



Information about the subject

Degree: Bachelor of Arts Degree in Early Childhood Education

Faculty: Faculty of Teacher Training and Education Sciences

Code: 1410401 **Name:** Natural Sciences and their Teaching

Credits: 4,50 **ECTS** **Year:** 4 **Semester:** 1

Module: Learning the natural sciences, social sciences and mathematics

Subject Matter: Learning of natural sciences **Type:** Compulsory

Department: -

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Learning the natural sciences, social sciences and mathematics

| Subject Matter | ECTS | Subject | ECTS | Year/semester |
|------------------------------|------|-------------------------------------|------|---------------|
| Learning mathematics | 6,00 | Mathematics and its Teaching | 6,00 | 3/1 |
| Learning of natural sciences | 4,50 | Natural Sciences and their Teaching | 4,50 | 4/1 |
| Learning of social sciences | 4,50 | Social Sciences and their Teaching | 4,50 | 4/1 |

Recommended knowledge

Not established.

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 Explain basic principles and fundamental laws of the Sciences of Nature, worked in the subject, necessary for the exercise of Early Childhood Education teacher, applying them to situations of everyday life.
- R2 Identifies and applies the procedures and attitudes that characterize the scientific work as well as those appropriate behaviors for the conservation of the environment and respect for the person.
- R3 Recognizes and interprets the foundations of the Didactics of Nature Sciences in Early Childhood Education and applies them in the design of learning situations contextualized in everyday life and attending to diversity.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

| BASIC | Weighting | | | |
|---|-----------|---|---|---|
| | 1 | 2 | 3 | 4 |
| CB1 That students have demonstrated possession and understanding of knowledge in an area of study that builds on the foundation of general secondary education, and is usually at a level that, while relying on advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study. | | | X | |
| CB2 That students know how to apply their knowledge to their work or vocation in a professional manner and possess the skills that are usually demonstrated through the development and defense of arguments and problem solving within their area of study. | | | | X |
| CB3 That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues. | | | | X |
| CB4 That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences. | | | | X |
| CB5 That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy. | | | X | |
| GENERAL | Weighting | | | |
| | 1 | 2 | 3 | 4 |
| G1 To know the objectives, curricular contents and evaluation criteria of Early Childhood Education. | | | | X |
| G2 To promote and facilitate learning in early childhood, from a globalizing and integrating perspective of the different cognitive, emotional, psychomotor and volitional dimensions. | | | X | |
| G3 To design and regulate learning spaces in contexts of diversity that address the unique educational needs of students, gender equality, equity and respect for human rights. | | | | X |



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|-----|---|---|---|--|
| G5 | To reflect as a group on the acceptance of rules and respect for others. Promote the autonomy and uniqueness of each student as factors in the education of emotions, feelings and values in early childhood. | X | | |
| G11 | To reflect on classroom practices to innovate and improve teaching. To acquire habits and skills for autonomous and cooperative learning and promote it in students. | | X | |

| SPECIFIC | | Weighting | | | |
|----------|---|-----------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| E35 | To know the scientific, mathematical and technological foundations of the curriculum of this stage as well as the theories on the acquisition and development of the corresponding learning. | | | X | |
| E38 | To know the scientific methodology and promote scientific thinking and experimentation. | | | X | |
| E40 | To know the most outstanding moments in the history of science and technology and their transcendence. | | X | | |
| E41 | To elaborate didactic proposals in relation to the interaction between science, technology, society and sustainable development. | | | X | |
| E42 | To promote interest and respect for the natural, social and cultural environment through appropriate educational projects. Encourage experiences of initiation to information and communication technologies. | | | X | |



Assessment system for the acquisition of competencies and grading system

| Assessed learning outcomes | Granted percentage | Assessment method |
|----------------------------|--------------------|--|
| R1, R2, R3 | 90,00% | Written test: Final summative or continuous theoretical and practical test (open questions, objective test questions, truncated exam, etc.). Preparation of fieldwork memorandums. Solution of case studies, single case, etc. |
| R1, R2, R3 | 0,00% | Oral presentation of group and individual work. |
| R1, R2, R3 | 10,00% | Individual monitoring of attendance at face-to-face sessions and active participation in theoretical and practical classes, seminars and tutorials. |

Observations

In order to pass the subject the student must pass both the theoretical and the practical content separately.

All the works will have a concrete date of execution and delivery.

All oral and written work done by the student will be evaluated on a formal level in response to the document "Level C1 (Common European Framework of Reference for Languages) in the degrees of Preschool and Primary Education."

Criteria for granting a grade of A with honors: The grade can be granted to those students who have attained a grade of 9 in every assessment Tool class including attendance and active participation in theoretical-practical classes, seminars and tutorials.

In relation to the evaluation instruments, written tests:

50% will correspond to an individual final test or exam that will include a practical part, multiple choice questions and development on the content taught in the subject.

10% to field work and/or solution of practical cases in the classroom.

30% will be a final and groupal work of the subject.



CRITERIA FOR THE AWARDING OF HONOURS:

As a sign of academic exceptionality, the Honour's Degree will be awarded to the student who, in addition to obtaining a maximum mark in the above criteria, is considered by the teacher to be worthy of such a distinction. And, in accordance with the general regulations which indicate that only one matriculation of honour can be awarded for every 20 students, not per fraction of 20, with the exception of the case of groups of less than 20 students in total, in which one matriculation can be awarded.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 PARTICIPATIVE MASTERCLASS
- M2 CLASSROOM PRACTICES
- M4 APPRENTICESHIP CONTRACTS
- M6 PROBLEM-BASED LEARNING
- M7 GROUP TUTORING
- M8 INDIVIDUAL TUTORING
- M9 PROJECT-BASED LEARNING



IN-CLASS LEARNING ACTIVITIES

| | LEARNING OUTCOMES | HOURS | ECTS |
|---|-------------------|--------------|-------------|
| Presentation of content by the teacher, analysis of competences, explanation and demonstration of skills, abilities and knowledge in the classroom. M1, M2 | R1, R2, R3 | 20,20 | 0,81 |
| Group work sessions supervised by the teacher, case studies, diagnostic analyses, problems, field studies, computer classroom, visits, data searches, libraries, network, Internet, etc. Meaningful construction of knowledge through student interaction and activity. M2, M6, M7, M8 | R1, R2, R3 | 4,50 | 0,18 |
| Presentation in plenary. Application of interdisciplinary knowledge M1, M2 | R1, R2, R3 | 13,50 | 0,54 |
| Personalised attention in small groups. Period of instruction and/or guidance by a tutor with the aim of reviewing and discussing the materials and topics presented in classes, seminars, readings, assignments, etc. M7, M8 | R1, R2, R3 | 4,50 | 0,18 |
| Set of oral and/or written tests used in the initial, formative or summative assessment of the student. M2 | R1, R2, R3 | 2,30 | 0,09 |
| TOTAL | | 45,00 | 1,80 |



LEARNING ACTIVITIES OF AUTONOMOUS WORK

| | LEARNING OUTCOMES | HOURS | ECTS |
|---|-------------------|--------------|-------------|
| Group preparation of readings, essays, problem solving, seminars, papers, reports, etc. to present or deliver in theory classes, practical classes and/or small group tutorials. Work done on the platform or other virtual spaces. M1, M2, M6, M7 | R1, R2, R3 | 20,30 | 0,81 |
| Student study: Individual preparation of readings, essays, problem solving, seminars, papers, reports, etc. to present or deliver in theory classes, practical classes and/or small group tutorials. Work done on the platform or other virtual spaces. M1, M2, M6, M7, M8 | R1, R2, R3 | 47,20 | 1,89 |
| TOTAL | | 67,50 | 2,70 |



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

| Content block | Contents |
|---|--|
| 1. Introduction to scientific knowledge for the teacher in early childhood education. | Processes in Science. Scientific Knowledge and ordinary knowledge. Scientific models. |
| 2. Natural Science Preschool Education Curriculum in the Comunidad Valenciana. | Structure and treatment of the Natural Sciences Curriculum in the Early Childhood Education stage. |
| 3. Learning and teaching of Natural Sciences in Early Childhood Education. | Learning processes of Natural Sciences in Early Childhood Education. Methodological proposals and teaching resources for the teaching of Natural Sciences in Early Childhood Education. |

Temporary organization of learning:

| Block of content | Number of sessions | Hours |
|---|--------------------|-------|
| 1. Introduction to scientific knowledge for the teacher in early childhood education. | 10,50 | 21,00 |
| 2. Natural Science Preschool Education Curriculum in the Comunidad Valenciana. | 2,00 | 4,00 |
| 3. Learning and teaching of Natural Sciences in Early Childhood Education. | 10,00 | 20,00 |



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Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

Situation 1: Teaching without limited capacity (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

Situation 2: Teaching with limited capacity (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

Microsoft Teams

Kaltura



Situation 3: Confinement due to a new State of Alarm.

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

- Microsoft Teams
- Kaltura

Explanation about the practical sessions:

There are no clarifications about the practical sessions.



2. System for Assessing the Acquisition of the competences and Assessment System

ONSITE WORK

Regarding the Assessment Tools:

- The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.
- The following changes will be made to adapt the subject's assessment to the online teaching.

| Course guide | | Adaptation | |
|-----------------|----------------------|--------------------------------------|---------------------|
| Assessment tool | Allocated percentage | Description of the suggested changes | Platform to be used |
| | | | |

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

Comments to the Assessment System:

There are no clarifications to the evaluation system.