SUBJECT TEACHING GUIDE

G555 - Teaching the Natural Environment I

Double Degree in Teaching in Early Childhood Education and Primary Education
Degree in Primary Education Teaching

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Double Degree in Teaching in Early Childhood Education and Primary Education			Type and Year	Compulsory. Year 3 Compulsory. Year 3
Faculty	School of Teacher Training				
Discipline	Subject Area: Teaching and Learning of Experimental Sciences Module: Training in Teaching and the Discipline				
Course unit title and code	G555 - Teaching the Natural Environment I				
Number of ECTS credits allocated	6	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. FISICA APLICADA
Name of lecturer	ALFREDO FRANCO PEREZ
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Other lecturers	IGNACIO HERNANDEZ CAMPO MANUEL DE PEDRO DEL VALLE DAVID GONZALEZ ALONSO

3.1 LEARNING OUTCOMES
- To recognize the structure, elements and essential aspects of the curricula in physics and chemistry and its relationship with other sciences.
- Present problematic situations and design activities in the field of teaching of these sciences and know how to solve the problems related to this subject.
- To integrate the content of these sciences in our natural, social and cultural context
- To develop appropriate teaching resources to the corresponding stage and promote the significant learning related to these sciences.
- To train the teachers to promote the school research.
- To apply the didactic knowledge to design processes, development and evaluation of the curricula.
- To recognize and assess the importance of scientific literacy as the basis of their personal development and for use in the classroom.

4. OBJECTIVES
To promote the exploratory activity of students through situations related to the knowledge of the environment , in particular the physical environment, living beings and knowledge of the own body.
To know the main contributions of the Natural Sciences to the primary education curricula.
To develop a critical interest in the study of science , to help them understand the importance of Natural Science as part of culture, their impacts and their interactions (CTSA relations, science, technology, society and environment), in particular, the role that science plays in our lives, in the transformation of the environment, etc.
To know the basics of didactic of experimental sciences to design educational interventions that facilitate the development of scientific knowledge.
To know the characteristics of the main difficulties in the teaching-learning process of experimental sciences, as well as the most common characteristics of the knowledge of the students (prior knowledge) on the different aspects in the area of experimental sciences.
To train students in solving real problems of Experimental Sciences (Physics and Chemistry) associated with real contexts.
To promote scientific curiosity of students and their interest in experimental sciences
To understand the importance of the development of scientific literacy in the population to know the main scientific and technological phenomena and their social and personal repercussions.

6. COURSE ORGANIZATION	
CONTENTS	
1	IMPORTANCE OF THE SCIENTIFIC-DIDACTICAL EDUCATION IN SCIENCE. 1. Introduction to science. 2. Scientific education and Scientfic didactics.
2	THE PHYSICAL PROCESSES. 2. Introduction to Physics. Movement and Forces. 3. Work and Energy. 4. Heat and Temperature 5. Waves and Light. 6. Electricity and Magnetism. 7. Fluids.
3	THE CHEMICAL PROCESSES. 8. Introduction to Chemistry. Basic Concepts. 9. The Chemical processes. 10. The structure of Matter. 11. Chemical reactions. Stoichiometry. Dissolutions. 12. The Periodic Table. 13. The Water. 14. The Chemical Bond.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Theoretical and practical exam	Written exam	Yes	Yes	60,00
Laboratory practices	Laboratory evaluation	No	No	20,00
Classroom tasks	Work	No	Yes	20,00
TOTAL				100,00

Observations

ORTHOGRAPHY:
It is understood that university students have assumed the linguistic abilities in relation to oral and written expression. Therefore, it is essential and mandatory the correct spelling (spelling, stress and punctuation), grammar and lexical in the works and exams carried out as an essential condition to pass the subject.

PLAGIARISM:
The fraudulent performance of the tests or evaluation activities will directly result in the mark '0' in the subject in the corresponding convocatory, thereby invalidating any mark obtained in all evaluation activities for the extraordinary convocatory.

CITATION RULES:
Following the guidelines set by the Center Board, all academic papers will be used as citation criteria APA standards. Through the link below you can access the help resources offered by the BUC in relation to these standards:
http://web.unican.es/buc/recursos/guias-y-tutoriales/guia?g=28

QUALIFICATION IN CASE OF FAILING TO EXCEED THE MINIMUM MARK IN ANY TEST:
If a student does not obtain the minimum mark required to pass an evaluation test, the overall mark of the subject will be the lowest between 4.9 and the weighted average of all the assessment tests, as established in article 35 of the Regulation of the evaluation processes at the University of Cantabria.

CONTINUOUS EVALUATION:
As described in the evaluation methodology, the students will have been evaluated for 40% of the subject before finishing classes, adding the part of laboratory practices plus class assignments. In this way, it complies with the provisions of Article 17 of the Regulations of the evaluation processes of the University of Cantabria ('at the end of the class period, the student must have carried out evaluation activities whose weight is at least 40% of the final grade of the course).

EXTRAORDINARY CALL:
Students who do not pass the subject in the ordinary call will have an extraordinary exam similar to the final exam of the ordinary call, whose value will be 80% of the final grade. The other 20% corresponds to the non-recoverable part that has been obtained throughout the course.

Observations for part-time students

Part-time enrollment students have the right to a one-time assessment, as established in article 24 of the Regulation of the evaluation processes of the University of Cantabria. The student may undergo a process of single evaluation. The single evaluation will entitle the student to obtain the same mark as the students who are subject to continuous evaluation. The single assessment may consist of an exam and/or the delivery of work, being able to establish, exceptionally, the obligation to attend and pass certain activities face-to-face (laboratory classes, clinical practices, seminars, etc.).

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

CAÑAS, A., MARTIN-DIAZ, M.J. y NIEDA, J. (2007). Competencia en el conocimiento y la interacción con el mundo físico. La competencia científica. Madrid. Alianza Editorial.

GIL- PÉREZ, D. (1986). La metodología científica y la enseñanza de las ciencias: unas relaciones controvertidas. Enseñanza de las Ciencias, 4 (2), 111-121.

PERALES, F. J. y CAÑAL, P. (2000). Didáctica de las ciencias experimentales. Teoría y práctica de la enseñanza de las ciencias. Alcoy: Marfil.

Física para la ciencia y la tecnología (5ª Edición). VOLÚMENES 1 y 2. Paul A. Tipler, Gene Mosca. Editorial Reverté.

Química. Un proyecto de la ACS (American Chemical Society). Editorial Reverté.