

Industrial Management Field		Industrialization	Total of teaching hours : 92 hrs		
			Course	Supervised work	Lab work
GI I3.6	3 ECTS credits		12 hrs	24 hrs	
		4 hrs evaluation - 24 hrs individual work 36 hrs + 16 hrs workshop project			

Objectives

- Discover manufacturing and assembly constraints
- Learn and recognize processes for obtaining parts
- Learn and recognize recommendations for use in the context of a production

(taxonomic level : application and analysis)

Prerequisites and links to other modules

Module GI I3.5 (project management, analysis of the value, mastering the rules of good practice of the CAO)

Chapter 1

Method tools

Objective

- Understanding the methodology for the implementation of an economically viable production (from design to finished product)
- Learning how to organize putting into production

Contents

- The processes for obtaining parts : machining by removing chips, electro-erosion, foundry (sand moulding, shell, under-pressure), stamping, mechanic-welding, cutting (laser, water jet, oxy cutting), injection and extrusion
- Situation, means and production constraints
- The method tools associated with the processes

1. Ranges

Presentation of the approach and documents (summary of manufacture, ranges, etc.)
Practical application to an example

2. Industrialisation

Presentation of the industrialization approach
Practical application to an example

3. Assessment and economic study

Presentation of the calculation the treatment of a case approach (calculation of cost and economic profitability)
Practical application to an example

4. Control - Methodology

Presentation of the GPS standard and means of metrology
Practical application to an example

5. Workstation

Presentation of the principles of ergonomics and the methods for calculating time
Practical application to an example

6. Manufacturing Technique

Presentation of a production line, organizing stations, flow concepts, paces and productivity .
Putting in place, completing operations according to processes

Chapter 2

Product design project (industrialisation phase)

Objective

- Acquire, by practice, the approach of the industrialising a product (product with a technical, machine or machine elements nature)
- Apply, by developing technical functions, the knowledge and skills acquired in the fields concerned

Contents

- Resumption of the design made in 1 3.5
- Product definition and schedule
- Technical design of the function, by integrating the manufacturing means
- Taken into account the environment, ergonomics, safety
- Set and sub assembly plans with their classifications
- Plans with side details and tolerances with the chains of dimensions
- Electrical file including grafcet, timing chart and principle diagram

Educational approaches and assessment methods

Work in a team project, tutoring, people resources, material resources, organization of time.
The evaluation grids (labour, oral presentation, folder) are communicated at the start of the project.
Tutors ensure the consistency of assessments between projects.

Bibliography

Pratique de l'analyse fonctionnelle. R. Tassinari et H. Martre. Paris : Dunod, 2006
Conduire efficacement sa pensée, de l'idée au projet. P. Samson. Paris : Les Editions d'Organisation