

## Introduction à la mécanique des structures



Component École Nationale Supérieure d'Électrotechnique d'Électronique

#### In brief

> Code: N7EM03B

# Presentation

### Objectives

Introduce the basic concepts for dealing with a structural mechanics problem. At the end of this course, students will be able to deal with the static and dynamic problems of a structure subjected to loading as well as the problems of buckling of a structure.

### Description

- -Geometry of the beams and introduction of the torsor.
- -Normal effort.
- -Moment of flexion.
- Shearing effort.
- -Energy methods (Castigiano's theorem, Menabréa's theorem, fictitious load method, Maxwell-Betti's theorem).
- -Modeling of the buckling of a structure.
- -Dynamic structures (Rayleigh method, Ritz method, introduction to finite element method).

This teaching will be broken down into 8 courses and 10 tutorials.

