EE-706

Active noise control

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Cursus	Sem.	Type
Electrical Engineering		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Multiple
Workload	60h
Hours	**28**
Lecture	14
Exercises	4
Practical work	10
Number of positions	**20**

Frequency

Every 2 years

Remark

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

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

Learning Prerequisites

Recommended courses

Audio I and II, acoustic propagation.

Assessment methods

Project report and oral presentation.