



1. General information

Course: UNIT OPERATIONS IN THE FOOD INDUSTRY
 Type: CORE COURSE
 Degree: 383 - UNDERGRADUATE DEGREE PROGRAMME IN FOOD SCIENCE AND TECHNOLOGY
 Center: 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY
 Year: 2

Code: 58314
 ECTS credits: 6
 Academic year: 2023-24
 Group(s): 22
 Duration: First semester
 Second language:
 English Friendly: Y
 Bilingual: N

Main language: Spanish

Use of additional languages:
 Web site:

Lecturer: PABLO CAÑIZARES CAÑIZARES - Group(s): 22				
Building/Office	Department	Phone number	Email	Office hours
Edificio Enrique Costa / Despacho 9	INGENIERÍA QUÍMICA	3412	pablo.canizares@uclm.es	Wednesday, Thursday and Friday: 9:30 to 10:30 h
Lecturer: FRANCISCO JESUS FERNANDEZ MORALES - Group(s): 22				
Building/Office	Department	Phone number	Email	Office hours
ITQUIMA / 1	INGENIERÍA QUÍMICA	926 05 21 79	fcojesus.fmorales@uclm.es	M-F from 9:00 to 10:00
Lecturer: MARIA TERESA GARCIA GONZALEZ - Group(s): 22				
Building/Office	Department	Phone number	Email	Office hours
Edificio Enrique Costa / Despacho 14	INGENIERÍA QUÍMICA	926052851	teresa.garcia@uclm.es	Monday, Thursday and Friday from 11:30 to 12:30 h

2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

The unit operations are the constituent elements of all the processes of transformation and elaboration of the food industry, due to this reason the graduate in food science and technology must know the bases of design and operation of the unit operations. Both con

The subject basic operations of the food industry belongs to the subject of the same name and is located in the food technology module.

4. Degree competences achieved in this course

Course competences

Code	Description
E09	To know, optimize and control the production and conservation food processes
E10	To acquire knowledge on equipments and systems for the automatization and control of food processing
G02	To possess a correct oral and written communication. To transmit information, ideas, problems and solutions to a both specialized and not specialized public.
G07	To possess ability of organization and planning, initiative, entrepreneurship and aptitude to be employed in teamworks. To possess capacity of resolution of specific problems of the professional area and to develop the critical reasoning and decision making.
G09	To develop the motivation for quality, the capacity to adapt to new situations and the creativity.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

To have the scientific and technical knowledge necessary for the design of the equipment and for the operation of the Unit Operations of Chemical Engineering applied to the food industry.
 To know the theoretical basis of Unit Operations in the Food Industry based on the flow of fluids, heat transfer and the simultaneous flow of fluids and heat transfer.
 To develop in the student the capacity of taking action to propose and solve concrete problems of the food industry, as well as of interpreting the obtained results.

6. Units / Contents

Unit 1: Technological processes in the food industry
 Unit 2: Fluid dynamics
 Unit 3: Filtration
 Unit 4: Centrifugation
 Unit 5: Evaporation
 Unit 6: Drying process

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Workshops or seminars [ON-SITE]	Case Studies		0.1	2.5	Y	N	
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities		0.5	12.5	Y	Y	
Final test [ON-SITE]	Combination of methods		0.14	3.5	Y	N	
Study and Exam Preparation [OFF-SITE]	Combination of methods		3.6	90	Y	N	
Class Attendance (theory) [ON-SITE]	Lectures		0.9	22.5	N	-	
Class Attendance (practical) [ON-SITE]	Problem solving and exercises		0.76	19	N	-	
Total:			6	150			
Total credits of in-class work: 2.4							Total class time hours: 60
Total credits of out of class work: 3.6							Total hours of out of class work: 90

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Practicum and practical activities reports assessment	20.00%	20.00%	
Final test	70.00%	80.00%	
Assessment of problem solving and/or case studies	10.00%	0.00%	
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

In the final test, with a weight of 70%, a minimum of 4/10 will be required in each of the parts (theory/problems).

To pass the laboratory practices with a weight of 20%, a minimum of 4/10 will be required in each of the parts (practice notebook/exam).

To pass the subject through the continuous assessment system, a grade equal to or greater than 4 will be required in each of the activities and an average grade equal to or greater than 5.

Non-continuous evaluation:

It will consist of a final test, corresponding to 80% of the mark, which will be weighted with the practical qualification, 20%.

Both in the final test and in the laboratory, a minimum of 4/10 will be required in each of the parts and an average grade equal to or greater than 5/10.

Specifications for the resit/retake exam:

It will consist of a final test, corresponding to 80% of the mark, which will be weighted with the practical qualification, 20%.

Both in the final test and in the laboratory, a minimum of 4/10 will be required in each of the parts and an average grade equal to or greater than 5/10.

Specifications for the second resit / retake exam:

It will consist of a final test, corresponding to 80% of the mark, which will be weighted with the practical qualification, 20%.

Both in the final test and in the laboratory, a minimum of 4/10 will be required in each of the parts and an average grade equal to or greater than 5/10.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	City	ISBN	Year	Description
Brennan, J.G., Butters, J.R., Cowell, N.D., Lilly, A.E.V.:	Las operaciones de la Ingeniería de los Alimentos	Acribia			1980	

Rodríguez, F., Aguado J., Calles, J. A., Cañizares, P., López, B., Santos, A., Serrano, D.	Ingeniería de la industria Alimentaria. Volumen II. Operaciones de procesado	Síntesis	2002
Rodríguez, F., Aguado J., Calles, J. A., Cañizares, P., López, B., Santos, A., Serrano, D.	Ingeniería de la industria Alimentaria. Volumen III. Operaciones de conservación de alimentos.	Síntesis	2002
Aguado J., Calles, J. A., Cañizares, P., López, B., Rodríguez, F., Santos, A., Serrano, D.	Ingeniería de la industria alimentaria. Volumen I. Conceptos Básicos.	Síntesis	2002