Design and manufacture 1	Semester: S5

EU objectives

At the end of this course, students will be able to :

- Analyse an overall drawing to model a mechanical system.
- Use a volume modeller to solve a simple design problem.
- Discuss a method of obtaining a technical object.
- Pre-select a manufacturing process.

Description of the ECUEs

MECHANICAL MANUFACTURING PROCESSES 1
- Simplified' reading of specifications on a definition drawing.
- Processes for obtaining a part by cold and hot plastic deformation (bending, stamping, forging).
- Cutting processes (cutting, shearing.....).
- Assembly processes (welding).
- Moulding processes, study of tools (sand moulding, shell moulding).
- Processes for obtaining finished surfaces by material removal (machining, grinding).

Practical work, implementation of a mechanical part, dimensional control (identification of defects, comparison between processes....).

DESIGN OF MECHANISMS 1
- Identify a part in all the views of a general drawing.
- Interpret a fit.
- Calculate and justify the degree of hyperstatism of a system.
- Identify the constructive solutions for an embedded connection.
- Design a removable flush-mounted connection.
- Produce a kinematic diagram of a system from an overall drawing.
- Explain how a system works using a kinematic diagram.
- Use a volume modeler to represent a part.

Prerequisites
Reading industrial drawings.
Bibliography
Memotech mechanical engineering C.BARLIER, B.POULET Memotech génie des matériaux R.BOURGEOIS, H. CHAUVEL, J.KESSELER Fabrication par usinage JF CORDEBOIS Dunod Mechanism Design Handout