



# UNIVERSITY OF NICOSIA ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

University of Nicosia, Cyprus

<b>Course Code</b> EDUP-341	<b>Course Title</b> Science Education in Pre-Primary School	<b>ECTS Credits</b> 6
<b>Department</b> Paedagogical Studies	<b>Semester</b> Spring	<b>Prerequisites</b> EDUP-241
<b>Type of Course</b> Required/specialization	<b>Field</b> Science education	<b>Language of Instruction</b> Greek
<b>Level of Course</b> Undergraduate	<b>Year of Study</b> 4th	<b>Lecturer(s)</b> Dr Lucy Avraamidou
<b>Mode of Delivery</b> face-to-face	<b>Work Placement</b> N/A	<b>Co-requisites</b>

## Objectives of the course

This course aims at supporting the development of prospective elementary teachers' pedagogical knowledge for teaching science at the elementary school and it is designed based on current recommendations for reform in science education emphasizing scientific inquiry. In this course, prospective elementary teachers explore theoretical concepts associated with the nature of science and the work of scientists, scientific inquiry and the role of women in science. In addition, prospective teachers engage in activities associated with critical analysis and modification of specific science units included in the curriculum.

The students will:

- Interact with various natural phenomena and develop explanations about how the natural world works
- Understand the purpose and goals for teaching science at the elementary school
- Be able to apply in their practices a variety of teaching strategies and teaching methods
- Be able to justify through learning theories their pedagogical decisions
- Be involved in research activities related to elementary school students' existing views about science
- Be involved in research activities related to elementary school students' existing knowledge in science

## Learning outcomes:

With the completion of the course, the students will:

- Develop personal philosophies about science teaching and learning
- Obtain basic scientific inquiry skills
- Develop the necessary skills and knowledge to design contemporary instructional activities
- Develop basic research skills that will enable them to study research related to students'

knowledge, views and attitudes towards science.

### **Course content:**

The purpose of this course is to support students in developing a personal philosophy of teaching science at the primary school. In this course, the students will study several teaching approaches and strategies such as inquiry-based science, project-based science, outdoors learning, the use of narrative in science education. At the same time they will engage in various activities that aim to support the development of science content knowledge.

- Content knowledge: ecosystems, sound, electricity, magnetism
- Designing scientific experiments
- The nature of science
- Problem-solving approaches in science education
- Models of science education and learning progressions
- Designing contemporary approaches to science teaching
- Technology applications in science
- Women in science
- Informal learning approaches to science education

### **Learning activities and teaching methods**

Lecture, workshops, experiential seminars, individual and group work, individual feedback, case study analysis, student presentations

### **Assessment methods:**

Formative assessment, feedback, individual research, collaborative work, presentations, discussions

### **Required textbooks/reading:**

<b>Authors</b>	<b>Title</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Κωνσταντίνου, Κ. Π., Φερωνύμου, Γ., Κυριακίδου, Ε., Νικολάου, Χρ	Φυσικές Επιστήμες στο Νηπιαγωγείο: Βοήθημα για τη Νηπιαγωγό.	Υπουργείο Παιδείας και Πολιτισμού Κύπρου, Λευκωσία	2004	
Αβρααμίδου Λούση	Σημειώσεις μαθήματος	Copy Center/UNIC	2010	