



Universitat de Lleida

# DEGREE CURRICULUM **PROTOTYPE DEVELOPMENT**

Coordination: ROMERO FABREGAT, MARIA PAZ

Academic year 2023-24

## Subject's general information

<b>Subject name</b>	PROTOTYPE DEVELOPMENT			
<b>Code</b>	13129			
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Master's Degree in Management and Innovation in the Food Industry	1	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	3			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB	PRAULA	TEORIA
	<b>Number of credits</b>	2	0.6	0.4
	<b>Number of groups</b>	2	1	1
<b>Coordination</b>	ROMERO FABREGAT, MARIA PAZ			
<b>Department</b>	FOOD TECHNOLOGY, ENGINEERING AND SCIENCE			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
ORTEGA OLIVE, NADIA	eeortega@udl.cat	1	
ROMERO FABREGAT, MARIA PAZ	mariapaz.romero@udl.cat	,6	
RUBIO PIQUE, LAURA	laura.rubio@udl.cat	1,7	
SALVIA TRUJILLO, LAURA	laura.salvia@udl.cat	1,7	

## Learning objectives

Once the student has completed the course, the student must be able to:

- Propose innovative foods.
- Analyze the needs of ingredients and technological processes to develop innovative food proposals.
- Develop prototypes in scalable conditions.
- Put into practice the most appropriate sensory analysis techniques in each of the stages of food design, from discriminative tests to consumer studies, passing through sensory shelf life tests.

## Competences

### Basic

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

CB7 That students know how to apply the knowledge acquired and their ability to solve problems in new or little-known environments 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 Capacity for organization and planning.

CG2 Information management capacity.

CG3 Capacity for analysis and synthesis.

CG4 Critical and self-critical capacity.

CG5 Ability to work in a team and to relate to other people from the same or different professional field.

CG6 Problem solving and decision making.

CG8 Ability 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

## **Transverse**

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.

CT3 Propose innovative, creative and entrepreneurial solutions in situations typical of the professional field.

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

CT5 Apply the gender perspective to the tasks of the professional field

## **Specific**

CE1 Analyze and interpret legislative updates on food.

CE4 Identify market trends and opportunities to develop innovative foods.

CE5 Establish relationships between the components and ingredients of food and their effects on the health of consumers.

CE6 Assess the selection of ingredients and the formulation to be able to develop new food products in accordance with current regulations.

CE8 Quantify and check the sensory suitability of new foods using advanced methods.

CE9 Adopt an inter and multidisciplinary perspective in food innovation

CE10 Adopt sustainable strategies in food production

## **Subject contents**

The present subject completes the Food Design and Formulation block and proposes the implementation of the concepts studied in the Food Formulation, Design and Development subjects.

The subject consist on different proposals for the development of an innovative food, justifying the improvements it intends to achieve.

Elaboration of prototypes and selection with economic, quality and food safety and sustainability criteria.

The work will be organized in groups and will be carried out in the Pilot Plant of the Department of Food Technology supervised by a teacher specialized in the type of food selected, who will guide during the development process.

## **Methodology**

### **TEACHING METHODOLOGIES**

Master classes (4h)

Laboratory or pilot plant practices

Group work (oral and written)

Teacher-directed activities

Autonomous work

## Development plan

TRAINING ACTIVITY	Hours devoted to the training activity (*)	Percentage of attendance
Theory classes	4	100
Laboratory practices or pilot plant	20	100
Teacher-directed activities	6	0
Autonomous work	45	0
	75	

## Evaluation

EVALUATION SYSTEM	Weighting
Pilot plant development of the prototypes	60 %
Final Report of practical activities	30 %
Orall presentation	10 %

## Bibliography

SPYROPOULOS, F., LAZIDIS, A., NORTON, I. (2020) Handbook of Food Structure Development.. Ed Royal Society of Chemistry (Print ISBN: 978-1-78801-216-4, PDF ISBN: 978-1-78801-615-5,

EPUB ISBN: 978-1-78801-905-7)

EARLE, M., EARLE, R.; ANDERSON, a. (2001) Food Prodcut Development. (Paperback ISBN: 9781845697228, eBook ISBN: 9781855736399)

MEILGAARD, M .; CIVILLE, G.V.; CARR, B.T. 2006 Sensory evaluation techniques. 4 ed. Ed. CRC Press. Florida (ISBN 978-0849338397)

HOUGH, G (2010) Sensory shelf life estimation of food products. CRC Press. USA. (ISBN 978-1-4200-9291-2).

RESURRECCIÓN, A. (1998) Consumer sensory testing for product development. An Aspen Publication. Maryland-USA. (ISBN 0-8342-1209-9)