VNIVERSITAT DE VALÈNCIA

Course Guide
33653 Teaching science: environment, biodiversity and health

COURSE DATA

Data Subject	
Code	33653
Name	Teaching science: environment, biodiversity and health
Cycle	Grade
ECTS Credits	4.5
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
1305 - Degree in Primary School Education	Faculty of Teacher Training	4	First term

Subject-matter

Degree	Subject-matter	Character
1305 - Degree in Primary School Education	12 - Teaching natural sciences in primary education	Obligatory

Coordination

Name	Department
HURTADO SOLER, DESAMPARADOS	90 - Methodology of experimental and social sciences
MAYORAL GARCIA-BERLANGA, OLGA	90 - Methodology of experimental and social sciences
TALAVERA ORTEGA, MARTA	90 - Methodology of experimental and social sciences

SUMMARY

This is a compulsory four-month subject that addresses the challenge of how to ensure that children successfully approach the Biology and Geology content proposed in the Primary Education curriculum.

The fundamental purpose is to ensure that future teachers learn to teach science in a reflective and innovative way, so that they can make decisions, considering the contributions of the Didactics of Science, about what, why and what for to teach science and technology and how to ensure their learning in Primary School Education, specifically in the field of the environment, the diversity of living beings and the human body and health.

The aim is to overhaul the usual expository teaching method of science so that primary school teachers can encourage interest in the study of science and thus promote scientific literacy among citizens, enabling them to deal with the risks and challenges of an increasingly globalized world and preparing them to act towards a sustainable future.

This subject is linked to:

- Natural Sciences for Teachers (2nd year).
- Didactics of Natural Sciences I: Matter, energy and machines (3rd year).
- Practicum III (4th year).

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

Students are recommended to successfully have passed the subject Natural Sciences for Teachers (2nd year).

OUTCOMES

1305 - Degree in Primary School Education

- Express oneself orally and in writing correctly and appropriately in the official languages of the autonomous region.
- Use information and communication technologies effectively as usual working tools.
- Analyse critically the most relevant issues in today's society that affect family and school education: social and educational impact of audiovisual languages and of screens; changes in gender and inter-gender relations; multicultural and intercultural issues; discrimination and social inclusion, and sustainable development; Also, carry out educational actions aimed at preparing active and democratic citizens, committed to equality, especially between men and women.
- Promote cooperative work and individual work and effort.
- Assume that teaching must be perfected and adapted to scientific, pedagogical and social changes throughout life.

- Know the processes of interaction and communication in the classroom.
- Recognise the identity of each educational stage and their cognitive, psychomotor, communicative, social and affective characteristics.
- Design, plan and evaluate teaching and learning classroom activities in multicultural and co-educational contexts.
- Know how to work as a team with other professionals within and outside the school to attend to each student, to plan the learning sequences and to organise work in the classroom and in the play space.
- Know and apply basic educational research methodologies and techniques and be able to design innovation projects identifying evaluation indicators.
- Understand that systematic observation is a basic tool that can be used to reflect on practice and reality, and to contribute to innovation and improvement in education.
- Identify and plan the resolution of educational situations that affect students with different abilities and different learning rates, and acquire resources to favour their integration.
- Know the natural science school curriculum.
- Develop and evaluate curriculum content through appropriate teaching resources and promote the corresponding basic competences in students.
- Raise and resolve issues of everyday life related to science by applying scientific reasoning.
- Promote the competences proposed in the curriculum among students.
- Create teaching proposals in relation to the interaction between science, technology, society and sustainable development.
- Promote interest in and respect for the natural environment through appropriate educational projects.
- Develop the ability to use scientific language, symbols, concepts and texts to maintain a dialogue with the natural world.
- Develop the ability to identify, locate and evaluate sources of information, assess their quality and value and organise information and knowledge based on these sources.
- Know the scientific methodology and promote scientific thinking and experimentation.
- Encourage respectful attitudes towards the preservation of the environment and health.

LEARNING OUTCOMES

At the end of the course the student should be able to:

1. Support with professional arguments the basic scientific competences that the citizens 1. Support with professional arguments the basic scientific competences that citizens need in order to function in today's society.

2. Sequence the school curriculum of Primary School Science, in the aspects relating to the Environment, Biodiversity and Health, in the aspects relating to the Environment, Biodiversity and Health, in the three cycles that comprise it.

3. Analyse the curricular contents on Environment, Biodiversity and Health in order to determine their structure, hierarchy, extraction of important and subordinate ideas, possible obstacles or difficulties in learning, and the and the possibilities offered by each content for the development of scientific and professional competences. scientific and professional competences.

4. Know how to present a specific topic or thematic section in a schematic and conceptual way.

5. Relate the main ideas of a thematic content to the competences to be developed at each school stage, and judge the appropriateness 5. Relate the main ideas of a thematic content to the competences to be developed at each school stage and judge its appropriateness.

6. Design instruments or procedures for the approximation to the knowledge of the children's alternative ideas on the topics. Design instruments or procedures for the approximation to the knowledge of children's alternative ideas in subjects related to the environment, living beings and their diversity, the human body and its health. Human Body and its Health. Analyse the most common alternative ideas and their importance for the acquisition of new knowledge proposed by the teacher. acquisition of new knowledge proposed by the teachers.

7. Know how to elaborate suitable materials for the exploration of the environment by schoolchildren, such as simple experimental set-ups for specific purposes.

8. Propose and/or improve educational activities/materials, of limited extension and with well-defined objectives: diagnose previous ideas, modify alternative ideas, develop some experimental competence, promote exchanges of information through appropriate language, etc.

9. Design educational proposals that respond to the characteristics and needs of schooling in Primary Education. 9. Design educational proposals that respond to the characteristics and needs of schooling in Primary Education. Apply knowledge about children's learning in each age group to design appropriate educational proposals. to design appropriate educational proposals.

10. Use assessment in order to manage educational activity, control teaching/learning processes and provide feedback. 10. Use assessment in order to manage educational activity, control teaching/learning processes and provide feedback to students to improve their performance.

11. Use scientific language to describe properties of objects or beings, to describe events observed by learners, and in the observed by students, and in general to propose educational activities (such as analyzing exploratory and/or manipulative activities, etc.).

12. Use the factors involved in people's health and in the sustainability of the planet in the analysis and educational the analyses and educational proposals that they carry out.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theoretical and practical classes	45,00	100
Study and independent work	67,00	0
TOTAL	112,00	

TEACHING METHODOLOGY

Presential activities (around 40%):

- Theoretical-practical classes. Classes in which subject content will be addressed, debates will be held and activities will be carried out using different teaching resources: lectures, seminars, workshops, working groups, etc.; 25-30% ECTS credits; General (a-l) and specific competences (1-11).

- Group work. The purpose of group work is to highlight the importance of cooperative learning and to reinforce individual learning. The presentation of this work can be individual or collective and can be done with the whole group in the classroom or in tutorials and seminars with reduced audiences; 5-10% ECTS credits; General competences (a-l) and specific competences (1-11).

- Tutorials. Individual and group tutorials should serve as a means to coordinate students in individual and group tasks, as well as to evaluate individual progress, activities and teaching methodology; 5% ECTS credits; general (a-e) and specific competences (1-11).

Non-presential activities (around 60%):

Autonomous work and study. The model of the teacher as a researcher in the classroom focuses the student's activity on formulating relevant questions, searching for information, analysis, elaboration and subsequent communication. There will be individual and cooperative work, all of which will be guided, supervised and assessed by the lecturers; 60 ECTS credits; general (a-l) and specific competences (1- 11).

EVALUATION

Both the objectives and competences common to the degree and those specific to each subject will be assessed.

Assessment will be continuous and global, orientative and formative, and will involve an analysis of individual and collective learning processes.

The grade, the final representation of the assessment process, should reflect individual learning, understood not only as the acquisition of knowledge, but also as a process that has to do fundamentally

with intellectual and personal changes in students as they encounter new situations that require them to develop new comprehension and reasoning skills at the same time.

Learning outcomes will be collected mainly by means of the following:

- Periodic monitoring of students' progress, both in the classroom and in individual and group tutorials. ((10-20 %)

- Assessment of assignments, including the analysis and evaluation of observations on work produced by others. (10-20%)

- Assessment of individual and group participation, both in the classroom and in tasks outside the classroom. (20-30%)

- Oral and written assignments. (30-40%)

The student assessment process may include the preparation of a report on the individual's learning achievement.

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Additional

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