

60834 - Advanced production techniques during the product life cycle

Syllabus Information

Academic Year: 2019/20

Subject: 60834 - Advanced production techniques during the product life cycle

Faculty / School: 110 -

Degree: 532 - Master's in Industrial Engineering

ECTS: 6.0

Year: 2

Semester: Second semester

Subject Type: Optional

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It is based on the case method and continuous work, and it focuses on the application of advanced production techniques during the product life-cycle management (PLM).

A wide range of teaching and learning tasks are implemented, such as lectures, problems and tasks, industrial case studies, tutorials, and other complementary activities (such as tour companies, participation of external guests, etc.)

4.2.Learning tasks

The course (6 ECTS: 150 hours) includes the following learning tasks:

- **Lectures** (17 hours). Whole group sessions of 2 weekly hours each. In these classes most of the contents of the course will be explained. Its aim is to present the knowledge and skills acquired by the student to facilitate their assimilation, so that their monitoring is essential for the consolidation and development of programmed learning good.
- **Practice sessions** (15 hours). Whole group sessions integrated with the lectures, where students solve exercises and technical cases aimed at enhancing the acquisition and assimilation of the lectures' contents and the use of tools and techniques necessary for the projects.

- **Computer lab sessions** (18 hours) 6 sessions of 3 hours each with small groups of students to complement those concepts that for a better understanding, need a specific equipment or a computer for complex calculation. At the end of each session, students complete a small test or task. In some cases the session enables data collection for a more elaborate work that allows better assimilation of knowledge. Sessions take place in metrology laboratories and machine shops. Attendance is highly recommended.
- **Project/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, where the needed programs for their manufacture are obtained, calculations for the production, etc. Students will define the lean techniques, manufacture process, specifications and regulations applicable to that product. There will be several cases from different sectors.
- **Tutorials** (10 hours). Individual meetings to monitor the project (evaluation, correction, clarification) spread over 5 sessions of 2 hours.
- **Autonomous work and study** (85 hours).
- **Assessment** (2 hours). A final exam (2 hours). The small tests and tasks are required for the continuous assessment system.

4.3.Syllabus

The course will address the following topics:

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 logistic Product.
8. External logistic Product.
9. Integration of ERP systems.

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA website.

4.5.Bibliography and recommended resources