

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	SCHOOL OF HUMANITIES AND SOCIAL SCIENCES		
<b>ACADEMIC UNIT</b>	HISTORY ARCHAEOLOGY		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	YDG306	<b>SEMESTER</b>	4 <sup>th</sup>
<b>COURSE TITLE</b>	Introduction to Extended Reality		
<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>
Lectures (theoretical part - presentation, study of algorithms for practical problems)		3	3
Lectures (laboratory part – analysis of foundational algorithms and algorithmic techniques)		0	
<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>	Background course		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	No		
<b>COURSE WEBSITE (URL)</b>			

### 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 follows the new technological developments and introduces students to the concept of Extended Reality.

Extended reality (XR) is a term referring to all real-and-virtual combined environments and human-machine interactions generated by computer technology and wearables. It includes representative forms such as augmented reality (AR), augmented virtuality (AV) and virtual reality (VR) and the areas interpolated among them. The levels of virtuality range from partially sensory inputs to immersive virtuality, also called VR.

XR is a superset which includes the entire spectrum from "the complete real" to "the complete virtual" in the concept of reality–virtuality continuum introduced by Paul Milgram. Still, its connotation lies in the extension of human experiences especially relating to the senses of existence (represented by VR) and the acquisition of cognition (represented by AR). With the continuous development in human–computer interactions, this connotation is still evolving.

The course is divided into a theoretical and practical part.

### 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?*

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>
	<i>.....</i>

Familiarity with Didactics of Informatics and implementing a Course based on new learning theories.

Adapting to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Respect for difference and multiculturalism

Criticism and self-criticism

Production of free, creative and inductive thinking

### 3. SYLLABUS

The course content includes:

- Definitions of Extended Reality, Augmented Reality, Mixed and Virtual Reality
- Technologies involved.
- Modern applications, tools and information systems.

The course is divided in a theoretical and a practical part

### 4. TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face to face, Distance learning
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<p><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>  <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of ICT in teaching (online lectures, course website, extensive use of Web resources), in communication/collaboration with students (mailing lists, social networks (Facebook), course website, Doodles) and in the process of progress monitoring and evaluation (use of specialized software for the monitoring and evaluation of student progress)</p>														
<p><b>TEACHING METHODS</b>  <i>The manner and methods of teaching are described in detail.</i>  <i>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>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>	<table> <tr> <th><i>Activity</i></th><th><i>Semester Workload</i></th></tr> <tr> <td>Lectures (theoretical part)</td><td>39</td></tr> <tr> <td>Lectures (laboratory part)</td><td>0</td></tr> <tr> <td>Intense cooperation among professor and students also using ICT</td><td>30</td></tr> <tr> <td>Independent study</td><td>30</td></tr> <tr> <td></td><td></td></tr> <tr> <td>Course total (25 hours per credit)</td><td><b>99</b></td></tr> </table>	<i>Activity</i>	<i>Semester Workload</i>	Lectures (theoretical part)	39	Lectures (laboratory part)	0	Intense cooperation among professor and students also using ICT	30	Independent study	30			Course total (25 hours per credit)	<b>99</b>
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<p><b>STUDENT PERFORMANCE EVALUATION</b>  <i>Description of the evaluation procedure</i>  <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>  <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Assessment - Grading Process (it is announced on the course website before the beginning of the semester and remains available throughout the semester)</p> <p>The final score is obtained as a function of:</p> <p>(A) 2 intermediate computer-based multiple choice examinations. They contribute by 40% to the final score.</p> <ul style="list-style-type: none"> <li>- All students attending the course can participate in the intermediate examinations.</li> <li>- Scores are valid only for the current academic year.</li> <li>- Participation in the intermediate exams is not mandatory: students who decide not to participate in intermediate examinations are not excluded from the final examination in February. However, the 2 intermediate examinations contribute to the final score (by 40%).</li> </ul> <p>(B) a final, computer-based, multiple choice examination. It contributes by 60% to the final score.</p> <p>(C) development of a project – a didactic intervention of a selected theme</p>														

## 5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

Practical Augmented Reality: A Guide to the Technologies, Applications and Human Factors for AR and VR (Usability)

By Steve Aukstakalnis

Publisher: Addison-Wesley Professional; 1 edition (September 18, 2016)

Language: English

ISBN-10: 0134094239

ISBN-13: 978-0134094236

Augmented Reality: A Practical Guide

By Stephen Cawood and Mark Fiala

ISBN-13: 978-1934356036

ISBN-10: 1934356034

Publisher: Pragmatic Bookshelf; 1 edition (January 28, 2008)