LEARNING GUIDE

FOOD TECHNOLOGY II

Academic year 2019-2020

<table>
<thead>
<tr>
<th>MODULE</th>
<th>CONTENT</th>
<th>YEAR</th>
<th>TERM</th>
<th>CREDITS</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Technology</td>
<td>Food Industries</td>
<td>3º</td>
<td>2º</td>
<td>6</td>
<td>Compulsory</td>
</tr>
</tbody>
</table>

LECTURER(S)

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DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT

Degree in Food Science and Technology

TUTORIAL SCHEDULE

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PREREQUISITES and/or RECOMMENDATIONS (if necessary)

Students should have passed the following subjects: Fundamentals of Food Engineering, Unit Operations in the Food Industry and Food Technology I

BRIEF ACCOUNT OF THE SUBJECT PROGRAMME


GENERAL AND PARTICULAR ABILITIES

OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)

At the end of this subject the student should know / understand:

- The equipment for size reduction, classification and mixing of solids and their operation.
- The basics of the formulation and stability of food emulsions
- The techniques and equipment used for emulsification at industrial level
- The main fluid-solid operations carried out in the food industry and its fundamentals, as well as the equipment used.
- The fundamentals of industrial processing operations (baking, cooking and frying) and the equipment used for the same.

Similarly, at the end of the subject the student should be able to:

- Characterize powdery solids, and interpret size distribution data.
- Calculate the energy needs for size reduction of solids.
- Calculate the process conditions required for mixing, emulsifying and homogenizing fluids.
- Design equipment for carrying out solid-fluid operations such as settling, centrifugation, filtration, fluidization, pressing, crystallization and adsorption.
- Describe industrial cooking processes, with a focus on baking, cooking and frying.

DETAILED SUBJECT SYLLABUS

THEORETICAL TOPICS:

1. Operations with solid foods


2. Operations with liquid foods


3. Solid-fluid Operations


4. Industrial processing operations


PRACTICES:

Laboratory Practices:
1) Solids particle size distribution function fitting (Excel).
2) Solids Handling: Sieving, Mixing and Pneumatic transport
3) Liquid agitation and mixing. Determination of power consumption.
4) Fluidized beds study. Determination of minimum fluidization velocity.

READING