



Universitat de Lleida

DEGREE CURRICULUM
**INNOVATION IN FOOD
PROCESSING TECHNOLOGIES**

Coordination: SOLIVA FORTUNY, ROBERT CARLES

Academic year 2022-23

Subject's general information

Subject name	INNOVATION IN FOOD PROCESSING TECHNOLOGIES				
Code	13126				
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION				
Typology	Degree	Course	Character	Modality	
	Master's Degree in Agronomic Engineering	2	OPTIONAL	Attendance-based	
	Master's Degree in Management and Innovation in the Food Industry	1	COMPULSORY	Attendance-based	
Course number of credits (ECTS)	9				
Type of activity, credits, and groups	Activity type	PRACAMP	PRALAB	PRAULA	TEORIA
	Number of credits	1	0.4	3.6	4
	Number of groups	1	1	1	1
Coordination	SOLIVA FORTUNY, ROBERT CARLES				
Department	FOOD TECHNOLOGY, ENGINEERING AND SCIENCE				
Teaching load distribution between lectures and independent student work	Number of hours of presential load: 72 Number of hours of independent student work: 153				
Important information on data processing	Consult this link for more information.				

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
ALEGRE VILAS, ISABEL	isabel.alegre@udl.cat	,5	
ELEZ MARTINEZ, PEDRO	pedro.elez@udl.cat	,5	
GARZA GARZA, SALVADOR	salvador.garza@udl.cat	,5	
GRAELL SARLE, JORGE MARIANO	jordi.graell@udl.cat	,5	
IBARZ MARTINEZ, RAQUEL	raquel.ibarz@udl.cat	,75	
LOPEZ FRUCTUOSO, MARIA LUISA	marialuisa.lopez@udl.cat	,25	
MARTIN BELLOSO, OLGA	olga.martin@udl.cat	,25	
MOLINO GAHETE, FRANCISCO	francisco.molino@udl.cat	1,75	
ROMERO FABREGAT, MARIA PAZ	mariapaz.romero@udl.cat	,5	
SALVIA TRUJILLO, LAURA	laura.salvia@udl.cat	,5	
SOLIVA FORTUNY, ROBERT CARLES	robert.soliva@udl.cat	2,5	

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
VIÑAS ALMENAR, M.INMACULADA C.	inmaculada.vinas@udl.cat	,5	

Learning objectives

Upon passing the subject, the student will have demonstrated the achievement of the following learning outcomes:

- To know the main trends in food processing.
- To know the new technological alternatives for food processing.
- To know the fundamentals that govern the application of emerging technologies in the processing of foods.
- To be able to assess the advantages and disadvantages of the different technologies for obtaining of foods with specific and technically feasible characteristics.
- To know how to correctly implement processing strategies for the development of new foods and innovative products.
- To know how to select a treatment or set of processing operations based on a purpose pursued, as well as the necessary equipment for its industrial implementation.

Competences

Basic

CB6 Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.

CB7 That students know how to apply the knowledge acquired and their ability to solve problems in new or unfamiliar settings within broader (or multidisciplinary) contexts related to their area of study

CB9 That students know how to communicate their conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way

CB10 That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

General

CG1 Develop skills for organization and planning.

CG2 Manage information.

CG3 Develop skills for the analysis and synthesis of information.

CG4 Develop critical and self-critical capacity.

CG5 Work as a team and interact with other people from the same or different professional field.

CG6 Solve problems and make decisions.

CG7 Develop the ability to work autonomously.

CG8 Being able to communicate their conclusions -and the knowledge and ultimate reasons that support them- to specialized and non-specialized audiences in a clear and unambiguous way

Transversal

CT1 Communicate clearly and precisely orally and in writing in Catalan and Spanish and in a third language, especially English.

CT2 Efficiently use digital technologies in the professional field.

CT4 Evaluate the sustainability and social impact of the proposed proposals and act with ethical, environmental and professional responsibility.

Specific

CE1 Analyze and interpret legislative updates on food.

CE7 Implement new processing, conservation and packaging technologies, and apply them to develop innovative and higher quality foods.

CE9 Adopt a multidisciplinary perspective in food innovation

CE10 Adopt sustainable innovative strategies in the food industry

Subject contents

- Emerging technologies for food processing and preservation: new mixing and homogenization techniques, new separation and extraction techniques for food components, innovation in preservation technologies using thermal and non-thermal methods, biopreservation .
- Innovations in packaging technologies. Trends in food packaging; advances in packaging design for perishable and non-perishable products; new packaging materials and gases; active and intelligent packaging systems; edible coatings and films.
- Innovations in specific food processes: products of plant origin; animal products.

Methodology

Activity type	Description	Face-to-face		No presential		Evaluation	Total time	
		Goal	Hours	student work	Hours	Hours	Hours	ECTS
Theory	Master class	Explanation of the main concepts	25.5	Study; know , understand and synthesize knowledge	47.5	two	75	3.0
Seminars	Monographic sessions	Analysis of specific applications	10	Study and synthesis of knowledge	14	1	25	1.0
Case analysis	Participatory class	Analysis of specific applications	14.5	Study of cases	55.5		70	2.8
Problem solving	Participatory class	Problem solving	8	Learn to solve problems	12		30	0.8
Practices	Practical work in pilot plant	Execution of practices	4	Preparation of reports	6		10	0.4
Visits	Visit to companies	On site applications technology	10	Study and analysis of visit information	15		25	1.0
Totals			72		150	3		9.0

Evaluation

The evaluation will consist of the weighted average of the following qualifications:

- Written test I: 37.5%
- Written test II: 37.5%
- Problems, practical cases and supervised assignments: 20%
- Reports of practices and visits: 5%

For the purposes of the final grade, to pass the subject it will be necessary to have obtained at least 4.5 in the written tests. To pass the subject, a global grade equal to or greater than 5 must be obtained, considering all evaluable activities with their corresponding weighting.

Bibliography

Han, YH (2013) Innovations in Food Packaging . Ed. Elsevier .

Barbosa- Cánovas , GV; Gould , G.W. (2019) Innovations in Food processing . Ed. Routledge . Taylor and Francis Group.

Knoerzer , K., Muthukumarappan , K. (2021). innovative food Processing Technologies: A comprehensive review . Ed. Elsevier .