

Mechanical power transmission



Level
BAC +3



ECTS
9 credits



Component
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE



Number of
hours
133h

Presentation

Description

Part I - CAD

- best use of CAD software (organising the data; top-bottom modeling via skeletons)
- practice with 3DX

Part II - Gears

- planetary gears
- detailed geometry of involute gears
- gear sizing using ISO6336

Part III - Project work

Groups of 2 or 3 students

Using the following specifications:

- . use context, geometrical constraints
- . input and output data

- . expected service life

Each team has to produce:

- . a thorough sizing synthesis document (gears, bearings, shafts, clampings)
- . a drawing of the mechanism
- . a CAD model of the mechanism

Objectives

At the end of this module, the student will be able to analyse technical requirements related to the design of a gear reducer, create a design with the associated sizing calculations, present their solution by means of both a draft and a CAD model.

Pre-requisites

Fundamentals of mechanical design:

- basics of manufacturing (welding, machining)
- common clamping technology (key, splines, screws, etc.)
- pivot joints (rolling bearings joint design and sizing)
- basics of technical drawing
- calculating forces in a mechanical system (equilibrium laws)

- calculating stresses (torsion and bending of beams)

Useful info

Contacts

Education manager

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Place

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