

## 30827 - Industrial Design and Environmental Management

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 30827 - Industrial Design and Environmental Management

**Faculty / School:** 105 - Facultad de Veterinaria

**Degree:** 568 - Degree in Food Science and Technology

**ECTS:** 6.0

**Year:** 3

**Semester:** Second semester

**Subject Type:** Compulsory

**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. A wide range of teaching and learning tasks are implemented, such as theory sessions, laboratory sessions, assignments, and tutorials.

In sessions with the whole group the more theoretical aspects are addressed in the form of master class and are completed with immediate applications: trouble-type. It is intended to provide students with sufficient advance the documentation for each subject, in order that the student knows the contents on the subject to be treated, which favor a more participatory class.

The practice sessions are done in 2 hours. Each group is scheduled to perform practices Monday through Friday. As in the theoretical teaching, students have in advance the script of practices. These jobs are sometimes collectively made in groups of 3 or 4 students and in other cases, individually.

Both classroom sessions and lab will equip the student knowledge and skills to perform different case studies. These cases have been raised so that each group of students will apply throughout the course different techniques working on a company that will be given at the beginning of the course. This company will keep throughout all sessions. On it different situations for the application of knowledge indicated in the established modules that reflect real situations, in which the student must apply the appropriate technique and take appropriate decisions to the situation in question will arise.

The evaluation is focused on the more practical aspects. It aims to promote both teamwork and individual effort and has made planning for the hours of dedication are balanced each week.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

Further information regarding the course will be provided on the first day of class.

Students must follow the regulations described in:

- Prevention: A guide for students at the University of Zaragoza:  
[http://uprl.unizar.es/publicaciones/estudiantes\\_ingles.pdf](http://uprl.unizar.es/publicaciones/estudiantes_ingles.pdf)
- Manual de seguridad en los laboratorios de la Universidad de Zaragoza y normas marcadas por la Unidad de Prevención de Riesgos Laborales:  
<http://uprl.unizar.es/seguridad/pdfs/seglaborUZ.pdf>  
<http://uprl.unizar.es/seguridad/pdfs/laboratorios.pdf>

In addition, students will follow as well any instructions related to biosecurity given by the professor

## 4.2.Learning tasks

The course includes 6 ECTS (150 hours) organized according to:

- Lectures (1.2 ECTS): 30 hours. Lecture notes and a series of problems (and its solutions) will be available for the students. At the end of each topic, some of the problems will be solved in class by the professor and the rest will be done individually.
- Guided assignments (0.24 ECTS): 6 hours.
- Formative seminar (0.08 ECTS): 2 hours.
- Laboratory sessions (0.88 ECTS): 22 hours. these 2-hour sessions take place approximately each week. Students are provided with the practical exercises' instructions to be done as well as a theoretical introduction to the session's contents.
- Assignments (1.56 ECTS): 39 hours. Elaboration by the students of a set of reports, associated to the sessions of problems and practices, in which they will solve the cases raised based on the learned tools.
- Autonomous work (1.92 ECTS): 48 hours. students do tasks such as autonomous study, reading of the course book, preparation of practice sessions and seminars, and summative assignments.
- Assessment (0.12+1.92+1.56 ECTS): 3 hours. Final examination.

## 4.3.Syllabus

The course will address the following topics:

- Section 1: The production plant
  - Topic 1. Concepts and elements of production plant
  - Topic 2. General design and sizing of production plant: layout
- Section 2: Production planning and maintenance
  - Topic 3. Production Planning
  - Topic 4. Production Scheduling
  - Topic 5. Industrial Maintenance
  - Topic 6. Warehouse Management
  - Topic 7. Merchandise Transport
- Section 3: Control and automation
  - Topic 8. Control and automation of production
  - Topic 9. Systems capture and transmission of information
- Section 4: Environmental Management
  - Topic 10. Concepts of environmental management
- Section 5: Water pollution
  - Topic 11. Water quality and pollution
  - Topic 12. Water treatment
- Section 6: Waste Management
  - Topic 13. Concepts of waste management
  - Topic 14. Waste treatment

## 4.4.Course planning and calendar

For further details concerning the timetable, classroom and further information regarding this course please refer to the "Facultad de Veterinaria " website (<http://veterinaria.unizar.es/gradocta/>).

## 4.5.Bibliography and recommended resources