

Academic Year/course: 2021/22

## 26572 - Didactics of Natural Sciences

### Syllabus Information

**Academic Year:** 2021/22

**Subject:** 26572 - Didactics of Natural Sciences

**Faculty / School:** 107 - Facultad de Educación

202 - Facultad de Ciencias Humanas y de la Educación

301 - Facultad de Ciencias Sociales y Humanas

**Degree:** 301 - Degree in Nursery School Education

302 - Degree in Nursery School Education

303 - Degree in Nursery School Education

**ECTS:** 6.0

**Year:** 2

**Semester:** Second semester

**Subject Type:** Compulsory

**Module:**

### 1. General information

### 2. Learning goals

### 3. Assessment (1st and 2nd call)

### 4. Methodology, learning tasks, syllabus and resources

#### 4.1. Methodological overview

A) From the teaching staff dynamic:

- Presentation of the work plan, acquisition of commitments and actions organization.
- Provision of bibliographic and documentary sources and resources for theoretical syntheses.
- Creation of self-produced documents.
- Tutorial advice for students in the searching and elaboration of documents process.
- Follow-up of the expositions in order to clarify, explain, summarize, nature, etc.
- Coordination of the exposition's implementation and stimulation of its experimentation possibilities.
- Examples of creative experiences in the Early Childhood syllabus.
- Specific actions of a participatory and practical nature.

B) From the student dynamic

- Elaboration of works and achievement of skills.
- Individual reading and consultation.
- Oral presentation of the assignments, if possible, using ITC, synthesis or conceptual maps about theoretical contents.
- Debate, reflection and synthesis on the obtained conclusions about the theoretical contents included in the course.
- Implementation in the classroom of original proposals developing contents (with the participation of the whole group).
- Experimentation about original proposals.

-Exposition, with diversity of resources, settings, formats, purposes, etc., of the acquired knowledge about the Early Childhood syllabus and its implementation.

## **Short description of the contents**

1. Foundations of Science Education in Early Childhood Education
  - 1.1. Ordinary knowledge and scientific knowledge.
  - 1.2. Knowledge building of Nature in an Early Childhood Education context.
  - 1.3. Implications of Science Education Research on the design, development and evaluation of learning activities in Early Childhood Education.
  - 1.4. Difficulties and strategies of communication in a Early Childhood classroom context.ASSIGNMENT 1: Meditated reading of an research or innovation article on Science in Early Childhood Education
  
2. Natural Sciences in the Early Childhood Syllabus
  - 2.1. Objects and material around us.
  - 2.2. Minerals and rocks
  - 2.3. Water and air
  - 2.4. Living beings
  - 2.5. Earth-Sun-Moon System
  - 2.6. Ecology and environmental educationASSIGNMENT 2: Valuation and building of Models in Early Childhood Education.
  
3. Scientific processes in Natural Sciences teaching in Early Childhood Education lessons.
  - 3.1. Contexts creation for observation and approach to problematic situations.
  - 3.2. Hypothesis and speculations.
  - 3.3. Experimentation in Sciences lessons.
  - 3.4. Skills for conclusions elaboration.
  - 3.5. Skills for communication and discussion of built knowledge.ASSIGNMENT 3. First part: Design and development of an Early Childhood Education teaching experience.
  
4. Didactic resources for teaching physical-natural environment.
  - 4.1. Sciences learning spaces, workshops, projects and free choosing learning spaces.
  - 4.2. Didactic use of the natural and urban surroundings.ASSIGNMENT 4. Second part: Analysis and reflection of the Assignment number 3.

### **4.2. Learning tasks**

In order to help the students to succeed in the planned results, the program include (within the planed schedule)

-Master classes.

-Lab classes and seminars to carry out models and practices.

-Didactic excursions to the environment and/or visits of Early Childhood Education teacher's expert on Science teaching issues, etc.

-Tutoring in order to solve any doubts.

### **4.3. Syllabus**

1. Foundations of Science Education in Early Childhood Education.
2. Natural Sciences in the Early Childhood Syllabus
3. Scientific processes in Natural Sciences teaching in Early Childhood Education lessons.
4. Didactic resources for teaching physical-natural environment.

### **4.4. Course planning and calendar**

The schedule of in-person class, assignments presentation, activities and key dates will be communicated to the students at the beginning of the semester by means of Moodle.

Finals dates are published in the faculty web site.

#### **4.5. Bibliography and recommended resources**

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=26572>