UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: MICROBIOLOGY
Code: 58305
Type: CORE COURSE
ECTS credits: 6
Degree: 383 - UNDERGRADUATE DEGREE PROGRAMME IN FOOD SCIENCE AND TECHNOLOGY
Academic year: 2023-24
Center: 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY
Group(s): 22
Year: 1
Duration: C2
Main language: Spanish
Second language: Spanish
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **MARIA AREVALO VILLENA** - Group(s): **22**

Building/Office	Department	Phone number	Email	Office hours
Marie Curie	Q. ANALÍTICA Y TGIA. ALIMENTOS	3423	maria.arevalo@uclm.es	

Lecturer: **PILAR FERNANDEZ-PACHECO RODRIGUEZ** - Group(s): **22**

Building/Office	Department	Phone number	Email	Office hours
Edificio Sabatini. Despacho 26	Q. ANALÍTICA Y TGIA. ALIMENTOS	5486	Pilar.FRodriguez@uclm.es	

Lecturer: **BEATRIZ GARCÍA BÉJAR BERMEJO** - Group(s): **22**

Building/Office	Department	Phone number	Email	Office hours
	Q. ANALÍTICA Y TGIA. ALIMENTOS		Beatriz.GBermejo@uclm.es	

2. Pre-Requisites

Not established

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

Initiate the student in the discipline of general Microbiology, guiding him towards those microorganisms of interest in Food Science and Technology involved in food alterations and toxiinfections and Biotechnology

4. Degree competences achieved in this course

Course competences

Code	Description
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
E02	To acquire basic knowledge in biology, biochemistry, physiology and microbiology to allow the study of the nature of foods, causes of their alteration and fundamentals of their production, as well as their role in human nutrition and dietetics
G01	To develop the aptitude to gather and interpret information and data to issue critical judgments that include a reflection on relevant topics of social, scientific or ethical nature.
G02	To possess a correct oral and written communication. To transmit information, ideas, problems and solutions to a both specialized and not specialized public.
G05	To understand and to use the English language, both written and spoken, applied to the area of the Food Science and Technology. (To be able to acquire this hability, a series of actions that will be specified in every module will be peformed).
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

Achieve that the student acquires the basic terminology of Microbiology and that knows how to use it.

Know the microbiological techniques and methods

Know the concepts of metabolism and biochemistry of microorganisms.

Acquire the basic knowledge of pathogenic and / or spoliage microorganisms that can, most frequently, contaminate food.

Learn to work in a microbiology laboratory and interpret the experimental results obtained.

Design the microbiological analyzes for the isolation and identification of bacteria, molds and yeasts.

Initiate the student in the foundations of Microbiology

Ensure that the student is able to search, select and interpret information in the field of biotechnology.

To provoke the capacity of criticism and discussion towards new topics related to the matter

6. Units / Contents

Unit 1: Introduction to Microbiology
Unit 2: The microbial cell. Prokaryotes and eukaryotes
Unit 3: Microscopy. Types of microscopes and stains
Unit 4: Microbial growth
Unit 5: Microbial cultures. Growth conditions, culture media
Unit 6: Growth control. Physical and chemical methods
Unit 7: Microbial metabolism. Processes for obtaining and consuming energy
Unit 8: Taxonomy. Microbial classification and nomenclature. Main groups in food science

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	CB02 E02 G01 G05	1	25	Y	N	
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	CB02 E02 G01 G02 G05	0.8	20	Y	Y	
Workshops or seminars [ON-SITE]	Workshops and Seminars	CB02 E02 G01 G02 G05 G07 G09	0.24	6	Y	N	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	CB02 E02 G02 G05 G07 G09	0.1	2.5	Y	N	
Final test [ON-SITE]	Assessment tests	CB02 G02	0.08	2	Y	Y	
Project or Topic Presentations [ON-SITE]	Individual presentation of projects and reports	CB02 E02 G01 G02 G05 G07	0.12	3	Y	N	
Study and Exam Preparation [OFF-SITE]	Combination of methods	E02 G01 G02 G05 G07	0.76	19	Y	N	
Writing of reports or projects [OFF-SITE]	Combination of methods	G01 G02 G05 G09	2.9	72.5	Y	N	
		Total:	**6**	**150**			
		Total credits of in-class work: 2.34					**Total class time hours: 58.5**
		Total credits of out of class work: 3.66					**Total hours of out of class work: 91.5**

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
Projects	15.00%	0.00%	Preparation and presentation of a work related to some area of Microbiology that has an impact nowdays. Other works may be proposed depending on the development of the course.
Practical exam	15.00%	0.00%	Evaluation of the laboratory practices.
Portfolio assessment	0.00%	30.00%	The portfolio will be made up of the activities carried out throughout the course, which will be clearly explained on the Moodle virtual platform
Theoretical exam	70.00%	70.00%	The student must demonstrate the acquired knowledge of the entire subject (purely theoretical parts, applied parts, problem solving and exercises, practical assumptions, etc.)
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:

To be able to average all the evaluable parts, a minimum of 4 must be obtained in each of them.
The course will only be passed if, once that average has been made, the resulting grade is at least 5.
The information related to each of the evaluable activities will be available in the moodle computer application.

Non-continuous evaluation:

To be able to average all the evaluable parts, a minimum of 4 must be obtained in each of them.
The course will only be passed if, once that average has been made, the resulting grade is at least 5.
The information related to the activities that make up the portfolio will be available in the moodle computer application.
The delivery of the portfolio can be made until the day before the date of the official call through the virtual moodle platform

Specifications for the resit/retake exam:

They do not exist

Specifications for the second resit / retake exam:

They do not exist

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	Citv	ISBN	Year	Description
Brock, Thomas D.	Brock, biología de los microorganismos	Prentice Hall		84-89660-36-0	2012	
Hudson, Barbara K.	Explorations in microbiology : a discovery-based approach	Prentice Hall		0-13-533589-2	1999	
Ingraham, John L.	Introducción a la microbiología			84-291-1869-1	2004	
Prescott, Lansing M.	Microbiology	McGraw-Hill		0-07-112259-1	2002	
Tortora, Gerard J.	Introducción a la microbiología	Editorial Médica Panamericana		978-950-06-0740-7	2007	
Tortora, Gerard J.	Microbiology : an introduction	Benjamin Cummings		0-321-58420-1	2010	
Wistreich, George A.	Microbiology laboratory : fundamentals and applications	Prentice-Hall		0-13-010074-9	2003	