

Analog Systems

Person in charge: Mariam CAMARA

Prerequisite: IE.1101

Organization: Lectures and exercises, Practical sessions

Evaluation: - Mid-term exam (30%), Practical work and projects (30%), Final exam (40%)

ECTS: 5 credits

Context

Analog electronics is the basic bloc of any electronic device. A technical knowledge of the different blocs needed to build a complex system allows getting a clear ensemble view the engineer needs to use in order to improve this system and innovate. This course follows up electronic part of the project-based learning in ISEP to consolidate analog knowledge and give missing pieces to elaborate a full device by studying power management, energy conversion, signal conditioning, noise, analog to digital converters and RF transmissions.

Syllabus

Following subjects will be addressed :

- introduction to power electronics
- signal conditioning and instrumentation amplifier
- Noise and amplification chain
- ADC – DAC converter
- Amplification with transistors
- Analog signal modulation (AM,FM), mixer, PLL and VCO.

Pedagogical Approach

- Courses and exercises mixed in order to better assimilation of the presented concepts.
- Practical works and projects will allow to discover and apprehend all the analogical elements in connected devices.

Bibliography- Webography – Other sources

Online slides (moodle)