Master Programme: Food science and technology
Integrated Course: Biology and biotechnology of Food-related microorganisms (9 CFU)
Module: Food Biotechnology (6 CFU)
(4 CFU Lectures + 2 CFU Laboratory or field classes)

Professor
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Educational Goals
To deal with microbial cell physiology and microbial growth in response to environmental parameters, with determination and control of microbial cell densities in food, and with spoilage and pathogenic microorganisms in vegetable- and animal-derived food.

Acquirable skills
To work in laboratories wherein food-related microorganisms are cultivated, isolated and identified. To manage with control of microorganisms in food. At the end of the integrated course will be acquired the basic skills for the cultivation, growth, isolation and identification of microorganisms of food and their control.

Programme (1 ECTS of Lecture = 8 hours; 1 ECTS of Laboratory and field classes = 14 hours)

<table>
<thead>
<tr>
<th>Topic/Subject</th>
<th>N. ECTS</th>
<th>Number of hours</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Lecture</td>
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<tr>
<td>Microbial cell physiology and microbial growth in response to environmental parameters. Outlines of environmental adaptation.</td>
<td>1.4</td>
<td>11.2</td>
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<td>Food-related microorganisms: meat, poultry, eggs, fish, milk and dairy products, fresh and fermented vegetables.</td>
<td>1.2</td>
<td>8</td>
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<td>Basic methods for determining microbial cell density in food.</td>
<td>1.8</td>
<td>0</td>
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<tr>
<td>Control of microbial cell numbers in food: chemicals, radiations, low temperatures, high temperatures, drying.</td>
<td>1.0</td>
<td>8</td>
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<tr>
<td>Principles of HACCP.</td>
<td>0.6</td>
<td>4.8</td>
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<td><strong>Total</strong></td>
<td><strong>6</strong></td>
<td><strong>32</strong></td>
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The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in the laboratory / production farms, as reported in the Academic Regulations for the Degree in Food Science and technology (article 9) and in the study plan (Annex A). The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex A of the Academic Regulations for the Degree in Food Science and Technology. For students who have done the middle-term preliminary exam, the evaluation of the final exam will be expressed in thirtieths.

Support materials

- Notes of the lectures distributed during the course.

Additional readings

**Visiting hours**

Official visiting hours. Monday, Tuesday and Wednesday by previous agreement.

**Teaching procedures**

Lectures will be presented through PC assisted tools (Powerpoint) and slide projector.

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