UCLouvain

lelec2532

2024

Analog electronic systems

5.00 credits	30.0 h + 30.0 h	Q2

Teacher(s)	Bol David ;Flandre Denis (coordinator) ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Prerequisites	Students are expected to master the following skills: continuous-time signal representation both in time and frequency domains, mathematical system representations (transfer function, impulse response, stability, filtering), principles and properties of Fourier and Laplace transforms, analysis of electrical circuits based on passive components (R, L, C), in DC, transient and AC regimes, understanding of general behavior of operational amplifiers, diodes and transistors with the associated basic electronic circuits, as they are covered within the courses

Teaching methods	The course is organized as follows: • lectures on generic analog concepts and building blocks, • exercise sessions on these concepts and building blocks, • flipped classes about typical analog applications and associated specific architectures of analog systems, these classes are based on a reading at home and a group challenge in class with a SPICE simulation tool, • seminar given by an expert from the industry (if time allows).
Content	• Noise in analog circuits. • Opamp-based circuits. • Analog filters. • Voltage and current references. • Voltage regulators. • Memories. • CMOS imagers. • Oscillators. • Phase-locked loops (if time allows). • High-speed serial I/Os (if time allows).
Inline resources	https://moodle.uclouvain.be/course/view.php?id=620
Bibliography	

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes