# 60652 - Food Processing Procedures

**Información del Plan Docente**

| | |
|---|---|
| **Academic Year** | 2017/18 |
| **Faculty / School** | 100 - Facultad de Ciencias |
| **Degree** | 540 - Master's in Industrial Chemistry |
| **ECTS** | 3.0 |
| **Year** | 1 |
| **Semester** | Second semester |
| **Subject Type** | Optional |
| **Module** | --- |

## 1.General information

## 1.1.Introduction

## 1.2.Recommendations to take this course

## 1.3.Context and importance of this course in the degree

## 1.4.Activities and key dates

## 2.Learning goals

## 2.1.Learning goals

## 2.2.Importance of learning goals

## 3.Aims of the course and competences

## 3.1.Aims of the course

## 3.2.Competences

## 4.Assessment (1st and 2nd call)

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

## 5.Methodology, learning tasks, syllabus and resources

## 5.1.Methodological overview

The learning method used in this course is based on the cooperative work of the teacher and the student. The method will follow the traditional approach based on lectures but supported by the active participation of the students. Therefore, participation and discussion during the lectures will be promoted. The learning process will be developed in several levels:

- Lectures (2 ECTS).
- Problem solving, case studies and visits to food processing companies (1 ECTS). These three activities are useful

to support the theoretical contents because these enable the learning and also help students to develop a more applied knowledge of the matter.

## 5.2.Learning tasks

The course (75 hours) includes the following learning tasks:

- Lectures (20 h).
- Problem and case discussion (10h)
- Autonomous work, study, and guided activities (37h).
- Special practice session: Visit to a food processing company (5h).
- Ongoing assessment (3h).

## 5.3.Syllabus

The course will address the following topics:

Topic 1. Food Processing Industry. Unit operations. Environmental issues and best available techniques.

Topic 2. Oil and fat processing: Classification of oils according to the normative; commercial types of olive oils; olive oil extraction operations, overview of vegetable oils; refining process for vegetable oils; byproducts in olive oil processing.

Topic 3. Fruit and Vegetables; Fruit juice processing technology; Canning operations on fruits and vegetables; Fruits and vegetable drying/dehydration; Processing of jam and jellies preparation methods of nectar, concentrate and syrup.

Topic 4. Alcoholic beverages processing: Beer; Types of beer; Technology of brewing process; Raw materials for the beer manufacture, Side products in beer processing industry.

Topic 5. Sugar Industry and Sugar Manufacturing Process. Sugar classification; Unit operations relevant to the sugar manufacturing process.

Topic 6. Milk and Dairy Ingredients for Food Processing. Thermal processing; pasteurization; aseptic packaging, cream, cheese, yogurt, ice-creams, butter, milk powder.

Topic 7. Advanced Processes in the Food industry.

## 5.4.Course planning and calendar

Further information concerning the timetable, classroom, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Master's website and the Faculty of Science website http://ciencias.unizar.es/.

Activities calendar and teaching materials will be posted on the virtual platform Moodle (https://moodle.unizar.es/)

## 5.5.Bibliography and recommended resources

- Madrid Vicente, Antonio. Nuevo manual de industrias alimentarias / autores, Antonio Madrid Vicente, Javier Madrid Cenzano . - [3ª] ed. amp. y corr. Madrid : A. Madrid Vicente : Mundi-Prensa, 2001
- Prevención y control integrados de la contaminación (IPPC) : documento de referencia de mejores técnicas disponibles en la industria de fabricación de vidrio : documento BREF [Madrid] : Ministerio de Medio Ambiente,

# 60652 - Food Processing Procedures

Centro de Publicaciones, 2004
- Prevención y control integrados de la contaminación (IPPC) : documento de referencia de mejores técnicas disponibles en la industria de procesos de metales férreos : documento BREF / traducción al español realizada por el Ministerio de Medio Ambiente [Madrid] : Centro de Publicaciones, Ministerio de Medio Ambiente, 2006
- Prevención y control integrados de la contaminación (IPPC) : documento de referencia de mejores técnicas disponibles en la industria de la pasta y el papel : documento BREF [Madrid] : Ministerio de Medio Ambiente, Centro de Publicaciones, 2006
- Prevención y control integrados de la contaminación (IPPC) : documento de referencia de mejores técnicas disponibles en la industria de procesos de metales férreos : documento BREF [Madrid] : Ministerio de Medio Ambiente, Centro de Publicaciones, 2006
- Wang, L.K.. Tratamiento de residuos de la industria del procesado de alimentos. Acribia. 2008
- Fellows, Peter.. Tecnología del procesado de los alimentos : principios y prácticas / Peter Fellows ; traducción de Jesús Ceamanos Lavilla . - 2ª ed. Zaragoza : Acribia, D.L. 2007
- Ministerio del Medio Ambiente. Prevención de la Contaminación en la Producción de Aceite de Oliva. Ministerio del Medio Ambiente. 2000.