EE-706
Active noise control
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Cursus
Génie électrique

Language
English
Credits
2
Session
Obl.
Type

Exam
Multiple
Workload
60h
Hours
28

Lecture
14
Exercises
4
Practical work
10
Number of positions
20

Frequency
Every 2 years

Remarque
Next time: Spring 2021

Summary
Acoustics, electroacoustics transducers, filters design, antennas, active noise control, sound field control.

Content
1. **Fundamental acoustics**
   Sound propagation - sound sources - interferences - refraction of sound - Guided waves in 1D (transmission lines, lumped-elements model)
2. **Active noise control concepts**
   Historics of active noise control - Feedforward active noise control - Feedback active noise control - From active noise cancellation to active sound absorption
3. **Electroacoustic transductions**
   Transductions and models (actuators, sensors, arrays of transducers) - Sound sources optimization and control
4. **Transducer-based active concepts**
   Shunt loudspeakers - Bridging the gap between shunt loudspeakers and active sound absorption

Keywords
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Learning Prerequisites
**Recommended courses**
Audio I and II, acoustic propagation.

Assessment methods
Project report and oral presentation.