390227 - GAIA - Environmental Management of Food Industries

Coordinating unit: 390 - ESAB - Barcelona School of Agricultural Engineering
Teaching unit: 745 - EAB - Department of Agri-Food Engineering and Biotechnology
Academic year: 2019
Degree: BACHELOR'S DEGREE IN FOOD ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 6
Teaching languages: Catalan

Degree competences to which the subject contributes

Specific:

Transversal:
- 02 SCS N3. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.

Teaching staff

Coordinator: Balanyà Martí, Teresa

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>Total learning time: 150h</th>
<th>Hours large group: 40h</th>
<th>26.67%</th>
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<tbody>
<tr>
<td></td>
<td>Hours small group: 20h</td>
<td>13.33%</td>
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<tr>
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<td>Self study: 90h</td>
<td>60.00%</td>
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# INTRODUCTION

**Learning time:** 2h 30m  
Theory classes: 1h  
Laboratory classes: 0h  
Self study: 1h 30m

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

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## WASTEWATER TREATMENT OF FOOD INDUSTRIES

**Learning time:** 80h  
Theory classes: 20h  
Laboratory classes: 12h  
Self study: 48h

**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.

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## INDUSTRIAL WASTE MANAGEMENT

**Learning time:** 22h 30m  
Theory classes: 5h  
Laboratory classes: 4h  
Self study: 13h 30m

**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.

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## POLLUTION MINIMIZATION

**Learning time:** 18h  
Theory classes: 4h  
Laboratory classes: 2h  
Self study: 12h

**Description:**  
Cleaner production.  
Pollution prevention in food industries by sectors.
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<table>
<thead>
<tr>
<th>ENVIRONMENTAL MANAGEMENT TOOLS</th>
<th>Learning time: 25h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 8h</td>
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<tr>
<td></td>
<td>Laboratory classes: 2h</td>
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<tr>
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<td>Self study: 15h</td>
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**Description:**
Environmental management tools.
The 20/2009 law of prevention and environmental control of activities.

**Bibliography**

**Basic:**


**Others resources:**