

## 60834 - Advanced production techniques during the product life cycle

### Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	532 - Master's in Industrial Engineering
ECTS	6.0
Course	2
Period	Second semester
Subject Type	Optional
Module	---

### 1.Basic info

#### 1.1.Recommendations to take this course

#### 1.2.Activities and key dates for the course

### 2.Initiation

#### 2.1.Learning outcomes that define the subject

#### 2.2.Introduction

### 3.Context and competences

#### 3.1.Goals

#### 3.2.Context and meaning of the subject in the degree

#### 3.3.Competences

#### 3.4.Importance of learning outcomes

### 4.Evaluation

### 5.Activities and resources

#### 5.1.General methodological presentation

##### **The learning process that is designed for this subject is based on the following:**

Learning is based on the understanding of the application of advanced production techniques during the product life-cycle management. the case method in each of them and the student must focus work / project subject in one area will be used.

To do this, the various concepts related to the subject in lectures, later, in the kinds of problems / practices, develop industrial case studies and introduce the different types of tools involved are introduced. Subsequently, the classes will be used for the drafting of course, with extensive tutorial assistance of specialist teachers in the area chosen by the student. Possibility of carrying out any other activities that the teacher deems appropriate (such as tour companies, participation of external guests ...) to achieve the learning objectives set.

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### 5.2.Learning activities

The program that the student is offered to help you achieve the expected results includes the following activities

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Lectures (about 17 hours with the entire group of students). In these classes most of the contents of the subject will be developed. Its aim is to present the knowledge and skills acquired by the student aims and facilitate their assimilation, so that their monitoring is essential for the consolidation and development of programmed learning good.

Kinds of problems and technical cases (approximately 15 hours with the entire group of students). They will go to the exercises and technical cases aimed at enhancing the acquisition and assimilation of acquired in the theoretical knowledge and learning management of various tools and techniques necessary for the development of projects.

Practical classes workshop / laboratory computer (18 hours divided into 6 practices 3 hours with small groups of students). Complement those concepts of the subject for whose better understanding is necessary to use specific equipment or make complicated for what the computer is a valuable tool calculation.

Mentoring and personal coaching course project (approximately 10 hours).

Study and work personae (Approximately 85 hours of non-contact work).

Final testing / evaluation exam (about 2 hours).

### 5.3.Program

#### Learning activities scheduled

Theoretical and practical agenda

- 1) Supply Chain Management: application to product life-cycle management.
- 2) Planning of computer-assisted production.
- 3) Lean Manufacturing.
- 4) Product Identification Systems.
- 5) Costs associated with product.
- 6) Programming operations.
- 7) Internal logistics Product.
- 8) External Logistics Product.
- 9) Integration of ERP systems.

### 5.4.Planning and scheduling

#### Schedule sessions and presentation of works

The proposed methodology seeks to promote the continued work of the student and focuses on the practical aspects of management of the product life-cycle management (PLM).

In sessions with the whole group the more theoretical aspects are addressed in the form of master class and completed with the development of problems and technical case study.

The practical sessions take place in smaller groups to work with specialized applications. It aims to promote hands-on learning, so that attendance at practice sessions is advised. At the end of each practice session the immediate realization of a small control or script is required. In some cases the practice session enables data collection for a more elaborate work that enables better assimilation of knowledge related to the subject. The personalized tutorials will be used for evaluation, correction and clarification of aspects of the proposed subject by each student, in order to analyze the possible shortcomings and answer questions to improve personal work.

Such controls and work are required in case of opting for the gradual evaluation.

#### Planning and scheduling

6 ECTS: 150 hours / student distributed as follows:

The distribution of teaching (60 hours) is as follows:

- a) Imparting by master class theory and development of technical and troubleshooting cases: 32 hours given to the whole group, at 2 hours / week.
- b) Practical sessions in metrology laboratories and machine shops: 18 hours spread over 6 sessions of 3 hours.
- c) customized individual meetings to monitor projects subject Tutorials: 10 hours spread over 5 sessions of 2 hours.

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### technical cases

Technical cases consist of conducting a study of the entire life cycle of a product, taking into account the different phases. product design, place the programs needed for their manufacture are obtained, calculations for the production thereof will be made, the techniques include lean necessary for their manufacture and their specifications and regulations applicable to that product shall be defined.

The various technical cases considered making different products from different sectors.

### **5.5.Bibliography and recommended resources**