

COURSE OUTLINE

(1) GENERAL

SCHOOL	of Education		
ACADEMIC UNIT	Department of Primary Education		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΔΕΕ162	SEMESTER	Z (7th)
COURSE TITLE	Didactics of Physics- Teaching Practice		
INDEPENDENT TEACHING ACTIVITIES <i>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</i>	WEEKLY TEACHING HOURS	CREDITS	
	3	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Special background, Skills development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	http://ecourse.uoi.gr/course/view.php?id=843		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
<p>It is expected that upon completion of the course, the students:</p> <ol style="list-style-type: none"> 1. Have acquired basic knowledge about the science of physics teaching. 2. Understand the importance of students' Alternative Ideas in Physics. 3. Have understood the importance of the experiment in the teaching of Physics 4. Have understood the teaching methods of Physics 5. Have met the constructive teaching model of Physics 6. Apply the constructive teaching model for the basic physics concepts in the school's classroom.

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	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment
Production of new research ideas	Others...

Searching and analyzing, synthesizing data using the tools necessary to conduct Physics lessons in the elementary school.

Free, creative and inductive thinking will be promoted in combination with specific physics teaching methods such as project method, laboratory use etc.

(3) SYLLABUS

- The nature of Science and of learning.
- The processes of the scientific method and the teaching of Physics.
- Teaching with experiments
- Alternative ideas of students and their impact on teaching.
- The constructive learning model.
- The role of the experiment in conceptual change.

Pre-existing ideas of students for various concepts of Physics. Examples of the constructive approach.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Using the Internet for Examples in Teaching, Classroom Applications and Teamwork Examples	
TEACHING METHODS <i>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.</i>	<i>Activity</i>	<i>Semester workload</i>
	Lectures	26
	Laboratory practice	13
	Study and Analysis of bibliography	52
	Teaching Practice	20

<p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	Essay writing	25
	Examinations	3
	Preparing experiments for teaching in School	8
	Course Total	150
<p align="center">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>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</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<ul style="list-style-type: none"> • Written examination, • Essay report of the teaching practice 	

(5) ATTACHED BIBLIOGRAPHY

<p>- <i>Suggested bibliography:</i></p> <ul style="list-style-type: none"> • Δήμητρα Συυροπούλου - Κατσάνη: <i>Διδακτικές και παιδαγωγικές προσεγγίσεις στις φυσικές επιστήμες. Θεωρίες μάθησης, αναλυτικά προγράμματα και πρότυπα/μοντέλα διδασκαλίας, διδακτική αξιοποίηση του πειράματος, Τυπωθήτω, 2008.</i> • Παναγιώτης Β. Κόκκοτας, <i>Διδακτική των φυσικών επιστημών, Σύγχρονες προσεγγίσεις στη διδασκαλία των φυσικών επιστημών: Η εποικοδομητική προσέγγιση της διδασκαλίας και της μάθησης, Εκδόσεις Γρηγόρη, 2008.</i> • Driver R., Squires A., Rushworth P., Wood-Robinson V. (1999): <i>Οικοδομώντας τις έννοιες των Φυσικών Επιστημών- Μια Παγκόσμια σύνοψη των ιδεών των μαθητών (επιμέλεια Π. Κόκκοτας, μετάφραση Μ. Χατζή), εκδ. Τυπωθήτω, Αθήνα.</i> • Driver, R., Guesne, E., Tiberghien, A. (1993): <i>Οι ιδέες των παιδιών στις φυσικές επιστήμες,. Μετάφραση Κρητικός Θ, Σπηλιωτοπούλου - Παπαντωνίου Β, Σταυρόπουλος Α. εκδ. Ένωση Ελλήνων Φυσικών και Τροχαλία, Αθήνα.</i> • Ζησιμόπουλος Γ., Καφετζόπουλος Κ., Μουτζούρη -Μανούσου Ε., Παπασταματίου Ν. (2002): <i>Θέματα διδακτικής για τα μαθήματα των Φυσικών Επιστημών, Εκδ. Πατάκη, Αθήνα.</i> • Related academic journals: • International Journal of Science Education • International Journal of Science and Mathematics Education • Journal of Research in Science Teaching • Research in Science Education • Research in Science & Technological Education • Science & Education • Science Education
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