MECA2825 Design methods in mechanical manufacturing.

[30h] 3 credits

This course is taught in the 1st semester

Teacher(s): Benoît Raucent
Language: French
Level: Second cycle

Aims

Introduction to design methods in mechanical construction and particularly to systematic design methods seeking to combine, from the outset of the design, all the facets of product life: manufacturing, assembly, disassembly and recycling constraints.

Main themes

- Design Stages
- Interactive Design
- Design for Assembly
- Design for Cycle Life

Content and teaching methods

The first part of the course deals with learning systematic design methods in mechanical engineering. Special attention is paid to goal description (Definition of specification conditions), creativity (seeking solutions) and optimisation of solutions (problem parameterization). Concepts introduces will be abundantly illustrated during the project MECA2840.
The second part concentrates on interactive design (concurrent engineering) of a product and its means of production. The main concepts will be directly applied in Design For Assembly (DFM).
Students are invited to carry out a project of complete re-design of a product, with the view to facilitating its assembly.
Students will use a DFM software.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite:
MECA2821 : Machine Design
MECA2200 : Project
Grading criteria :
The evaluation will be based on the project carried out during the semester.

Other credits in programs

ELME23/M	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(3 credits)
MECA22	Deuxième année du programme conduisant au grade d'ingénieur civil mécanicien	(3 credits)
MECA23	Troisième année du programme conduisant au grade d'ingénieur civil mécanicien	(3 credits)