

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
<b>Hours</b>	<b>28</b>
Courses	14
Exercises	4
TP	10
<b>Number of positions</b>	<b>20</b>

**Frequency**

Every 2 years

**Remark**

Every 2 years. 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.