**Course guide**

**390227 - GAIA - Environmental Management of Food Industries**

**Unit in charge:** Barcelona School of Agri-Food and Biosystems Engineering  
**Teaching unit:** 745 - DEAB - Department of Agri-Food Engineering and Biotechnology.

**Degree:** BACHELOR’S DEGREE IN FOOD ENGINEERING (Syllabus 2009). (Compulsory subject).

**Academic year:** 2022  
**ECTS Credits:** 6.0  
**Languages:** Catalan

**LECTURER**

Coordinating lecturer: Balanyà Martí, Teresa

**DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES**

Specific:  

**TEACHING METHODOLOGY**

**LEARNING OBJECTIVES OF THE SUBJECT**

On successfully completing the schedule of this course the student will learn:
- all about existing problems in the food industry because of generation of wastewater and waste and its management  
- the technologies of treatment more important  
- options of pollution valorization and minimization  
- the environmental management tools applicable to the food industry to improve its environmental behaviour.

This knowledge should enable students to:
- propose measures organizational, operational and technology to minimize the amount and/or hazard of the waste generated in food industries.  
- make sustainable decisions from the environmental point of view.

**STUDY LOAD**

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>40,0</td>
<td>26.67</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>20,0</td>
<td>13.33</td>
</tr>
</tbody>
</table>

**Total learning time:** 150 h
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## INTRODUCTION

**Description:**
Environmental problems of the food industry in the areas of waste and wastewater.

**Full-or-part-time:** 2h 30m  
Theory classes: 1h  
Self study: 1h 30m

## WASTEWATER TREATMENT OF FOOD INDUSTRIES

**Description:**
Wastewater treatment of food industries: physical, chemical and biological processes.  
Intensive and extensive wastewater treatment systems.  
Treatment and management of sewage sludge of food industries.  
Sanitation normative aspects and water taxes.

**Full-or-part-time:** 80h  
Theory classes: 20h  
Laboratory classes: 12h  
Self study: 48h

## INDUSTRIAL WASTE MANAGEMENT

**Description:**
Characterization of the most significant residues of the food industry and associated problems.  
Valorization of organic waste from the food industry.  
Industrial waste management.

**Full-or-part-time:** 22h 30m  
Theory classes: 5h  
Laboratory classes: 4h  
Self study: 13h 30m

## POLLUTION MINIMIZATION

**Description:**
Cleaner production.  
Pollution prevention in food industries by sectors.

**Full-or-part-time:** 18h  
Theory classes: 4h  
Laboratory classes: 2h  
Self study: 12h
ENVIRONMENTAL MANAGEMENT TOOLS

Description:
Environmental management tools.
The 20/2009 law of prevention and environmental control of activities.

Full-or-part-time: 25h
Theory classes: 8h
Laboratory classes: 2h
Self study: 15h

GRADING SYSTEM

BIBLIOGRAPHY

Basic: