



DETAILS OF THE SUBJECT

Title (of the subject): DIDACTICA DE LAS CIENCIAS EXPERIMENTALES EN EDUCACIÓN PRIMARIA

Code: 100810

Degree/Master: GRADO DE EDUCACIÓN PRIMARIA

Year: 3

Name of the module to which it belongs: ENSEÑANZA Y APRENDIZAJE DE LAS CIENCIAS EXPERIMENTALES

Field: DIDÁCTICA DE LAS CIENCIAS EXPERIMENTALES EN EDUCACIÓN PRIMARIA

Character: OBLIGATORIA

Duration: ANUAL

ECTS Credits: 9

Classroom hours: 90

Face-to-face classroom percentage: 40%

Non-contact hours: 135

Online platform:

TEACHER INFORMATION

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Specifics of the subject

REQUIREMENTS AND RECOMMENDATIONS

Prerequisites established in the study plan

None.

Recommendations

None specified.

SKILLS

- | | |
|-------|--|
| CE1 | To know the curricular areas of Primary Education, the interdisciplinary relationship between them, the evaluation criteria, the body of didactic knowledge around the respective teaching and learning processes. In addition, to know and understand the contents that constitute these curricular areas and that allow the achievement of the basic competences in Primary Education. |
| CE2 | To design, schedule and evaluate teaching and learning processes, both individually and in cooperation with teachers and professionals at the centre. |
| CE3 | To effectively approach language learning situations in multicultural and multilingual contexts. To promote reading and critical commentary of texts from the different scientific dominions and cultural contents in the academic curriculum. |
| CE5 | To foment harmonious relationships inside and outside the classroom and to tackle conflict resolution in a peaceful way. To know how to systematically observe apprenticeship and coexistence contexts as well as to reflect about them. |
| CE8 | To appreciate culture and knowledge, and maintain an autonomous and critical relationship with respect to knowledge, values and social institutions both private and public. |
| CE9 | To recognise the worth of the individual and collective responsibility in achieving a sustainable future and acquire the necessary training for the promotion of a healthy life. |
| CE10 | To think about the practices in the classroom in order to innovate and improve the educational work. To acquire habits and skills for the autonomous and cooperative learning and to promote it with students. |
| CE11 | To know and apply the technologies of the information and communication in classrooms . Selectively distinguish audiovisual information that contributes to the learning processes, civic formation and cultural richness. |
| CE14 | To create an updated view of the natural and social world. |
| CM4.1 | Understand the basic principles and fundamental laws of experimental sciences (Physics, Chemistry, Biology and Geology). |
| CM4.2 | To know the school curriculum of these Sciences. |
| CM4.3 | To consider and to solve problems which deal with sciences in daily life |
| CM4.4 | To recognise the worth of sciences as a cultural fact. |
| CM4.5 | To acknowledge mutual influence between science, society and technological development, as well as the pertinent civic conducts, in order to ensure a sustainable future. |
| CM4.6 | To develop and evaluate curriculum contents through appropriate didactic resources and promote the acquisition of basic competences among students. |

OBJECTIVES

- To acquire skills and competences for professional development of the student.
- To understand the basic principles, fundamental laws, scientific methodology and teaching models of experimental science and its impact on educational practice.
- To design and use appropriate teaching resources for teaching experimental sciences and also implement procedures and suitable activities in learning contexts.

- Planning and evaluating teaching-learning processes in Experimental Science in Primary Education.

CONTENT

1. Theory contents

Block 1: Scientific and didactic foundations in science learning.

Block 2: Curriculum of sciences in the legislative frame.

Block 3: The Area of Experimental Sciences in Primary Education.

Block 4: Design and realization of projects and curricular materials.

2. Practical contents

- Fulfillment of didactic resources related to the thematic units programmed.
- Study and commentary of basic documents.
- Programming, exposition and debates of specific themes.
- Laboratory practical sessions.
- Field practical sessions.

METHODOLOGY

General clarifications on the methodology. (optional)

Theoretical and practical approach to the contents.

Active and participative methodology with the purpose of facilitating the implication of the students and favouring the development of their critical and creative ability to acquire competences.

Methodological adaptations for part-time students and students with disabilities and special educational needs

Face-to-face activities

Activity	Large group	Medium group	Total
<i>Assessment activities</i>	4	-	4
<i>Excursions</i>	6	-	6
<i>Group presentation</i>	5	5	10
<i>Group work (cooperative)</i>	5	5	10
<i>Laboratory</i>	-	20	20
<i>Lectures</i>	30	-	30
<i>Text analysis</i>	10	-	10
Total hours:	60	30	90

Not on-site activities

Actividad	Total
<i>Analysis</i>	10
<i>Bibliographic consultations</i>	15
<i>Finding information</i>	15
<i>Group work</i>	25
<i>Self-study</i>	70
Total hours:	135

WORK MATERIALS FOR STUDENTS

Dossier

EVALUATION

Skills	Tools		
	Assignments and projects	Oral presentations	Short answer tests
CE1	x		
CE10	x		
CE11	x		
CE14	x		x
CE2	x		
CE3	x		
CE5	x		
CE8	x		
CE9	x		x
CM4.1	x		x
CM4.2	x	x	x
CM4.3	x		x
CM4.4	x	x	x
CM4.5	x	x	x
CM4.6	x	x	
Total (100%)	45%	10%	45%
Minimum grade.(*)	5	5	5

(*) Minimum grade necessary to pass the subject

Clarifications on the methodology for part-time students and students with disabilities and special educational needs:

Both calls for exams corresponding to the same academic year.

Qualifying criteria for obtaining honors: : *Obtener más de 9,5 sobre 10 en la nota final de la asignatura.*

BIBLIOGRAPHY

1. Basic Bibliography:

- BENLLOCH, M. (comp.) (2001).- La educación en ciencias: ideas para mejorar su práctica.- Paidós
- CANDELA, A. (1999).- Ciencia en el aula. Los alumnos entre la argumentación y el consenso.- Paidós
- CARRETERO, M. (2000).- Construir y enseñar las ciencias experimentales.- AIQUE
- GARRIDO, J. M.; GALDON, M. (2003).- Ciencias de la naturaleza y su didáctica.- GEU
- JIMENEZ, M. P. (coord.) (2003).- Enseñar ciencias.- Graó
- KAUFMAN, M.; FUMAGALLI, L. (comp) (1999).- Enseñar ciencias naturales. Reflexiones y propuestas

didácticas.- Paidós

- ORDEN de 10 de agosto de 2007, por la que se desarrolla el currículo correspondiente a la Educación Primaria en Andalucía (BOJA nº 171, Sevilla 30 de agosto 2007)

- PERALES, F. J.; CAÑAL, P. (dir.) (2000).- Didáctica de las ciencias experimentales.- Marfil

- POZO, J.I.; GOMEZ, M. A. (1998).- Aprender y enseñar ciencia.- Morata

- PUJOL, M. R. (2003).- Didáctica de las Ciencias en la Educación Primaria.- Síntesis

- REAL DECRETO 1513/2006, de 7 de diciembre, por el que se establecen las enseñanzas mínimas de la Educación primaria (BOE de 8 de diciembre)

- SAEZ, M. J. (2007).- La cultura científica en la escuela.- Univ. de Valladolid

- SANCHEZ, G. (coord.) (2005).- Didáctica de las ciencias experimentales (I y II).- DM

2. Further reading:

None.

COORDINATION CRITERIA

- Common evaluation criteria
- Outputs Organization
- Selection of common competencies

SCHEDULE

Period	Activity						
	Assessment activities	Excursions	Group presentation	Group work (cooperative)	Laboratory	Lectures	Text analysis
1# Fortnight	0	0	0	0	0	2	0
2# Fortnight	0	0	0	0	2	3	0
3# Fortnight	0	0	0	0	2	3	2
4# Fortnight	0	0	5	5	2	3	2
5# Fortnight	2	0	0	0	2	3	0
6# Fortnight	0	0	0	0	2	2	2
7# Fortnight	0	0	0	0	0	2	2
8# Fortnight	0	0	0	0	0	0	2
9# Fortnight	0	0	5	5	2	2	0
10# Fortnight	2	6	0	0	2	3	0
11# Fortnight	0	0	0	0	2	3	0
12# Fortnight	0	0	0	0	2	2	0
13# Fortnight	0	0	0	0	2	2	0
Total hours:	4	6	10	10	20	30	10