



# UNIVERSIDAD DE CASTILLA - LA MANCHA

## GUÍA DOCENTE

### 1. General information

**Course:** THE NATURAL ENVIRONMENT I: TEACHING PHYSICS AND CHEMISTRY  
**Type:** CORE COURSE  
**Degree:** 395 - UNDERGRADUATE DEGREE IN PRIMARY EDUCATION (TO)  
**Center:** 104 - FACULTY OF EDUCATION OF TOLEDO  
**Year:** 3

**Code:** 46323

**ECTS credits:** 6

**Academic year:** 2023-24

**Group(s):** 40 41

**Duration:** C2

**Second language:** English

**English Friendly:** Y

**Bilingual:** N

**Main language:** Spanish

**Use of additional languages:**

**Web site:**

Lecturer: <b>GABRIEL RODRIGUEZ RODRIGUEZ</b> - Group(s): <b>40 41</b>				
Building/Office	Department	Phone number	Email	Office hours
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### 2. Pre-Requisites

Not established

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

Not established

### 4. Degree competences achieved in this course

#### Course competences

Code	Description
1.2.1.II.01	Understand the basic principles and fundamental laws of experimental sciences (Physics, Chemistry, Biology and Geology).
1.2.1.II.02	Know the curriculum of Primary Education concerning these sciences.
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CG09	Value individual and collective responsibility for a sustainable future.

### 5. Objectives or Learning Outcomes

#### Course learning outcomes

##### Description

Solve questions, exercises and problems related to the principles, laws and most important physicochemical theories.  
Appreciate physics and chemistry as areas that help to preserve the environment and to improve living human conditions.  
Manage operations of physical quantities, units, and conversion systems.  
Plan strategies for developing learning activities in the fields of Physics and Chemistry.  
Assimilate the language and terminology of Physics and Chemistry, which would allow students to understand the main theoretical and practical paradigms of these experimental sciences.  
Interpret the physicochemical phenomena that surround us in such a way to facilitate their future work as teachers.  
Recognize the historical Science-Technology-Society influence, assessing their importance and cultural significance.  
Identify the location of the Earth and its movements in the Solar System, as well as its location in space.

#### Additional outcomes

### 6. Units / Contents

#### Unit 1:

Unit 1.1

Unit 1.2

#### Unit 2:

Unit 2.1

Unit 2.2

Unit 2.3

Unit 2.4

Unit 2.5

Unit 2.6

#### Unit 3:

Unit 3.1

Unit 3.2

#### Unit 4:

Unit 4.1

Unit 4.2

Unit 4.3

Unit 5:  
 Unit 5.1  
 Unit 5.2  
 Unit 6:  
 Unit 7:  
 Unit 8:  
 Unit 9:

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	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.96	24	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.32	8	Y	N	
Writing of reports or projects [OFF-SITE]	Cooperative / Collaborative Learning	1.2.1.II.01 1.2.1.II.02 CB01 CG09	1.4	35	Y	N	
Writing of reports or projects [OFF-SITE]	Cooperative / Collaborative Learning	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.8	20	Y	Y	
Problem solving and/or case studies [ON-SITE]	Assessment tests	1.2.1.II.01 1.2.1.II.02 CB01 CG09	1.04	26	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	1.2.1.II.01 1.2.1.II.02 CB01 CG09	1.4	35	N	-	
Final test [ON-SITE]	Assessment tests	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.08	2	Y	Y	
<b>Total:</b>			<b>6</b>	<b>150</b>			
<b>Total credits of in-class work: 2.4</b>			<b>Total class time hours: 60</b>				
<b>Total credits of out of class work: 3.6</b>			<b>Total hours of out of class work: 90</b>				

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
Assessment of active participation	10.00%	0.00%	
Final test	30.00%	50.00%	
Assessment of problem solving and/or case studies	10.00%	20.00%	
Oral presentations assessment	30.00%	30.00%	
Assessment of problem solving and/or case studies	10.00%	0.00%	
Assessment of problem solving and/or case studies	10.00%	0.00%	
<b>Total:</b>	<b>100.00%</b>	<b>100.00%</b>	

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).

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	24
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	8
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	35
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	20
Problem solving and/or case studies [PRESENCIAL][Assessment tests]	35
Study and Exam Preparation [AUTÓNOMA][Self-study]	26
Final test [PRESENCIAL][Assessment tests]	2
Global activity	
Activities	hours
Problem solving and/or case studies [PRESENCIAL][Assessment tests]	35
Class Attendance (theory) [PRESENCIAL][Lectures]	24
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	35
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	20
Final test [PRESENCIAL][Assessment tests]	2
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	26
<b>Total horas: 150</b>	

## 10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	City	ISBN	Year	Description
Isabel Pilar Gallardo	Física y Química , 2 tomos 3º ESO y 4º ESO	Oxford Educación Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado del Ministerio de Educación, Cultura y Deporte.				
Jesús M. Muñoz Calle Luis Ramírez Vicente Joaquín Recio Miñarro José Luis San Emeterio Peña Inmaculada Sevilla Pascual José Villasuso Gato	4º ESO Física y Química  <a href="http://recursostic.educacion.es/secundaria/edad/4esofisicaquimica/">http://recursostic.educacion.es/secundaria/edad/4esofisicaquimica/</a>				2010	Centro para la innovación y el desarrollo de la educación a distancia.
Jesús M. Muñoz Calle Luis Ramírez Vicente Joaquín Recio Miñarro Carlos Palacios Gómez Mª Josefa Grima Rojas Javier Soriano Falcó Enric Ripoll Mira José Luis san Emeterio Peña	3º ESO Física y Química  <a href="http://recursostic.educacion.es/secundaria/edad/3esofisicaquimica/">http://recursostic.educacion.es/secundaria/edad/3esofisicaquimica/</a>				2010	Centro para la innovación y el desarrollo de la educación a distancia.
Moreno Gómez, E.	Enseñanza de la Ciencia en el aula  CUALQUIER par de libros de Física y Química de 3º y 4º de ESO	CSIC		978-84-00-09299-3	2014	Los contenidos son los mismos y se utilizarán COMO SOPORTE AUXILIAR/REFERENCIA, no como libro de texto Para la preparación de los trabajos grupales, se recomiendan libros de Bachillerato o de primeros cursos de carrera como Tipler, Serway...
Ana Rivero García, Rosa Martín del Pozo, Emilio Solís Ramírez, Rafael Porlán Ariza	Didáctica de las ciencias experimentales en educación primaria	Editorial Síntesis, S.A.		8491710620	2017	
José Miguel Vílchez González	Didáctica de las Ciencias para Educación Primaria: I. Ciencias del espacio y de la Tierra	Ediciones Pirámide		978-8436845143	2021	
PEDRO CAÑAL DE LEÓN	Didáctica de las Ciencias Experimentales en Educación Primaria	Paraninfo		8428337349	2016	