

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	School of Sciences		
<b>ACADEMIC UNIT</b>	Department of Physics		
<b>LEVEL OF STUDIES</b>	School of Sciences		
<b>COURSE CODE</b>	<b>M321</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE TITLE</b>	Didactics of Physics II		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <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>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
	3	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	General background		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>COURSE WEBSITE (URL)</b>			

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b></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>Consult Appendix A</p> <ul style="list-style-type: none"> <li>• Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</li> <li>• Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</li> <li>• Guidelines for writing Learning Outcomes</li> </ul>		
<p>At the end of the course the students are expected:</p> <ol style="list-style-type: none"> <li>1. To have gained basic knowledge on the strategy of teaching in the field of classical physics at the secondary school level education, taking into consideration the factors that influence the educational procedures.</li> <li>2. To have gained knowledge on didactic methods used for teaching the field of classical physics oriented in active learning environments.</li> <li>3. To be able to plan, construct and implement integrated proposals of teaching thematic sections in the field of classical physics at the secondary school level education, including relevant experimental procedures, as well as problem solving strategies.</li> </ol>		
<p><b>General Competences</b></p> <p><i>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?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>  <i>Adapting to new situations</i>  <i>Decision-making</i>  <i>Working independently</i>  <i>Team work</i>  <i>Working in an international environment</i>  <i>Working in an interdisciplinary environment</i> </td> <td style="width: 50%; vertical-align: top;"> <i>Project planning and management</i>  <i>Respect for difference and multiculturalism</i>  <i>Respect for the natural environment</i>  <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>  <i>Criticism and self-criticism</i>  <i>Production of free, creative and inductive thinking</i>            .....         </td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> <i>Team work</i> <i>Working in an international environment</i> <i>Working in an interdisciplinary environment</i>	<i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> .....
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<i>Production of new research ideas</i>	<i>Others...</i> .....
Search, analyse and compile data and information, with the use of the necessary technology. Working independently. Team work. Project planning and management. Production of free, creative and inductive thinking.	

### (3) SYLLABUS

Physics teaching strategies. Factors that influence the educational procedures in physics teaching. Didactic methods used for teaching physics oriented in active learning environments. Planning, constructing and implementing integrated proposals of teaching thematic sections of physics.
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### (4) TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of the internet www for the presentation of examples in the educational procedures, applications in the classroom and examples which include team work. The presentation is conducted by computer and projector. The Moodle asynchronous e-learning system is used for dissemination of notes, exercises and communication between the students and the instructor.	
<b>TEACHING METHODS</b> <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.  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>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	39
	Study and analysis of bibliography	36
	Project	25
	Essay writing	25
	Course total	125
<b>STUDENT PERFORMANCE EVALUATION</b> <i>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.</i>	Written work and public presentation.	

### (5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography: - Related academic journals: 1. R. D. Knight, 'Πέντε εύκολα μαθήματα: Στρατηγικές για την επιτυχή διδασκαλία της Φυσικής' (μετάφραση Π. Γ. Τζαμαλής), Δίαυλος 2006. 2. A. B. Arons, 'Όδηγός διδασκαλίας της Φυσικής' (μετάφραση Α. Δ. Βαλαδάκης), Τροχαλία 1992.
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