Mechanics

ECTS
3 crédits

Hourly volume
40h

Introducing

Objectives

The student will be expected to understand and be able to explain (main concepts) the mechanics of deformable solids, the notions of stress, linearized strain, displacement fields and elasticity behaviour.

The student should be able to
- This course is intended to provide students with the opportunity to: - analyse the state of stress and strain of a solid under load.
- Calculate the stress state knowing the strain state and vice versa.
- Calculate the state of strain knowing the displacement field.
- Establish the equations for writing the local equilibrium of the solid at any point.
- Translate the boundary conditions of a model into equations.
- Propose a relevant model of a real problem, especially in terms of the boundary conditions.
- Calculate the state of stress, strain and displacement of some simple elasticity problems.
- Switch from stress fields to internal stress fields in the framework of beam theory.

Necessary prerequisites

Basic mathematical tools, statics of rigid solids, equilibrium, resultants in force and moment.

Practical info

Location(s)

Toulouse