COURSE DATA

DATA SUBJECT

Code: 33991
Name: Receptacles
Cycle: Undergraduate Studies
ECTS Credits: 4.5
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1103 - Degree in Food Science and Technology	Facultat de Farmàcia i Ciències de l'alimentació	4	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1103 - Degree in Food Science and Technology	Packaging	ELECTIVES

COORDINATION

MARTINEZ ABAD ANTONIO

SUMMARY

Food Packaging is an elective subject for fourth course of Science and Food Technology, which is taught in the Faculty of Pharmacy, University of Valencia. This course has a total of 4.5 ECTS taught in the first quarter.

Packaging of food products is a fundamental and an indispensable tool in food marketing and preservation. There is a wide variety of packages, which are key to guarantee an optimal food distribution, helping to maintain the hygienic and quality standards currently required for food marketing. The most important groups of food packaging include the metallic, glass and plastic ones. The overall objective of the subject is precisely to present the different types of food packages that are used in the food industry, the packaging processes, the needs and characteristics of packaging according to the to specific technologies or products, the equipments that are used and the new alternatives to face the environmental problems caused by the massive use of synthetic plastics. Therefore, most of the course is devoted to describing the composition, most important characteristics and role of the packaging materials for food applications. In addition, the graduate in Science and Technology Food should have knowledge about basic characteristics of food packages depending on the type of food. Another object of this course is to show the trends in this area, especially in relation to plastic packages and its alternatives to palliate the

contamination problems. Thus, the subject of food packages listed as one of the educational contents of interest that must exist within the degree of Science and Food Technology.

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 is of interest to have done the courses: chemistry, food chemistry, food processing and preservation and food industries.

COMPETENCES / LEARNING OUTCOMES

1103 - Degree in Food Science and Technology

Conocer los criterios para la selección de la maquinaria de envasado.

Have knowledge and understanding in the area of food science and technology.

Know about new trends in food packaging: active and smart packaging and its application in the food industry.

Know the methodology for the proper selection of containers according to the product to be packed and the marketing planned.

Know the practical aspects of wrapping and packaging technology and its impact on food quality and safety.

DESCRIPTION OF CONTENTS

1. Introduction to the subject

Topic 1. Introduction to the subject. Development of food packages. Packaging as a vehicle for communication and competitiveness. Food packaging materials, general characteristics. Basic legislation.

Topic 2. Metallic packages. Materials and composition. Packaging production. Interactions package/product. Applications and examples.

Topic 3. Glass Packages. Materials and composition. Packaging production. Interactions package/product.

2. Packaging materials

Topic 2. Metallic packages. Materials and composition. Packaging production. Interactions package/product. Applications and examples.
Applications and examples.

Topic 4. Paper and cardboard. Materials and composition. Packaging production. Interactions package/product. Applications and examples.

Topic 5. Plastic packaging 1. Classification, characteristics and properties of commonly used plastics.

Topic 6. Plastic packaging 2. Manufacture of plastic packaging. Packaging/product interactions, migration and legislation. Applications and examples.

3. Packaging technologies

Topic 7. Canning. Generalities and examples of applications

Topic 8. Aseptic Packaging. Generalities and examples of applications

Topic 9. Vacuum and modified atmosphere packaging. Generalities and examples of applications

Topic 10. Packaging of frozen and freeze-dried products. Generalities and examples of applications

Topic 11. Active and intelligent packaging. Definitions, characteristics, types, examples and legislation.

4. Packaging trends

Topic 12. Innovation in packaging. Current situation and innovation strategies. Recent developments

Topic 13. Biopolymers. Alternatives, main characteristics of biopolymers and applications.

Topic 14. Recycling and reuse of packaging. Problem of the massive use of plastics. Technical situation of the recovery and recycling of packaging materials. Waste management.

5. Practicals

PRACTICAL 1. Visit to a packaging technological centre

PRACTICAL 2. Practical cases

PRACTICAL 3. Company visit

PRACTICAL 4. Practical work in groups

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	1,00
Theory	25,00
Seminar	2,00
Laboratory	15,00
Total hours	**43,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	0,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**0,00**

TEACHING METHODOLOGY

The theoretical teaching methodology is based on the delivery of interactive lectures with the participation of students. Individual study of the topics above will be strengthened with this participation. The **seminars** are gr works that will consist of the approach of a working hypothesis on sustainable packaging in line with the Sustaina Development Goals (SDG) related to the subject, and with the lines of action of the AGROALNEXT call of Generalitat Valenciana (GVA) based on the supply of healthy, safe and sustainable food in line with the circ economy. A practical workshop will be held to support or refute it. In addition, dissemination skills could be enhan by producing infographics or posters and dissemination videos that will be posted on a channel on the YouT platform for the creation of useful teaching material. Coordinated seminars will take place on topics selected related to the course and must follow the guidelines on coordinated seminars available at the web page of the Deg

Practice sessions will serve to extend and implement the knowledge and they will include visits to companies.

EVALUATION

Evidence of copying or plagiarism in any of the assessable tasks will result in failure to pass the subject

and in appropriate disciplinary action being taken. Please note that, in accordance with article 13. d) of the Statute of the University Student (RD 1791/2010, of 30 December), it is the duty of students to refrain from using or participating in dishonest means in assessment tests, assignments or university official documents. In the event of fraudulent practices, the "Action Protocol for fraudulent practices at the University of Valencia" will be applied (ACGUV 123/2020): https://www.uv.es/sgeneral/Protocols/C83sp.pdf.

a) Producing, presentation and defense of works related to the contents explained and discussed in the classroom related to one of the subjects studied during the semester (coordinated seminars). Written work will be evaluated and the level of understanding of the content and skills to their exposure, advocacy and discussion. (10%).

b) Written test to ensure knowledge and understanding of theoretical minimum content established for the subject (55%). A voluntary intermediate written test will be carried out on topics 1 to 6. If this option is chosen, it is required to obtain a minimum of 4.5 points out of 10 in this test to eliminate the subject. The grade for this intermediate test is saved in the 2nd call. The content of the official 1st call exam will refer to the subject not evaluated in the intermediate test or to the entire subject, in the event that the student has not chosen to take said test.

c) Evaluation of collaborative work in the practices and the ability to orally expose the contents (25%).

d) Evaluation of the work and participation during courses, activities and tutoring (10%)

Should be obtained 4.5 points out of 10 on the written test to pass the subject.

Attendance at practices is obligatory for passing the subject except for those students that have undertaken these classes previously. Unjustified non-attendance to tutorials and coordinated seminars imply zero points in the corresponding evaluation section except for those students that have undertaken these classes in previous years.

The activities of practices, tutorials and seminars, are of MANDATORY ATTENDANCE and, therefore, NOT RECOVERABLE, in accordance with the provisions of Article 6.5 of the Regulation of Evaluation and Qualification of the UV for Bachelor and Master degrees. If it is not possible to attend any of these activities for justified reasons, it must be communicated in advance. In this way, the person in charge of the subject will determine the actions to be carried out.

. Attendance is NOT mandatory for repeating students who have completed these activities in the two courses after their completion, during which the grades will be kept. Non-attendance without justified cause in the tutorials or in the coordinated seminars will imply a zero in the corresponding evaluation section, on the other hand, the non-presentation of the coordinated seminar will imply the failure of the subject, except for the repeating students who have attended and presented in previous courses.

REFERENCES

- Robertson, G.L. (1992). Food Packaging. Principles and Practice. Marcel & Decker Lee, Dong Sun, Yam, Kit L, Piergiovanni, Luciano, (1950). Food Packaging Science and Technology. Boca Raton : CRC Press, cop. 2008. Han, Jung H. Innovations in Food Packaging. Amsterdam : Elsevier, 2014. 2nd ed. Coles, Richard; McDowell, Derek; Kirwan, Mark J. Food Packaging Technology. Oxford etc. : Blackwell : CRC Press, cop. 2003.

- Ahvenainen, R. Novel Food Packaging Technologies. Woodhead Publishing, 2003 Kerry, J. & Butler, P. Smart Packaging Technologies for Fast Moving Consumer Goods. Wiley, 2008. ISBN: 978-0-470-0282-5 Silvestre, C., Cimmino, S. Ecosustainable Polymer Nanomaterials for Food Packaging. CRC Press, 2013. Print ISBN: 978-90-04-20737-0 eBook ISBN: 978-90-04-20738-7 Cerqueira, Pereira, Ramos, Teixeira & Vicente. Edible Food Packaging: Materials and Processing Technologies. CRC Press, 2016 ISBN 9781482234169