



## PROJET AVION

### AERONAUTICS PROJECT

Lecturers: Damien CONSTANT, Jérôme BOUDET, Olivier DESSOMBZ, Olivier

| Lecturers : 2 | TC : 34 | PW : 0.0 | Autonomy : 0.0 | Study : 0.0 | Project : 0.0 | Language : MI

#### Objectives

---

This project concerns the preliminary design of a business jet, with given specifications (number of passengers, range, runway length...). The interactions of the global design choices are investigated with simplified models, using an iterative approach. This project is supported by Dassault Aviation.

**Keywords :** business jet, preliminary design

---

#### Programme

This project consists of two phases:

Phase 1: analyse and complete a pre-design tool, then use it to design an aircraft with given specifications.

Phase 2: deepening. For example: realization of a wing model and evaluation in wind tunnel, improvement of pre-design models, study of sensitivities...

#### Learning outcomes

- Identify the influence of the aircraft design parameters on the performance.
- Elaborate and implement a multi-disciplinary design process.
- Propose and assess models for preliminary design.

#### Independent study

**Objectifs :** Progress in the pre-design of the aircraft.

**Méthodes :** Each group of four students uses the documents provided, the software provided and the skills of the management team.

#### Core texts

D.P. Raymer., *AIRCRAFT DESIGN: A CONCEPTUAL APPROACH*, AIAA, 2012

L. Jenkinson, J. Marchman. *AIRCRAFT DESIGN PROJECTS.*, Elsevier, 2003

J.D. Anderson. *AIRCRAFT PERFORMANCE AND DESIGN*, McGraw-Hill, 1999

#### Assessment

Evaluation of the intermediate and final deliverables, including spreadsheets and oral presentation.