

Steel & timber structures

 **ECTS**
4 credits **Component**
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE **Number of
hours**
86h

Presentation

Description

Programme (detailed contents):

- * Review of industrial branches timber and steel.
- * Properties of used materials (timber, wood products, steel).
- * Influence of environmental conditions on timber and wood products properties.
- * Classification and geometrical features of cross-sections.
- * Construction systems and frames (horizontal and vertical bearing members).
- * Structural behavior and effect of connections between members.
- * Actions and action combinations, principles of verification.
- * Consideration of structural imperfections.
- * Verification of resistance ultimate limit states of cross-sections.
- * Verification of stability ultimate limit states of members and shells.
- * Verification of serviceability limit states.
- * Principles and calculation of bracing systems and members.
- * Technology and calculation of main types of connection.
- * Verification of fire resistance.

Organisation:

Lectures, aided works, demonstrative lab works

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

The principles of design and calculation of steel structures and timber structures according to Eurocodes.

The student will be able to:

Analyse the structural behaviour of a timber or steel structure, justify the technological structural choices and materials, design the structural bearing and bracing members.

Pre-requisites

Analyse des structures statiques et dynamiques

Structures Béton Bois

Mécanique Avancée

Useful info

Place

➤ Toulouse