

# Compressible



Component  
École Nationale  
Supérieure  
d'Électrotechnique  
d'Électronique

## In brief

➤ **Code:** N7AM01B

## Presentation

### Objectives

At the end of this course students will be able to:

- To explain the concept of compressibility qualitatively and quantitatively.
- Know the equations involved in a classical problem of compressible fluid mechanics.
- Know how to identify the different fields of application of compressible fluid mechanics.
- Understand the physical mechanisms causing a shock wave.
- Understand the physical mechanisms at the origin of a relaxation wave.
- Know how to write conservation equations through a one-dimensional shock wave.
- Know how to exploit the one-dimensional shock tables.
- Being able to apply the methodology for dealing with a problem involving oblique shock waves (use of tables).
- Being able to apply the methodology to deal with a problem involving relaxation waves (use of tables).
- To know how to find Hugoniot's relation in the case of quasi-one-dimensional flows.
- To know the reasoning allowing to find the different modes of operation of a nozzle of Laval.

### Description

This teaching will be broken down into 10 sessions of tutorial-courses.