h exercises] 5 credits

This course is taught in the 1st semester

Teacher(s): Jean-Didier Legat, Charles Trullemans
Language: French
Level: Second cycle

Aims

The aim of the course is to study in-depth standard digital integrated circuits (such as Boolean gates, flip-flops, registers, finite-state machines, memories, ...) including the design, simulation and synthesis aspects. This course will also present the architecture of standard microcontrollers.

Main themes

Identical to the contents of the course

Content and teaching methods

1) Standard digital circuits
- combinatorial circuits
- implementation
- sequential circuits (Flip-flops, counters, FSM)
- VHDL : synthesis and simulation

2) Microcontrollers
- architecture
- peripherals
- assembler programming

3) Integrated digital circuits
- spice models
- MOS digital circuits (NMOS, CMOS)
- bipolar digital circuits (TTL, ECL, BiCMOS)
- memories (ROM, SRAM, DRAM)

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

Prerequisites
ELEC2530 : Electronics I
Assessment
Oral examination on the theoretical part of the lectures (slides seen during the lectures), and on the making of one or two digital electronic circuits
Bibliography
Supporting material : 2 English text books and a dedicated website
For more information:
http://www.dice.ucl.ac.be/~jdl/InfoCours/InfoCours.htm

Programmes in which this activity is taught

INFO2 Ingénieur civil informaticien

Other credits in programs

ELEC22	Deuxième année du programme conduisant au grade d'ingénieur civil électricien	(5 credits)	Mandatory
ELEC23	Troisième année du programme conduisant au grade d'ingénieur civil électricien	(5 credits)	
ELME22/M	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(5 credits)	Mandatory
FSA3DA	Diplôme d'études approfondies en sciences appliquées	(5 credits)	
INFO22	Deuxième année du programme conduisant au grade d'ingénieur civil informaticien	(5 credits)	Mandatory
INFO23	Troisième année du programme conduisant au grade d'ingénieur civil informaticien	(5 credits)	