

YF02 Workshop on Virtual Reality Applications and Emerging Technologies

(1) GENERAL

SCHOOL	School of Humanities		
ACADEMIC UNIT	Department of Primary Education		
LEVEL OF STUDIES	Postgraduate		
COURSE CODE	YG02	SEMESTER	C
COURSE TITLE	Workshop on Virtual Reality Applications and Emerging Technologies		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
		-	10
COURSE TYPE	special background, skills development, lab, elective		
PREREQUISITE COURSES:	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes
<p>The course aims in giving students insight and perspective on the following.</p> <p>In terms of knowledge:</p> <ol style="list-style-type: none"> 1. Become familiar with programming in a pleasant environment. 2. Understand the steps needed for developing a program. 3. Learn to develop their own applications by using a variety of means. 4. Gradually build complex applications and, thus, demonstrate a deeper understanding of complex programming concepts. <p>In terms of their skills:</p> <ol style="list-style-type: none"> 1. Improve their skills in solving problems. 2. Develop positive attitudes towards programming. 3. Be able to work in an advanced programming environment for the development of 3D applications. <p>In terms of their competences:</p> <ol style="list-style-type: none"> 1. Be able to develop 3D virtual environments for educational use. 2. Be able to develop 3D educational games.
General Competences
<p>The course aims at the following general competences:</p> <ul style="list-style-type: none"> • Adapting to new situations • Decision-making

- Working independently
- Team work
- Working in an interdisciplinary environment
- Production of new research ideas

(3) SYLLABUS

New media and technologies are gradually incorporated in everyday educational practices and the prospective educator will be required to use a number of these in the context of his/her teaching. Advanced computer capabilities, hitherto inaccessible to the general public, are becoming increasingly affordable to the educational community. Having that in mind, and also to the future developments, the weight of the course falls not on the technologies that are already well established, but in cutting-edge technologies that are expected to play an important role in the coming years. One of these is 3D educational games, which are the subject of this course. Their role, as well as the role of games in general, are important in the process of acquiring knowledge, because this is done in a pleasant way for the learner. On the other hand, tools that allow the development of educational games easily, quickly, and with a quality level comparable to that of professional applications, are already available. Thus, the course is an excellent opportunity for students to get acquainted on how to develop such applications. The outline of the course is as follows:

- 3D virtual environments, basic technological parameters.
- Learning theories supporting the educational uses of virtual reality.
- development methodology of virtual environments applications, tools and techniques.
- Educational scenarios exploiting the use of 3D virtual environments.
- Laboratory courses, presentation and development of 3D virtual environments for educational use.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	100% via distance learning	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	ICT is the subject of the course	
TEACHING METHODS	<i>Activity</i>	<i>Semester workload</i>
	Lectures	24
	Study & analysis of bibliography	90
	Participation in public forum's online activities	36
	Preparing short mid-term work	50
	Writing final assignment/application	100
	Course total	300
STUDENT PERFORMANCE EVALUATION	<p>The evaluation encompasses the following components:</p> <ol style="list-style-type: none"> 1. Laboratory exercises conducted throughout the semester. 2. Written midterm examination addressing theoretical issues of virtual reality in education. 	

	<p>3. Each student is tasked with designing and implementing an application, either individually or in a small group, utilizing the tools discussed in the lectures. The assessment of this application is based on specific criteria, including the pedagogical, technical, and aesthetic adequacy of the material produced.</p> <p>The successful completion of all the aforementioned activities is a prerequisite for the awarding of academic credits.</p>
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(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Fokides, E., & Atsikrasi, P. (2022). *(Πλήρως Εμβυθισμένη) Εικονική Πραγματικότητα, μάθηση και εκπαίδευση [(Fully Immersive) Virtual Reality, learning, and education]*. Zygos Publications.
- *Teachers' documents, tutorials and scientific articles published to Moodle*

- Related academic journals:

Computers and Education
International Journal of Game-Based Learning
Education and Information Technologies
Australasian Journal of Educational Technology
Journal of Educational Technology & Society