



COMPORTEMENT ANÉLASTIQUE DES STRUCTURES

INELASTIC BEHAVIOUR OF STRUCTURES

Lecturers: Cécile NOUGUIER, Francesco FROILIO

| Lecturers : 12.0 | TC : 6.0 | PW : 0.0 | Autonomy : 20.0 | Study : 0.0 | Project : 10.0 | Language : FR

Objectives

To provide a more comprehensive knowledge of the behaviour of elastic and inelastic structures.

Keywords : Anisotropy, elastoplasticity, thermoelasticity, viscoelasticity

Programme

- Course 1 and 2 : Elements of anisotropy and elastoplasticity.
- Course 3 and 4 : Displacement method and its application to the thermoelastic analysis of structures.
- Course 5 and 6 : Structural plasticity.

Learning outcomes

- Positioning of linear elasticity in a wider theoretical framework.
- To perform basic viscothermoelastic/elastoplastic analysis of structures.
- To develop a project-based approach to the resolution of mechanical problems.
- To deploy either numerical or analytical resolution methods.

Independent study

Objectifs : Analytical and/or numerical analysis of inelastic structures.

Méthodes : 3 groups of 8 students each will work on as many different projects. The total allocated time for each project is 30 hours (1/3 supervised).

Core texts

J. Lemaitre, J-L. Chaboche, *MÉCANIQUE DES MATÉRIAUX SOLIDES*, Dunod, 2001
Albiges, Coin, Journet *ETUDE DES STRUCTURES PAR LES MÉTHODES MATRICIELLES*, Eyrolles, 1969
S. Timoshenko *RÉSISTANCE DES MATÉRIAUX*, Dunod, 1968

Assessment

Mark = 60% knowledge + 40% know-how.
Knowledge mark = 100% final exam.
Know-how mark = 100% student project.