

<b>POLI</b> ESCOLA SUPERIOR TURISMO HOTELARIA <b>TÉCNICO</b> <b>GUARDA</b>	<b>SUBJECT DESCRIPTION</b>	<b>MODELO</b> PED.014.03
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Course	Catering and Food services					
Subject	Food Safety and Hygiene					
Academic year	2023/2024	Curricular year	2nd	Study period	2nd semester	
Type of subject	Compulsory	Student workload (H)	Total: 96	Contact: 60	ECTS	4
Professor(s)	Ivo Oliveira; Dânia Dinis					
<input checked="" type="checkbox"/> Area/Group Coordinator <input type="checkbox"/> Head of Department		(select)	Maximiano José Prata Ribeiro			

## PLANNED SUBJECT DESCRIPTION

### 1. LEARNING OBJECTIVES

It is intended that student can understand the main physical and chemical processing and food technology, including identifying the most common methods for food preservation, as well as the changes caused by those same processing methods in food characteristics. That student should be able to establish the link between sensory analyses with organoleptic quality components associating their manifestation mechanism.

At the end, the student, although under supervision, must to be able to understand and apply technical terminology of food technology and to define the main properties of food that influence their sensory properties.

The subject aims to develop students' skills systemic academic, operational, as well as skills in the instrumental domain.

### 2. PROGRAMME

1 - Nutritional and physical and chemical properties of nutrients and groups of compounds present in foods

- a. Proteins
- b. Carbohydrates
- c. Fats.
- d. Water
- e. Fibres
- f. Physical processes in processing, packaging and storage.
- g. Physical processes in food preservation.
- h. Physical processes in production control and quality analysis of food

2 – Intrinsic and extrinsic factor influencing food compositions and preservation

Intrinsic factors

- a. Food water activity
- b. Food nutrients
- c. Antimicrobial compounds of foods
- d. Biological structures of foods.
- e. Food microbiota

Extrinsic factors

- a. Temperature.
- b. Oxygen
- c. Relative moisture

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d. Presence of gases

### 3 - Food quality

- a. Food composition
- b. Food labeling
- c. PortFIR Program

4 – Sensory analysis methodologies: sensory evaluation preparation; tasting rooms, types and techniques of analysis. Organoleptic characteristics perceived by sense organs. Limits of perception and detection of basic flavours.

### 5 – Food conservation methodologies and physical transformations

- a. Salting
- b. Addition of sugar
- c. Smoking
- d. Fermentation
- e. Irradiation

### 6 – Effects of cooking

- a. Cooking techniques
- b. Taste
- c. Weight and volume
- d. Firmness and texture
- e. Proteins
- f. Fats
- g. Carbohydrates
- h. Water
- i. Water-soluble vitamins and minerals

7 – Food processing techniques: effects on quality and nutritional values (evolution and nutritional modifications)

- a. Pasteurization
- b. Blanching
- c. Sterilization
- d. Refrigeration
- e. Freezing
- f. Concentration
- g. Drying
- h. Use of packaging: glass, plastic, paper, metal, modified atmosphere

### 8 – Food production systems: effects on composition and food quality

- a. Cook chill
- b. Cook-freeze
- c. Sous-vide
- d. Modified atmosphere
- e. Future trends

## 3. COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

This course through the syllabus addressed, aims to contribute to the student training as a person and as a future professional in an area with the big specificity of food industry.

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Hence, the presented contents help to train the student and to make hem aware the need to know, learning to be, learning to do and the know-how, in technical, operational and instrumental knowledge, in an integrated and systemic way.

It is intended that student obtains knowledge to develop operational and instrumental competences. At the end, students should be able, independently, to take part and develop its own activity namely in the organization, development, operations management, and control or application of processes and legal requirements of the sector.

#### 4. MAIN BIBLIOGRAPHY

##### **Obligatory**

- Castro, C. (2021). Manual de Física e Química dos Alimentos. Seia: ESTH/IPG
- Anzaldúa-Morales, A., La evaluación sensorial de los alimentos en la teoria y la práctica, Editorial Acirbia, S.A., Espanha (1994).
- Barham, P. *The science of cooking*. Berlin: Springer (2001).
- Belitz, H.D., Grosch, W., *Food Chemistry*, Springer Verlag, S.A. (1999).
- Coultate, T.P., *Alimentos. Quimica de sus componentes*, Acirbia Zaragoza,Espanha. (1986).
- Meilgaard, M, Civille, G.V e Carr, B.T.,. *Sensory evaluation techniques*. 2nd. Ed. CRC Press, Boca Raton, Flórida, EUA (1991).
- Weaver, C. *The Food Chemistry Laboratory*, CRC Press, Inc. Mortin M., Gail V.C., B Thomas C., Sensory Evaluation Techniques-CRC PRESS (1996).

##### **Complementary**

- Evangelista, J., *Tecnologia de Alimentos*, Atheneu Editora, (1992).
- Heldman, D.R. and Hartel, R. W., *Principles of Food Processing*, Chapman & Hall, New York, USA (1997).
- Lyon, D.H; Francombe, M.A.; Hasdell, T.A. e Lawson, K. (eds.), *Guidelines for Sensory Analysis in Food Product Development and Quality Control*. Chapman & Hall, London, Reino Unido (1982).
- Araújo, Wilma. *Alquimia dos Alimentos*, Editora Senac, Brasília, Brasil (2007).

##### **Others:**

Handbook of practical classes, prepared and provided by the teacher.

##### **Webgrafia:**

<http://portfir.insa.pt/>  
<http://www.rpaulsingh.com/learning/virtual/virtual.html>

#### 5. TEACHING METHODOLOGIES (INCLUDING EVALUATION)

Regarding continuous assessment, the final classification will result from the weighting of the result of one test (50%), the presentation of a research work (20%), the completion and presentation of reports of practical classes (25%), and the presence in classes (5%) in a total of 100%.

Final assessment by exam: will consist of a written test (exam with theoretical component – 70% and practical – 30%), held at the end of the semester. The evaluation result will be expressed on a scale from 0 to 20 values. For students who obtained practical assessment, by continuous assessment, it was weighted in the exam grade (30%).

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## 6. COHERENCE BETWEEN TEACHING METHODOLOGIES AND OBJECTIVES

The methods provided were consistent with the purpose of the course.

The methods and teaching techniques applied during the sessions were: affirmative method with interconnection between technical expository and demonstrative, whereas was teacher's responsibility to reinforce the learning and coordination among the different activities and tasks simulations about operational and professional techniques.

The methodology aimed to create the spirit and the vision of the technical sector and to train professional skills to perform the practice of restaurant and catering operations.

## 7. ATTENDANCE

It is essential for carrying out continuous assessment that the student has attended at least 75% of lessons.

Clique

### SIGNATURES

*Professor(s), Area/Group Coordinator or Head of Department signatures*

Professor

(signature)

Assinatura na qualidade de (clicar)

(signature)

Assinatura na qualidade de (clicar)

(signature)

Assinatura na qualidade de (clicar)

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