COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF EDUCATION		
ACADEMIC UNIT	DEPARTMENT OF PRIMARY EDUCATION		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	DEE 305	**SEMESTER**	3rd
COURSE TITLE	Physics in Everyday Life		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	General background
PREREQUISITE COURSES:	No
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	http://ecourse.uoi.gr

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described. Consult Appendix A

• Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area

• Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B

• Guidelines for writing Learning Outcomes

By the end of the course, students should be able:

1. To apply physics didactics employing the science approach. The latter is based on the perception that physics concepts are human cognitive constructs; they derive from everyday life and as such are addressed by teachers.
2. To use mathematics as a useful tool for exploring concepts and problems of Physics.
3. To describe the phenomena and problems of Physics solely by using its concepts (qualitatively).
4. To apply the conceptual description of phenomena and problem solving approach to situations related to the curriculum in Primary Education.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Project planning and management
Respect for difference and multiculturalism Respect for the natural environment
Showing social, professional and ethical responsibility and

Working independently *Team work Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*	*sensitivity to gender issues Criticism and self-criticism* *Production of free, creative and inductive thinking ……* *Others…* *……*

• Search for, analysis and synthesis of data and information, with the use of strategies for developing reasonable arguments in exploring concepts in Physics.

• Adapting to new situations, Respect for the natural environment, Search for, analysis and synthesis of data and information, Working independently, Team work, Production of new research ideas.

(3) SYLLABUS

- Nature of Science
- Know and understand the most important phenomena of Electromagnetism, Optics and other areas of Physics
- Inductive thinking on environmental issues and problem solving
- Students' conceptions about various physics concepts and how to use conceptions as a learning process. Examples and applications of the concepts of Electromagnetism and Optics.
- Adaptation of students' ideological constructs and researches to the needs of the educational process and curriculum in Primary Education

(4) TEACHING and LEARNING METHODS – EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of ICT in teaching
TEACHING METHODS *The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of nondirected study according to the principles of the ECTS*	
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other.* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Written or oral exams

Activity	Semester workload
Lectures	26
Tutorial	13
Educational Visits	10
Study and analysis of bibliography	52
Additional Work (Exercise Solutions)	21
Exams	3
Σύνολο Μαθήματος	***125***

(5) ATTACHED BIBLIOGRAPHY

Suggested bibliography (from system Evdoxos)

- Hewitt, P. (2006). Οι έννοιες της Φυσικής. Πανεπιστημιακές Εκδόσεις Κρήτης.
- Holton, G., & Brush, G.S (2018). Εισαγωγή στις έννοιες & τις θεωρίες της φυσικής επιστήμης (επιστ. επιμ. Σκορδούλης Κ.). Εκδ. Γ. *ΔΑΡΔΑΝΟΣ* - Κ. ΔΑΡΔΑΝΟΣ Ο.Ε.

Additional bibliography

- Charpak, G. (2003). Μαθητές Ερευνητές και Πολίτες. Μια πρωτοποριακή διδασκαλία των επιστημών (μετάφραση. Μήτσικα Ε., Τσικρίκας Ν.) εκδ. Σαββάλας, Αθήνα.
- Καλκάνης, Γ.Θ. (2000). Εφαρμογές των Τεχνολογιών Πληροφόρησης στις Φυσικές Επιστήμες, Πανεπιστήμιο Αθηνών, Αθήνα.
- Καριώτογλου, Π. (2006). Παιδαγωγική γνώση του περιεχομένου φυσικών επιστημών, εκδ. Γράφημα, Θεσσαλονίκη.
- Κασσέτας, Ι.Α. (1996). Το μακρόν Φυσική - προ του βραχέος διδάσκω, εκδ. Σαββάλα, Αθήνα.