

SUBJECT TEACHING GUIDE

G506 - Teaching the Natural Environment

Degree in Early Childhood Education

Academic year 2021-2022

| 1. IDENTIFYING DATA | | | | | |
|----------------------------------|--|------------------|--------------------|------------------|--------------------|
| Degree | Degree in Early Childhood Education | | | Type and Year | Compulsory. Year 2 |
| Faculty | School of Teacher Training | | | | |
| Discipline | Subject Area: Learning of Natural Sciences, Social Sciences and Mathematics Module: Training in Teaching and the Discipline | | | | |
| Course unit title and code | G506 - Teaching the Natural Environment | | | | |
| 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. CIENCIAS DE LA TIERRA Y FISICA DE LA MATERIA CONDENSADA | | | | |
| Name of lecturer | JAIME BONACHEA PICO | | | | |
| E-mail | jaime.bonachea@unican.es | | | | |
| Office | Facultad de Ciencias. Planta: + 2. DESPACHO 2010 (2010) | | | | |
| Other lecturers | JOSE MARIA FERNANDEZ LOPEZ JOSE MARIA RABADAN VERGARA | | | | |

3.1 LEARNING OUTCOMES

- Recognize and evaluate the magnitude of scientific literacy as the basis of their personal development and their application in the classroom.
- To recognize the structure, elements and essential aspects of the curriculum in these sciences and their relationship with others.
- Propose problematic situations and design activities in the field of teaching of natural sciences and clear up problems related to this topic.
- Integrate the subject matter of these sciences in our natural, social and cultural context.
- Work out appropriate teaching resources to stage and promote meaningful learning related to the science.
- Qualify teachers to encourage scholarl research.
- Apply the didactic knowledge to plan the design, development and curriculum evaluation.

4. OBJECTIVES

- Students are able to understand the elementary principles and fundamental laws of Experimental Sciences (Physics, Chemistry, Biology and Geology).
- To know the contribution of Natural Sciences in the Childhood Education curriculum.
- Students should be able to formulate and resolve problems associated with science in everyday life.
- Students should be able to integrate the content of natural science in our natural, social and cultural context.
- Students must recognize the mutual influence between science, society and technology development, as well as relevant civic behavior, to ensure a sustainable future.
- Develop and evaluate curriculum subject-matters through appropriate didactic resources and contribute to the acquisition of basic skills in students.
- The attitude of seeking educational resources in all contexts where future teachers taught their classes in order to create a perdurable understanding in students.
- Note that much of the knowledge related to the natural environment can be acquired or strengthened outside the classroom.
- Awaken or encourage scientific curiosity in students and their general interest in the natural sciences.
- Present the students unusual career opportunities in the field of teaching of experimental sciences.
- Students will be able to develop appropriate teaching resources to stage and promote meaningful learning.
- Train teachers to promote scholar research.
- The future teacher is able to recognize and appreciate the importance of scientific literacy as the basis of their personal development and their use in the classroom.

6. COURSE ORGANIZATION

| CONTENTS | |
|----------|---|
| 1 | The value of science education in today's society. Fundamentals of Natural Science Teaching. The Natural Sciences and Environmental Education in the curriculum of Early Childhood. |
| 2 | Didactic teaching issues of the structure and diversity of matter. From the atom to compounds and their properties. The bind between atoms. The significance of water in the life. |
| 3 | Didactic issues in teaching Solar System and Geology. |
| 4 | Didactic issues in the teaching of the evolution of living beings and Biology. |

7. ASSESSMENT METHODS AND CRITERIA

| Description | Type | Final Eval. | Reassessn | % |
|--|--|-------------|-----------|---------------|
| The team work consist in developing a research methodology to work Science teaching in the early childhood classroom. Applying the scientific method, the student will work some of the units included in the early childhood education curriculum. | Work | No | Yes | 20,00 |
| The written exam will consist of questions related to the theoretical and practical aspects developed during the course. | Written exam | Yes | Yes | 40,00 |
| Laboratory practices are compulsory. A portfolio containing all the laboratory work developed during the course must be provided for evaluation. | Laboratory evaluation | No | No | 25,00 |
| It comprises all the activities developed throughout the course, which should be delivered in the dates and form indicated by the teacher. | Activity evaluation with Virtual Media | No | No | 15,00 |
| TOTAL | | | | 100,00 |
| Observations | | | | |
| <p>Laboratory practices require the use of particular infrastructures and materials, which are available at specific times throughout school term. Due to the intrinsic characteristics of such practices, they can not be performed at different periods to the established. The use of lab coat is recommended.</p> <p>In addition, to laboratory practices, whenever possible, didactic external activities, related to the natural environment, such as school trips or visits to museums, could be carried out. These activities will be optional.</p> <p>A minimum mark of 4.5 is required in the written exam to pass the subject. If the minimum mark is not reached, the overall mark shall be the lowest value between 4.9 and the weighted average of all the assessment tests.</p> <p>GRAMMAR: spelling, accentuation and punctuation, grammar and lexical correction is essential and compulsory in the work and exams, as an essential condition to pass the course.</p> <p>PLAGIARISM: regarding the fraudulent conduct (plagiarism) of the assessment tests, the qualification will be adjusted to the established in the article 54.1 of the Regulation of the assessment processes in the University of Cantabria: 'The fraudulent realization of the tests or assessment activities will directly involve the grade of '0' in the subject'.</p> <p>CITATION: APA rules are assumed as citation criteria for all academic works : http://web.unican.es/buc/recursos/guias-y-tutoriales/guia?g=28</p> | | | | |
| Observations for part-time students | | | | |
| <p>Partial-time students must take the final exam, to delivery a portfolio including laboratory practices and other activities proposed by the teacher, as well as a number of substitute activities of the group work.</p> | | | | |

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Curtis, H., Barnes, N.S., Schnek, A. & Massarini, A. (2008) - Biología. Editorial Médica Panamericana, Buenos Aires: 1160 pp.

Delors, J. (Coord.) (1996) - La educación encierra un tesoro. Informe a la UNESCO de la Comisión Internacional sobre la educación para el siglo XXI. Santillana, Ediciones UNESCO, Madrid.

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

Monroe, J.S., Wicander, R. & Pozo, M. (2008) - Geología. Dinámica y evolución de la Tierra. Paraninfo Cengage Learning, Madrid: 726 pp.

Perales Palacios, F.J. & Cañal de León, P. (2000) - Didáctica de las Ciencias Experimentales. Colección Ciencias de la Educación. Marfil, Alcoy: 704 pp.

Rocard, M. Csermely, P., Jorde, D., Lenzen, D., Walberg-Henriksson, H. & Hemmo, V. (2007) - Science Education Now: A Renewed Pedagogy for the Future of Europe. European Commission. Community Research.