

# Composite structures and case study



ECTS  
3 crédits



Hourly volume  
46h

## Introducing

behaviors.

Matrix Calculation

## Objectives

The student will be able to perform simple sizing of composite structures and to choose a couple manufacturing/material for a given case study.

The student will be able to:

- Choice a couple of fibers and matrix and their commercial products.
- Choice a type of composite architecture: laminates, sandwiches, 2D1/2, 3D, 4D.
- Determine the manufacturing method: hand layup, fiber placement, RTM, LRI, RFI.
- To be inspired by solutions of automotive, naval, wind energy or aerospace industry.
- To be inspired by past experience in aeronautic industry.
- Know and use laminate theory.
- Knows and use simple sizing of junctions.
- Know issues of impact and ageing.
- Know issues of failure and damage.
- Realize a case study: example wing box of an acrobatic aircraft
- Make a presentation of their sizing and their design.
- Work in a collaborative manner.

## Practical info

### Location(s)

Toulouse

## Necessary prerequisites

Beam theory, continuum mechanics, materials