COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SCIENCES
ACADEMIC UNIT	PHYSICS DEPARTMENT
LEVEL OF STUDIES	GRADUATE

COURSE CODE	308	**SEMESTER**	6 & 8
COURSE TITLE	NEW TECHNOLOGIES IN THE TEACHING OF PHYSICAL SCIENCES		

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**
	4	**4**
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, skills development
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	

(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*

The course provides the student with the necessary skills needed for the effective use of new technologies (computer, Internet, projectors, interactive tables, etc.) in the educational process. After the successful completion of the course the student will be able to

1. Use simulations and multimedia for teaching advanced concepts
2. Use software to create multimedia applications and presentations
3. Use software executing analytical calculations to mathematical problems
4. Effectively use the Internet in the educational process
5. Create and display courses on the Web.

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*

Search, analysis and synthesis of data and information, using appropriate techniques.
Autonomous work.
Promotion of free, creative and inductive thinking.

(3) SYLLABUS

Introduction - History. Computers at the service of education. The use computers. Using simulations and multimedia for teaching advanced concepts. Software to create multimedia applications and presentations. Software implementation of analytical calculations to problems physics. The Internet in the educational process. Posting courses on the Web. Modern e-learning software (video conferencing).

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to face learning	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of ICT in teaching. Communication with students via e-course.	
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*	**Activity**	**Semester workload**
	Lectures	60
	Bibliography study	27
	Free Study	10
	Exams	3
	Course Total	*100*
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.*	Tests during the courses. Homework and oral presentation. Written exams at the end of the semester.	

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:
- Related academic journals:

- Γιωργος Φεσάκης, Εισαγωγή στις Εφαρμογές των Ψηφιακών Τεχνολογιών στην εκπαίδευση, Εκδ. Gutenberg, 2019
- The Digital Scholar: How Technology Is Transforming Scholarly Practice by Martin Weller-Bloomsbury Academic,2011
- The 2013 Free education technology resources textbook
  http://www.humber.ca/centreforteachingandlearning/assets/files/Teaching%20Resources/2013_EmergingEdTech_Free-Education-Technology-Resources-eBook.pdf
- The Flipped Classroom Workshop in a Book by Kelly Walsh