

# Mathematics for acoustics 1

## Course information

ECTS: 3	Common with the master in Acoustics	Course code :
Lecture: 15h	Tutorial classes: 15h	Practical work: none

Course coordinator : Olivier Dazel

## Course Description

### Aim

The aim of this course is to present mathematical notions for the resolution of acoustical problems and signal processing. It is divided in lectures and exercises.

### Prerequisite

[Mathematics refresh](#)

### Contents

- \* Projection techniques on orthogonal bases.
- \* Advanced matrix operations (Projections, LU, QR, Householder, Decomposition in Singular Values).
- \* Practical applications of the Hilbertian theory
- \* Approximation by least mean square polynomial or with exponential.
- \* Solving a given physical problem through adapted development (orthogonal polynomials).

### Examination duration

2 hours

### Examination type

Written examination