**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | SCHOOL OF HEALTH SCIENCES |
| **ACADEMIC UNIT** | BIOLOGICAL AND TECHNOLOGICAL APPLICATIONS |
| **LEVEL OF STUDIES** | UNDERGRADUATE |
| **COURSE CODE** | ΒΕΕ910 | **SEMESTER** | 7th -9th |
| **COURSE TITLE** | PHYSICS TEACHING  |
| **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 |
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| *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* | *Specialised general knowledge**Skills development* |
| **PREREQUISITE COURSES:** |  |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | GREEK |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** |  |
| **COURSE WEBSITE (URL)** |  |

1. **LEARNING OUTCOMES**

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| **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*
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| Upon completion of the course, students are expected: * to have obtained basic knowledge about the Scientific Field of “Physics Teaching” as far as the needs of primary education are concerned
* to have learned the meaning of the pupils’ alternative ideas about the various concepts of Physics for children
* to take advantage of the importance of experiments when teaching Physics
* to utilize various teaching methods of Physics
* to apply the productive model of teaching Physics
* to further extend the use of the productive model to other concepts of Physics in the school practice
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| **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* *Working independently* *Team work**Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*  | *Project planning and management* *Respect for difference and multiculturalism* *Respect for the natural environment* *Showing social, professional and ethical responsibility and sensitivity to gender issues* *Criticism and self-criticism* *Production of free, creative and inductive thinking**……**Others…**…….* |
| * Research, analysis and data synthesis, with the use of the necessary tools to conduct the teaching of Physics in Primary School
* Facilitation of thinking in a free, creative and deductive manner, while making use of methods for the specialized teaching of physics, such as project method, action research etc.
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1. **SYLLABUS**

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| * The nature of the Physical Sciences and learning in the teaching practice
* Methodology strategies for teaching Physics
* Experimental teaching
* The project as a method and tool of teaching
* The productive model of learning
* Role of the experiment in conceptual change
* The pre-existing ideas of pupils for the various concepts of Physics. Examples of the productive teaching approach to little children and pupils of the 5th and 6th Grade of Primary School.
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1. **TEACHING and LEARNING METHODS - EVALUATION**

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| **DELIVERY***Face-to-face, Distance learning, etc.* | Face-to-face teaching  |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* | Use of the internet to present examples of teachingApplications in the classroomExamples of group work |
| **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 non-directed study according to the principles of the ECTS* |

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| ***Activity*** | ***Semester workload*** |
| Lectures | 75 hours |
| Study of bibliography  | 25 hours |
| Exams | 25 hours  |
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| Course Total  | ***125 hours*** |

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| **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 examination  |

1. **ATTACHED BIBLIOGRAPHY**

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| *- Suggested bibliography:**- Related academic journals:*-Δήμητρα Σπυροπούλου - Κατσάνη: *Διδακτικές και παιδαγωγικές προσεγγίσεις στις φυσικές επιστήμες.* *Θεωρίες μάθησης, αναλυτικά προγράμματα και πρότυπα/ μοντέλα διδασκαλίας, διδακτική αξιοποίηση του πειράματος*. Τυπωθήτω, 2008.-Παναγιώτης Β. Κόκκοτας, Διδακτική των φυσικών επιστημών,Σύγχρονες προσεγγίσεις στη διδασκαλία των φυσικών επιστημών: Η εποικοδομητική προσέγγιση της διδασκαλίας και της μάθησης. Εκδόσεις Γρηγόρη**,** 2008 ***Relevant Journals:*** Ιnternational Journal of Science Education Journal of Research in Science Teaching Research in Science Education Research in Science & Technological Education  Science & Education Science Education |