

# General acoustics

---

Revised in May 2018

## ECTS

3

## Mots clés

Linear acoustics, electroacoustics, acoustical radiation

## Description du contenu de l'enseignement

### Objectives

This course gives an introduction to some theories of linear acoustics.

### Contents

- Acoustical quantities
- Linearized equations of acoustics
- Lumped elements models: introduction to reciprocity, sensors and actuators, electroacoustics
- Elementary theory of wave-guides and cavities, introduction to room acoustics
- Acoustical radiation: from elementary to simple and complex sources
- Representations of the acoustical field

## Compétences à acquérir

Knowing the main features of the proposed models, understanding the approximations underlying them and analysing whether specific situations correspond to these models and approximations.

Applying elementary theories of acoustics in realistic situations, yet of moderate complexity.

Understanding basic articles in acoustics.

Identifying articles that may help to solve given acoustical problems or questions.

## Modalités d'organisation et de suivi

Coordinateur: Xavier Boutillon (LMS, École polytechnique).

## Langue

Anglais

## Volume horaire

CM : 20h, TD : 10h, homeWork : 30h

## **Pré-requis obligatoires**

Courses on Waves and vibration

## **Mode de contrôle des connaissances**

Written exam on an article in acoustics.