

# Introduction à la mécanique des structures



Component  
École Nationale  
Supérieure  
d'Électrotechnique  
d'Électronique

In brief

> **Code:** N7EM03B

## Presentation

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### 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.

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### 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.