

Industrialization and logistics



Level
BAC +4



ECTS
5 credits



Component
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE



Number of
hours
60h

Presentation

Description

Industrialization :

Through two types of industrialization : The automotive and aerospace ; we detail :

- The different types of production management organizations
- Industrial measures implemented
- Piloting of industrialization : PLM , ERP, PDM , MES, lean management
- Design and simulation of the system of industrialization
- Introduction to CAD and CAM Catia V5

Labwork of optimization of production and organization and production management

Visits to factories and conference on lean management

Organization : 5 hours of lectures, 10.25h of Tutorials , 8h of Labwork, 3h conference, examen: 1.25 MCT

Production management, planning, scheduling :

Production management and logistics

linear programming applied to planning

Graphs and scheduling application

Scheduling and combinatorial optimization

Production Planning

Labwork : Introduction to AMPL and Excel

Organization : 12.5 hours of lectures, 2.5h of Tutorials , 2.5h of Labwork, examen: 1.25h

Configuration Management :

1 – Airbus world (Aircraft families, industrial roles accross Europe, all different maturity steps of a program)

2 – Configuration management generalities (first look and presentation of modules that will be detailed afterwards)

3 – Product structure (What is product structure, how it is built and what are the main rules)

4 – The change process (all different steps of a change request during the full process, data and deliverables required pending on progress in the process)

5 – Offer management (what is offer management and what are the associated deliverables)

6 – Attestation and control of conformity (Delta managements)

Organization: 6 x 2h30 of course + 2 x 2h30 of labwork + 2h of exam

- Define a hierarchical & appropriated breakdown of a complex product

- Apply the change process and identify required data to allow decision

- Identify mechanisms that enable management of product offer and its customisation

- Demonstrate that final product manufactured is conform to expectations

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts) :

The organization , management and control of a system of industrialization

The challenges of production management (PM) and supply chain (SCM) as well as issues of scheduling

What is configuration management, what are the enablers and what is the purpose

The student will be able to :

- Define the industrial means used and the type of production management organization associated with the system of industrialization

- Define the tools to control it : PLM , ERP, PDM , MES, the lean management

- Use tools for design and simulation of industrialization : CAD and CAM CATIA

- Use of models, methods and tools GP , SCM, and scheduling

- Roughly describe airbus world (A/Cs family, industrial sharing across the Europe)

Pre-requisites

Reading of plans, current metallic materials, various types of machining.

Basic elements on : probabilities – Linear programming.

Useful info

Contacts

Education manager

Anna Carla Araujo

✉ araujo@insa-toulouse.fr

Place

➤ Toulouse