



Universitat de Lleida

DEGREE CURRICULUM  
**AUXILIARY SYSTEMS IN THE  
FOOD INDUSTRY**

Coordination: ARANTEGUI JIMENEZ, JAVIER

Academic year 2023-24

## Subject's general information

<b>Subject name</b>	AUXILIARY SYSTEMS IN THE FOOD INDUSTRY			
<b>Code</b>	102591			
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Bachelor's Degree in Agricultural and Food Engineering	3	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	9			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB	PRAULA	TEORIA
	<b>Number of credits</b>	0.6	3	5.4
	<b>Number of groups</b>	1	1	1
<b>Coordination</b>	ARANTEGUI JIMENEZ, JAVIER			
<b>Department</b>	FOOD TECHNOLOGY, ENGINEERING AND SCIENCE			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Catalan / Spanish			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
ARANTEGUI JIMENEZ, JAVIER	javier.arantegui@udl.cat	3	
FONS SOLE, ESTANISLAU	estanislaui.fons@udl.cat	0	
GORDO MURILLO, CECILIA	cecilia.gordo@udl.cat	5	
GRAELL SARLE, JORGE MARIANO	jordi.graell@udl.cat	1	

## Subject's extra information

### Subject/subject in the study plan as a whole

The subject "Auxiliary installations in the food industry", provides technical knowledge and calculation tools for the design and selection of the usual installations in a food industry, such as the installations for: cold, steam generation and control and regulation, among others.

The knowledge imparted in this subject is necessary for a better use of the subjects of Design of processing plants, Projects and Final Work, related to the food production processes that are carried out in the food industries.

### Recommendations

It is advisable to have studied and correctly assimilated the subjects of "Fundamentals of Food Engineering" and "Food Industries" corresponding to the first semester.

## Learning objectives

This subject is not taught in English. Please, check the available information in Catalan or Spanish. In case you need information in English, please contact the teaching staff of the subject.

## Competences

### Basic skills

CB1. That students demonstrate to have and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge coming from the vanguard of his field of study.

CB2. That students know how to apply their knowledge to their work or vocation in a professional way and have the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.

CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant issues of a social, scientific, or ethical nature.

CB4. That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences.

CB5. That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

## General skills

CG1. Ability to prepare, design, draft and sign projects for the construction, refurbishment, repair, conservation, demolition, manufacture, installation, assembly or operation of movable or immovable property which by their nature and characteristics are included in the own technique of agricultural and livestock production (facilities or buildings, farms, infrastructures and rural roads), the agri-food industry (extractive, fermentative, dairy, canning, fruit and vegetable, meat, fishing, salting and, in general, any other dedicated industries to the elaboration and / or transformation, conservation, manipulation and distribution of food products) and gardening and landscaping (urban and / or rural green spaces, parks, gardens, nurseries, urban trees, etc., public or private sports facilities and environments subject to landscape recovery).

CG6. Ability to direct and manage all kinds of agri-food industries, with knowledge of new technologies and quality processes.

CG8. Ability to solve problems with creativity, initiative, methodology and critical reasoning.

CG10. Ability to research and use the rules and regulations relating to its scope of action.

CG12. Ability to work in multidisciplinary and multicultural teams.

## Transversal skills

CT1. Correction in oral and written expression.

CT4. Respect for the fundamental rights of equality between men and women, the promotion of human rights and the values of a culture of peace and democratic values

CT5. Apply the gender perspective to the functions of the professional field

## Specific skills

CEIAA1. Ability to know, understand and use the principles of: Food engineering and technology. Basic food engineering and operations. Food technology. Processes in the agri-food industries. Modeling and optimization. Food quality and safety management. Food analysis. Traceability.

CEIAA2. Ability to know, understand and use the principles of: Engineering of the agri-food industries. Auxiliary equipment and machinery of the agri-food industry. Automation and process control. Engineering of works and facilities. Agro-industrial constructions. Waste management and use.

## Subject contents

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## Methodology

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## Development plan

This subject is not taught in English. Please, check the available information in Catalan or Spanish. In case you need information in English, please contact the teaching staff of the subject.

## Evaluation

This subject is not taught in English. Please, check the available information in Catalan or Spanish. In case you need information in English, please contact the teaching staff of the subject.

## Bibliography

La bibliografia de les matèries tecnològiques requereix una revisió contínua. No obstant això, se citen alguns manuals el contingut dels quals és adequat per al nivell que es pretén de l'estudi dels sistemes auxiliars a les indústries alimentàries.

### **Bibliografia bàsica**

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DIVERSOS AUTORS (1993) Nuevo curso de ingeniería del frío. AMV ediciones. Madrid.

LÓPEZ, A. (1993) Las instalaciones frigoríficas en las industrias agroalimentarias. AMV ediciones. Madrid.

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NAVARRO, J., CABELLO, R., TORRELLA, E. (2003). Fluidos refrigerantes. Tablas y Diagramas. A. Madrid Vicente editores.

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*Instrumentació industrial i control de processos*

[ALTMAN, Wolfgang; MACDONALD, David; MACKAY, Steve \(2005\). Practical Process Control for Engineers and Technicians. Newnes](#)

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[MORRIS Alan S.; LANGARI, Reza \(2012\). Measurement and Instrumentation: Theory and Application. Butterworth-Heineman.](#)

## **Bibliografia complementària**

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