Quality, Innovation and Emerging Processing Technologies  2015 - 2016

Code: 43035
ECTS Credits: 9

<table>
<thead>
<tr>
<th>Degree</th>
<th>Type</th>
<th>Year</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>4313796 Quality of Food of Animal Origin</td>
<td>OB</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Contact
Name: Montserrat Mor-Mur Francesch
Email: Montserrat.Mor-Mur@uab.cat

Use of languages
Principal working language: spanish (spa)

Prerequisites
This module does not have any requirements.

Objectives and Contextualisation
In this module students will learn the different key stages in the innovation process and design of a new product of animal origin. They will also know the most innovative processing technologies; its validation and they will study the parameters of the process that have the greatest impact on the characteristics of the final product. Among the technologies that reduce the environmental impact of the food industry, students will study the use of products for the preparation of functional ingredients.

Skills
- Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.
- Design new foods by incorporating the necessary ingredients and additives and by applying appropriate processing and conservation technologies.
- Design, organise and execute projects related to this field of study, working alone or in a unidisciplinary or multidisciplinary team, displaying a critical sense and creativity, and the ability to analyse, synthesise and interpret information.
- Evaluate the potential of a technological process to obtain the microbiological, physical, chemical, sensorial and nutritional properties that determine the quality of a food.
- Execute and manage an innovation process on a food product, or a production and conservation process.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Search for information using the appropriate channels and use this information to solve problems in the work context.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.

Learning outcomes
1. Carry out a bibliographic search.
2. Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.
3. Identify regional, national and international regulations.
4. Identify scientifically sound information sources.
5. Identify the differential characteristics of the innovation project.
6. Identify the potential of food industry by-products as sources of functional ingredients.
7. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
8. Know the parameters that determine product quality in a process of food transformation or conservation.
9. Make proposals for addressing specific practical problems.
10. Obtain the parameters of a quantitative model that describes the changes caused by technological processing to the properties of a food.
11. Prepare flowcharts, diagrams, tables and/or figures.
12. Present work done in seminars, leading the discussion of problem areas.
13. Present work done in seminars, leading the discussion of problem areas.
14. Recognise the capacities of each different food processing and conservation technology, especially those of emerging technologies.
15. Recommend the appropriate technology for preparing innovative foods.
16. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
17. Use mathematical models to predict the effect of processing on the characteristics of a food.
18. Use tools for managing and documenting the innovation process.

Content

- New technologies for processing and preserving
  
  High pressure
  
  Electrical pulses
  
  High pressure homogenization
  
  Active packaging
  
  UV radiation
    - Validation of technological treatments to ensure food quality
    - Innovation Management
    - New products design
  
  Foods with nutrition and health claims
  
  Recovery of traditional products
  
  Collective restoration
    - Recovery of raw materials devalued and sub products of food industry.

Methodology

- Lectures / expository classes
- Seminars
- Problem-based Learning
- Debates
- Tutoring
- Lab / Pilot Plant
- Reporting / coursework
- Reading articles / reports of interest
- Lecture / oral presentation of work
Activities

<table>
<thead>
<tr>
<th>Title</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participative lectures</td>
<td>42</td>
<td>1.68</td>
<td>8, 9, 6, 5, 10, 16, 7, 15, 14, 18, 17</td>
</tr>
<tr>
<td>Pilot plant practices</td>
<td>9</td>
<td>0.36</td>
<td>9, 6, 11, 16, 7, 14</td>
</tr>
<tr>
<td>Presentation/Oral presentations</td>
<td>14</td>
<td>0.56</td>
<td>11, 12, 13, 2</td>
</tr>
<tr>
<td>Seminars</td>
<td>4</td>
<td>0.16</td>
<td>4, 1, 10, 11, 13, 16, 2, 7, 17</td>
</tr>
</tbody>
</table>

Type: Supervised

<table>
<thead>
<tr>
<th>Title</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning based on problem-solving</td>
<td>10</td>
<td>0.4</td>
<td>8, 4, 9, 1, 6, 5, 3, 10, 11, 12, 13, 16, 2, 7, 15, 14, 18, 17</td>
</tr>
<tr>
<td>Unprogrammed tutoring</td>
<td>15</td>
<td>0.6</td>
<td>8, 4, 9, 6, 5, 10, 12, 2, 7, 15, 14, 18, 17</td>
</tr>
</tbody>
</table>

Type: Autonomous

<table>
<thead>
<tr>
<th>Title</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading articles and reports of interest</td>
<td>70</td>
<td>2.8</td>
<td>8, 4, 1, 6, 5, 3, 10, 11, 12, 13, 16, 7, 15, 14, 18, 17</td>
</tr>
<tr>
<td>Reporting</td>
<td>59</td>
<td>2.36</td>
<td>8, 4, 9, 1, 6, 5, 3, 10, 11, 12, 13, 16, 7, 15, 14, 18, 17</td>
</tr>
</tbody>
</table>

Evaluation

- Lectures / expository classes
- Seminars
- Problem-based Learning
- Debates
- Tutoring
- Lab / Pilot Plant
- Reporting / coursework
- Reading articles / reports of interest
- Lecture / oral presentation of work

Evaluation activities

<table>
<thead>
<tr>
<th>Title</th>
<th>Weighting</th>
<th>Hours</th>
<th>ECTS</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery of problems and written exercises</td>
<td>Weighted with the associated topics</td>
<td>1</td>
<td>0.04</td>
<td>8, 4, 9, 1, 6, 5, 3, 10, 11, 12, 13, 16, 2, 7, 15, 14, 18, 17</td>
</tr>
<tr>
<td>Presentations</td>
<td>Weighted with the associated topics</td>
<td>1</td>
<td>0.04</td>
<td>8, 4, 9, 1, 6, 5, 3, 10, 11, 12, 13, 16, 2, 7, 15, 14, 18, 17</td>
</tr>
</tbody>
</table>

Bibliography


