

**COURSE DATA****Data Subject**

<b>Code</b>	36378
<b>Name</b>	Cooking techniques
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	6.0
<b>Academic year</b>	2021 - 2022

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
1212 - Degree in Gastronomic Sciences	Faculty of Pharmacy and Food Sciences	2	First term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1212 - Degree in Gastronomic Sciences	18 - Cooking techniques	Obligatory

**Coordination**

<b>Name</b>	<b>Department</b>
SOLER QUILES, CARLA MARIA	265 - Prev. Medicine, Public Health, Food Sc., Toxic. and For. Med.

**SUMMARY**

The Culinary Technology course is an obligatory subject of the second year of the Degree of Gastronomy Science, which is taught in the Faculty of Pharmacy, University of Valencia. This course has a total of 6 ECTS taught in the first term quarter.

Different cooking techniques are used in preparation of food and they will significantly affect to the sensory and nutritional quality of food. In preparing foods using various cooking techniques that will decisively affect the sensory quality and nutritious food. On the other hand, the evolution of social habits, especially in developed countries has changed the way we eat, both on the quality of our diet and the type of cuisine that are made in our menus. So, in the exercise of a professional of gastronomy, a thorough knowledge of culinary techniques, as well as the effect caused in the properties of food, is essential to establish recommendations in food preparation. It is also intended to obtain ideas about the spaces in which these processes take place.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

To study the subject it is interesting to have basic knowledge of physics, chemistry and biochemistry that will allow students to understand the changes in the composition of foods and the theoretical concepts of Culinary Techniques. Moreover, it is also interesting to have knowledge in Food Science, Nutrition and Food Technology, without which they would be very difficult to understand some issues developed in the course subject.

## OUTCOMES

### 1212 - Degree in Gastronomic Sciences

- Analyse, fine-tune and develop the process of basic food preparations with multiple applications using the methods of storage and conservation.
- Classify, evaluate and describe the properties of the raw materials used in cooking according to their organoleptic, nutritional and quality characteristics and the possibilities of intervention in gastronomic offers.
- Characterise food preparations according to their composition, production and service.
- Analyse the cooking processes by identifying and characterising the techniques, operations, phases, operating and control parameters and associated services needed for food preparations, and by defining the results to be obtained.
- Know and know how to apply the cooking techniques to optimise the organoleptic and nutritional characteristics of foodstuffs, with respect to traditional and current gastronomy.

## LEARNING OUTCOMES

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## DESCRIPTION OF CONTENTS

### 1. Introduction



Topic 1. Introduction to Culinary Technology. Definition of Culinary Technology. Objectives. Some milestones.

Topic 2. The current catering industry: food sources. Objectives of the current catering industry: the menus. Development of eating habits. Current systems of collective restoration.

Topic 3. Community Kitchen . Defining kitchen. The classic cuisine. Key factors in the evolution of catering. Identification of variants of catering.

Topic 4. The culinary space. Areas of the culinary space. Personal. The rational distribution

## **2. Preparative culinary operations**

Topic 4. Preparative culinary operations without application of heat. Operations of sorting, cleaning and cutting. Operations pf sorting, cutting and cleaning. Emulsions and types of emulsion. Production of cold sauces.

Topic 6. Preparative culinary operations with application of heat. Operations of binding ingredients. Development of funds and hot sauces.

Topic 7. Spice and flavoring. Spices, herbs and essential oils. Factors affecting the taste. Confit. Marinade. Adobo.

## **3. Cooking: operations with heat**

Topic 8. Application of heat to food: Cooking. Overview cooking. The generation of heat and transfer to food. Changes of heat on food. Chemical changes of food by the heat. Maillard and caramelization reactions. Physical changes of food. Culinary application.

Topic 9. Dry cooking. The roast and Smoking. Preliminary considerations. Direct roast or grilled directly on the grill. Indirect roast in the oven. Smoking. Frying. Overview frying. Operations prior to frying. Characteristics of frying oils. Effect on food.

Topic 10. Cooking in aqueous media. Overview and types of cooking in aqueous media. Importance of water in the application of heat. Effect on food.

Topic 11. Mixed Cooking. Overview and types of mixed cooking.

Topic 12. Vacuum cooking. Overview. Process. Advantages and disadvantages.

Topic 13. Microwave cooking. Fundamentals and physical principles of heating. Penetration depth of microwaves. The process of heat transfer. Applications to food.

## **4. Other concepts**

Topic 14: The quality in culinary technology. Quality of cooked dishes. Making datasheet of dishes. Integrated aspects of quality.

**5. Laboratory sessions**

BLOCK 1: The culinary space

BLOCK 2: Preparative culinary operations without application of heat.

Production of cold sauces.

BLOCK 3: Preparative culinary operations with application of heat.

Development of funds and hot sauces.

BLOCK 4: Cooking.

The roast and Smoking.

Frying.

Cooking in aqueous media.

Mixed Cooking.

Vacuum cooking.

Microwave cooking.

BLOCK 5: New Culinary Techniques .

BLOCK 6: Molecular Gastronomy.

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Other activities	30,00	100
Theory classes	15,00	100
Laboratory practices	15,00	100
Development of group work	20,00	0
Study and independent work	65,00	0
Readings supplementary material	5,00	0
<b>TOTAL</b>	<b>150,00</b>	

**TEACHING METHODOLOGY**

The theoretical teaching methodology will be based on the delivery of lectures along with the possible performance, presentation and defense of individual and collective reports. Classes are taught using audio-visual technical equipment. The student will have this material in the virtual classroom

The practice sessions will be conducted in a professional kitchen where students can extend and implement the knowledge. He distributed a booklet of practices with the necessary materials and the development of each of the perfectly organized practices. The teacher will monitor the practice, will address the doubts in the implementation and provide guidance on how to make reports, organizing results and conclusions. At the end of the internship, the teacher will distribute a series of questions that students will develop and deliver to the teacher within a certain time.



Visits to centers of interest for the subject will be scheduled. The aim of them is to show in site day to day, process and facilities of a company to apply theoretical knowledge. To make the most of the experience, a previous study of the company will be asked, whenever possible, and the professor will address the doubts. At the end of the visit, a report will be delivered to the teacher.

## EVALUATION

Written test to ensure knowledge and understanding of established theoretical minimum content for the subject (60%). The written test will include questions about theoretical sessions and visits.

Continuous evaluation with the possible implementation, presentation and defense of individual and group reports on topics related to the contents explained and discussed during visits or seminars. The level of understanding of content and skills to their exposure, advocacy and discussion will be appreciated, when it would be possible. (20%)

Assessment of practice sessions work by monitoring the work with detailed and organized reports. (10%)  
In addition, an exam about the lab sessions will be carried out (10%).

**It is necessary to acquire 5 out of 10 points in the written test to pass the subject. Attendance at practices and visits is mandatory to pass the subject.**

## REFERENCES

### Basic

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Referencia b1: Armendáriz, J.L. (2001). Procesos de cocina. Ed. Thomson-Paraninfo. Madrid.

Referencia b2: Bello, J. (1998). Ciencia y tecnología culinaria. Ed. Díaz de Santos. Madrid.

Referencia b3: Coenders, A. (1996). Química culinaria. Ed. Acribia, Zaragoza.

B4 Harol McGee (2007) La cocina y los alimentos. Ed Debate, Barcelona

B5 Harol McGee (2010) La buena cocina. Ed Debate, Barcelona

B6 Pérez, N., Mayor, G., Navarro, V.J. (2002) Técnicas Culinarias. Ed. Síntesis, S.A., Madrid.

B7 Potter, N., Hotchkiss, J.H. (1999) Ciencia de los alimentos. Ed. Acribia, Zaragoza.

B8 Sala, Y., Montañés, J. (CESNID). (1999). Restauración colectiva. Planificación de instalaciones, locales y equipamientos. Ed. Masson S.A. Barcelona.

B9 Taylor, E., Taylor, J. (2001). Fundamentos de la teoría y práctica del catering. Ed. Acribia, Zaragoza.

B10 Myhrvold N., Young C., Bilet M. (2011). Modernist Cuisine. El arte y la ciencia de la cocina. Ed. Taschen.

B11 Myhrvold N, Youngy C, Bilet M (2013). Modernist cuisine at home. Ed. Taschen

B12 Cazor A., Liénard C. (2011). Molecular cuisine : twenty techniques, forty recipes. CRC Press.





### Additional

- Referencia c1: Barham, P. (2002). La cocina y la ciencia. Ed. Acribia, Zaragoza
- Referencia c2: Blasco, A. (2006) Manual de gestión de producción de alojamiento y restauración. Ed. Síntesis, S.A., Madrid.
- Referencia c3: Botella, T (2010). Cocinar al vacío. Ed. Akal, Madrid
- C4 De moret Ros, X (2007). El bulli desde dentro. Ed RBA libros.
- C5 Cambón C., Martín S., Rodriguez E (2007). Ciencia a la cazuela. Madrid. Alianza Editorial
- C6 Iglesias, P. (2005). El libro de las salsas. Madrid: Alianza Editorial.
- C7 Llamas, M.V. (2005). La cocina del microondas. Madrid: Alianza Editorial.
- C8 Lister T and Blumenthal H. (2005). Kitchen Chemistry. Royal Society of chemistry. London
- C9 Neirinck E., Poulain J.P (2001). Historia de la cocina y de los cocineros. Ed. Zendrera Zariquiey, Barcelona
- C10 Núñez, R (2007). Un científico en la cocina. Barcelona. Planeta
- C11 Pérez Conesa, J. (1998) Cocinar con una pizca de ciencia. Proceso culinarios. IJK Editores.
- C12 Santamaría S (2008). La cocina al desnudo. Barcelona. Planeta
- C13 Schwed G. (2006). Experimentos en la cocina. La cocción, el asado, el horneado. Editorial Acribia, SA. Zaragoza
- C14 Tablado C.F y Gallego J.F (2004). Manual de Higiene y Seguridad Alimentaria en Hostelería. Paraninfo SA. Madrid
- C15 This, H. (1996). Los secretos de los pucheros. Ed. Acribia, Zaragoza.

### ADDENDUM COVID-19

**This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council**

#### 2. Workload and time schedule of the subject taught

Remains unchanged.

#### 3. Teaching Method

**Theoretical Sessions.** Theoretical sessions will take place in person and on line by video conference (Blackboard) synchronously, forums, power point presentations or pdf documents, respecting time schedule. All the necessary documentation to follow-up the classes, as well as other more specific documentation, will be accessible in the Online Classroom.

**Practical Sessions.** Practical sessions will take place in person. In case that it couldn't be possible, the same media as those used in theory sessions will be used, combining videoconferences synchronously with didactic videos display.



**Visits.** Visits will be attempted to be in person; if it couldn't be possible, didactic videos would be provided and commented.

#### **4. Assessment**

It does not change neither the assessment nor the weight of each evaluable part with respect to the information referred in the Teaching Guide of the subject.

In case the theoretical and practical assessment couldn't take place in person, the same online media used in the other sessions would be used. Exams would consist of multiple choice test using the Online Classroom.