### SUBJECT GUIDE

**FOOD TECHNOLOGY I**

**Academic year 2019-2020**

Date last updated: 20/05/2019

Date of approval in Department Council: 22/05/2019

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### LECTURER(S)

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### DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT

Degree in Food Science and Technology

### PREREQUISITES and/or RECOMMENDATIONS (If necessary)

Students should have passed the following subjects: Basics of Food Engineering and Unit Operations in the Food Industry.

### BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE ??)


### GENERAL AND PARTICULAR ABILITIES

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

- Select variables of heat treatment necessary for microbial thermal inactivation.
- Identify alternative sterilization technologies such as irradiation, high-pressure processing and pulsed electric field processing.
- Calculate refrigeration systems, including mechanical refrigeration cycle.
- Design preservation systems by reducing the water activity such as drying, freeze-drying and evaporation.
- Describe materials and types of packaging suitable for various foods.

## Detailed Subject Syllabus

### Theoretical Topics:

1. **Thermal Processing**
   

2. **Low Temperature Technologies for Preservation**
   
   Irradiation. High-pressure processing. Pulsed electric field.

3. **Freezing**
   
   Low temperature production: mechanical refrigeration cycle, enthalpy diagram, refrigerants. Refrigeration: heat transfer under unsteady state, calculations of common terms used in refrigeration system design. Freezing: freezing curve, freezing kinetics.

4. **Dehydration**
   

5. **Packaging**
   

### Practices:

Laboratory Practices

### Reading


### Recommended Internet Links

[http://grados.ugr.es](http://grados.ugr.es)