



UNIVERSITY OF NICOSIA ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

University of Nicosia, Cyprus

Course Code EDUE-240	Course Title Basic Scientific Concepts for Elementary School Teachers	ECTS Credits 6
Department Paedagogical Studies	Semester Fall	Prerequisites None
Type of Course Compulsory	Field Science Education	Language of Instruction Greek
Level of Course 1 st Cycle	Year of Study 2 nd	Lecturer(s) Dr Maria Evagorou
Mode of Delivery face-to-face	Work Placement N/A	Co-requisites None

Objectives of the course:

The main objectives of this course is that the students will:

- Explore what it means to be scientifically literate, think and act scientifically,
- Be involved in the process of collecting, analyzing, organizing and representing scientific data.
- Understand and explain various natural phenomena.
- Develop scientific method and scientific thinking skills.
- Take into account multiple ways of using the technology as a means to help them further develop their scientific knowledge.
- Develop a positive attitude towards science.

Learning outcomes:

With the completion of the course the students will be able to:

- Use and apply the various scientific constructs that were taught (electricity, magnetism, light and color, buoyancy).
- Apply the scientific method in new scientific constructs.
- Design experiments that can help them explain a natural phenomenon.
- Demonstrate their understanding of electricity, magnetism, light and color and buoyancy through the application in new contexts.
- Compare their own experiments with those of the others and discuss the differences.
- Demonstrate their understanding of the scientific methodology.

Course content:

1. The scientific process
2. Scientific methods skills
 - a. Observations of natural phenomena
 - b. Hypothesis construction and comparison with initial observations
 - c. Predictions based on hypothesis
 - d. Designing experiments, collecting data and reporting the explanations
3. Basic scientific concepts:
 - a. Electricity/ Electric Circuits
 - b. Magnetism
 - c. Light and Color
 - d. Buoyancy
 - e. Day/Night and Moon Phase formation

Learning activities and teaching methods:

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

Assessment methods:

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

Required textbooks/reading:

Authors	Title	Publisher	Year	ISBN
Evagorou, M.	<i>EDUE 240 Notes (in Greek)</i>	UNIC	2010	N/A

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Driver, R., Squires, A., Rushworth, P., Wood-Robinson, V.	Οικοδομώντας τις έννοιες των φυσικών επιστημών	Αθήνα: Τυπωθητω	2000	9607643844