

Academic Year/course: 2022/23

60652 - Food Processing Procedures

Syllabus Information

Academic Year: 2022/23

Subject: 60652 - Food Processing Procedures

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

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. 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.

4.2. 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).

4.3. 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, 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.

4.4. 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/>)

4.5. 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). Documentos de Referencia de Mejores Técnicas Disponibles. Documentos BREF. Ed. Ministerio del Medio Ambiente y Comisión Europea. (<http://www.prtr-es.es>)
- 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.