Fluid Mechanics 1

ECTS
5 credits

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

Code: N5EM03

Presentation

Objectives

At the end of this teaching unit, first-year engineering students will be able to:

- to describe a set of applications of fluid mechanics
- to produce a dimensional analysis from a physical model
- to explain the physical meaning of the different terms of the fluid mechanics equations
- to use the tools of algebra to manipulate the equations of fluid mechanics
- to generate analytical solutions of the Lamé and Navier-Stokes equations

Description

The topics covered in this teaching unit are:

- Dimensional analysis.
- Mass, momentum or energy budgets
- Understanding of the terms of the constitutive equations for elastic and fluids mechanics.
- Analytical solutions of the Navier-Stokes
- Coupling between thermodynamics and compressible fluids.

The assessment is composed as follows:

- Three written exams (1:45 each): 75%
- Three Practical Work (4h each): 25%

The 1h45 pedagogical sequences are distributed as follows:

- 15 Magistrates Courses
- 13 Tutorials
- 1 Pratical case study
- 2 Inverted classes

List of courses

	Nature	CM	TD	TP	Crédits
Introduction à la Mécanique des Fluides	Matière				
Mécanique des milieux continus	Matière				
Pratique Expérimentale en Mécanique des Fluides	Matière				

Useful info