

Metrology

Introducing

Description

CM 8,75h, TD 10h, TP 8h

Objectives

At the end of this course, the student should be able to:

- _ Adopt a methodology that enables the successful development of a product within a quality-driven approach,
- _ Understand the stakeholders involved and identify the documentation generated,
- _ Interpret the implementation of production and assembly methods, as well as the means and methods for product inspection and improvement.

Regarding inspection methods and techniques, the student should be able to:

- _ Have a basic understanding of cost/quality/time controls at all stages of the development and manufacturing cycle, with the objective of mastering the geometric quality of a product,
- _ Be familiar with the main technical tools used for dimensional and geometric inspection of mechanical parts,
- _ Be able to establish an inspection plan for a specification by zone or template, using a surface plate or a Coordinate Measuring Machine (CMM),
- _ Understand the main surface association criteria (Least Squares, Least Squares Tangent, Mini-Max),
- _ Be capable of characterizing a measuring device

(calibration, interpretation of measurement uncertainties, etc.),

- _ Have some knowledge of arithmetic and statistical functional tolerancing.

Necessary prerequisites

In the INSA courses :

Bureau d'études (cf. UE 3ICCM51 - Conception Mécanique)

Tolérancement (dimensionnel, géométrique), et Analyse de Fabrication (cf. UE 3ICCM51 - TAF du S5)

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

 Toulouse