16237 - TEFA-U3P12 - Manufacturing Technology

**Coordinating unit:** 340 - EPSEVG - Escola Politècnica Superior d'Enginyeria de Vilanova i la Geltrú

**Teaching unit:** 712 - EM - Department of Mechanical Engineering

**Academic year:** 2012

**Degree:** (ENG) ENGINYERIA EN AUTOMATICA I ELECTRONICA INDUSTRIAL (Syllabus 2003). (Teaching unit Optative)

**Credits:** 6  
**Teaching languages:** Catalan, Spanish, English

### Teaching staff

**Coordinator:** MAURICI SIVATTE ADROER

**Others:** MAURICI SIVATTE ADROER

### Teaching methodology

- Classes of theory and problems
- Practical of laboratory

### Learning objectives of the subject

This course presents one hand, an initial vision of manufacturing technologies being used, from a mechanical point of view (casting, forging, rolling, cutting, machining, welding ...); and on the other hand, and other aspects technologies involved in manufacturing processes and in the process of current production, as the numerical control of machinery, metrology, quality control, or planning of the production system, among others. It is a vision fulfilled fleeing technology classical mechanics to adapt to the learning needs of today. It is important to the engineer in auto manufacturing is why virtually the field of application of greater automation today.
### Introduction to the manufacture processes

**Description:**
Objectives
To introduce to the student in the concepts of process, process of manufacture, process of production, as well as to acquire a generalized vision of the different technologies from manufacture and the importance of the materials in the manufacture.

### Processes of smelting

**Description:**
Objectives
To know the processes molding and the parameters more excellent that take part

### Conformation for plastic deformation

**Description:**
Objectives
To know the different types in the heat of the moment from processes of deformation, deformation in cold and cuts, its characteristics and the cases in that they are applicable each of them.

### Weld

**Description:**
Objectives
To know the processes welding and the parameters more excellent that take part.

### Metrology

**Description:**
Objectives
Knowing the most relevant aspects of metrology and metrotecnia; become aware of the importance metrology and testing in the manufacturing process and quality control at all stages of the production process, to assess their need and difficulty, and know different solutions in the industry and the tools available.

### Processes of material starting

**Description:**
Objectives
The student must know the different processes from mechanized, the basic machinery, the used tools, and the field of application.
**Numerical control**

**Description:**

**Objectives**

The student must know the concept numerical control, his advantages, the machinery, and basic concepts of programming.

---

**Engineering of processes**

**Description:**

**Objectives**

- To understand the operation of the industrial processes, the main parameters define that them, its application and its management.
- To take brings back to consciousness of the process of introduction of the new technologies in the different phases from the process.
- To acquire the concept of process engineering, and to know the main systems manufacture and production.

---

**Qualification system**

The system of continued evaluation used consists of four evaluative acts:

- 1r evaluative act (weight 0.3): First Partial Examination (to 1rExPar). First Blocks
- 2n evaluative act (weight 0.4): Final examination. (Ex.Fin.) Rest of Blocks
- 3r evaluative act (weight 0.3): PrÀ ct. 8 Practices the final qualification (QF) without clearing will be:

\[
QF = (0.3 \times 1rEx.Par + 0.4 \times Ex.Fin + 0.3 \times PrÀ \text{ ct.})
\]

---

**Bibliography**

**Basic:**


**Complementary:**

1996.


Vivancos Calvet, Joan. Control Numèric I. Conceptes, característiques i elements bàsics.. Edicions UPC, 1996.

Vivancos Calvet, Joan. Control Numèric II. Programació.. Edicions UPC, 1996.