

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

<b>Code</b>	36396
<b>Name</b>	Technological advances
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	4.5
<b>Academic year</b>	2023 - 2024

**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	4	First term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1212 - Degree in Gastronomic Sciences	36 - Avances tecnológicos	Optional

**Coordination**

<b>Name</b>	<b>Department</b>
ROS LIS, JOSE VICENTE	320 - Inorganic Chemistry

**SUMMARY**

Food, despite being a traditional sector is experiencing significant advances in techniques and formulations. Aspects such as food safety, efficiency and offering new functionalities are aspects that act as focus of attention of these innovations.

Due to this, it is important to have a vision of the state of the art and acquire competences that allow identifying innovations and trends. It is also crucial to protect innovations in a highly competitive field.

The course will offer students information on the technological advances that have occurred in recent years in the development of new gastronomic products, the current research lines and the future needs of gastronomy. It will also provide knowledge about the patent system and databases and information search tools. The contents will be addressed both from a theoretical and practical point of view.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

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

### Other requirements

No entry requirements

## OUTCOMES

### 1212 - Degree in Gastronomic Sciences

- Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.
- Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.
- Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.
- Have knowledge and understanding in the field of gastronomic sciences.
- Plan, order and channel activities in such a way that unforeseen events are avoided as much as possible, possible problems are foreseen and minimised, and solutions are anticipated.
- Acquire the basic training needed to formulate hypotheses, gather and interpret information for solving problems using the scientific method, and understand the importance and the limitations of scientific thinking.
- Be able to work in a team and to organise and plan activities, always taking account of gender perspective.
- Resolve tasks or carry out work in the time allotted while maintaining the quality of the result.
- Be able to construct an understandable and organised written text.
- Be able to distribute time appropriately for carrying out individual or group tasks.
- Be able to apply this knowledge to the professional world, contributing to the development of human rights, democratic principles, the principles of equality between women and men, solidarity, environmental protection and the promotion of a culture of peace from a gender perspective.



## LEARNING OUTCOMES

Know the most innovative lines of research, both at the culinary level and on the production line development in the food industry Understand the patent system Identify trends and opportunities for innovation In relation to the Sustainable Development Goals (SDG) in this subject, students are expected to be able to generate innovations that promote food security and improved nutrition (SDG 2 and 9). These innovations will have as main characteristics the generation of new economic opportunities (SDG 8) and their sustainability (SDG 11, 12 and 13).

## DESCRIPTION OF CONTENTS

### 1. Research lines at the culinary level both in kitchen and at production line in pilot plants.

1. Trends in the development of new gastronomic products. Tools for searching and identifying trends.
2. Lines of research in gastronomy. Research lines related to the development of equipment. Research lines related to obtaining and using new ingredients. Research lines related to new processes or services.

### 2. Patent regulations

1. Basic concepts of protection of industrial and intellectual property
2. National legislation on patents.
3. International framework of the patent regime
4. Content of a patent document
5. Legal status of a patent of invention

### 3. Gastronomic patents and know-how

1. Patent search engines
2. Examples of gastronomic patents
3. Assessment of the patentability of gastronomic advances
4. Patent writing in the field of gastronomy

### 4. Needs for the future of gastronomy

1. Use of ICT in gastronomy.
2. New spaces and forms of consumption.
3. Other tools for the future.

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Laboratory practices	15,00	100
Study and independent work	67,50	0
<b>TOTAL</b>	<b>112,50</b>	

**TEACHING METHODOLOGY**

Study of theory contents.- The teacher will explain the most important concepts and contents of each subject in order that the student acquires knowledge related to the subject, enhancing participation.

Practical lectures.- They are intended to consolidate theoretical knowledge, through the practical application of them. The teacher will present the objectives, inform about the handling of the material, supervise the realization of the work and help the interpretation of the results.

Study: preparation of seminars, classes and exams. - Autonomous work for reading and prepare of classes, exams and work to be presented in seminars.

**EVALUATION**

Exam. The possibility of carrying out written tests throughout the course is contemplated. 60%

Continuous evaluation by the teacher as a result of the contact with students in any of the sections of the learning process. 20 %

Evaluation of practical lectures. The possibility of carrying out a practice report is contemplated. 20 %

**REFERENCES****Basic**

- <https://www.oepm.es/es/index.html>  
<http://www.epo.org>  
<https://worldwide.espacenet.com>

Capítulo "Nanomaterials-based optoelectronic noses for food monitoring and classification" páginas 1 a 33 en el libro Nanobiosensors. Ed.: Elsevier. ISBN 9780-1-28-043721

Capítulo "Functionalized Silica Nanomaterials as a New Tool for New Industrial Applications" páginas 165 a 196 en el libro Impact of Nanoscience in the Food Industry. Ed.: Elsevier. ISBN 978-0-12-811441-4

Capítulo "Use of Nanomaterials as an alternative for controlling enzymatic browning in fruit juices" páginas 163 a 196 en el libro Nanoengineering in the beverage industry. Ed.: Elsevier. ISBN 9780-1-28-17284-1



Capítulo "Nanosensors for Intelligent Packaging" páginas 581 a 593 en el libro Nanosensors ofor Smart Manufacturing. Ed.: Elsevier. ISBN 978-0-12-823358-00

