

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	Engineering		
<b>DEPARTMENT</b>	Electrical Computer Engineering		
<b>LEVEL OF STUDY</b>	Undergraduate		
<b>COURSE UNIT CODE</b>	7.014	<b>SEMESTER</b>	7 <sup>th</sup>
<b>COURSE TITLE</b>	New Technologies in Education		
<b>COURSEWORK BREAKDOWN</b>	<b>TEACHING WEEKLY HOURS</b>	<b>ECTS Credits</b>	
Lectures	4		
Lab	1		
<b>TOTAL</b>	<b>5</b>	<b>4</b>	
<b>COURSE UNIT TYPE</b>	general knowledge specialization		
<b>PREREQUISITES</b>	No		
<b>LANGUAGE OF INSTRUCTION/EXAMS</b>	Greek and English		
<b>COURSE DELIVERED TO ERASMUS STUDENTS</b>	Yes		
<b>WEB PAGE (URL)</b>	<a href="https://eclass.hmu.gr/courses/ECE185">https://eclass.hmu.gr/courses/ECE185</a>		

## (2) LEARNING OUTCOMES

### Learning outcomes

The aim of the course is to offer the students the necessary knowledge about eLearning and the ways in which current digital technology is utilized in formal and non-formal learning processes. Modern digital learning infrastructures are presented, evaluated, and applied in practice by systematically analyzing the models of integration of new technologies in education.

Upon successful completion of the course the student will:

- have knowledge of the modern digital infrastructure used in education,
- be familiar with digital tools and specialized applications used in educational processes,
- be able to design upgraded teaching and learning services,
- be able to develop upgraded interactive educational material,
- have understood teaching strategies that can be effectively supported by new technologies and
- will be aware of the impact of new technologies in learning

### General Skills

Search, analysis and synthesis of data and information, using the necessary technologies

Adaptation to new situations

Autonomous work

Teamwork

Project planning and managements

Work in interdisciplinary environment

Promoting liberal, creative, and inductive/deductive thinking

### (3) SYLLABUS

#### Lectures

- Principles of educational technology and e-learning. Transformation of education, models of integration of new technologies in education, changes in the roles of educators and learners impact of new technologies in education.
- Pedagogical issues. Approaches to teaching-monitoring with the use of new technologies. Basic learning theories and teaching practices. Evaluation. Game based learning.
- Educational content. The importance of content in e-learning. Authoring tools, design, development, evaluation of educational material. Interactive educational material. Copyright. Metadata.
- Technological infrastructure / digital services for education. Learning Management Systems (LMS), Personal Learning Environments (PLE), Open Learning Resources (OER), Massive Open Interactive Courses (MOOCs), collaborative learning tools (web 2.0), and learning analytics.
- Open distance education: asynchronous teaching infrastructure, synchronous teaching infrastructure (videoconference).
- Interoperability. Standards and specifications for metadata (LOM, DC), electronic content distribution (AICC, SCORM, IMS CC), electronic evaluation (IMS QTI), monitoring (xAPI), access (WCAG) and security.

#### (4) TEACHING METHODS - ASSESSMENT

<b>MODE OF DELIVERY</b>	Face to face	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</b>	Open eClass Learning Management System (LMS) Discussions in Forum Personal statements in blog Wiki collaboration tool Gamification.	
<b>TEACHING ORGANIZATION</b>	<b>Method description/Activity</b>	<b>Semester Workload</b>
	Lectures	39
	Laboratory practice	13
	Team Projects	20
	Individual exercises	20
	Non-guided personal study and bibliography analysis	28
	<b>Total Contact Hours</b>	<b>120</b>
<b>ASSESSMENT METHODS</b>	<p>Language of Assessment: Greek / English</p> <p>Final grade:</p> <ol style="list-style-type: none"> <li>1. Lab exercises (20%)</li> <li>2. Assignments (40%)</li> <li>3. Project (40%)</li> </ol> <p>The assessment criteria are announced to the students at the beginning of the semester and are posted on course's website.</p>	

## (5) RECOMMENDED BIBLIOGRAPHY

*-Recommended bibliography:*

- *Education Using New Technologies. Pedagogical use of digital media in the educational process. Sofos A, Augerinos E, Karamouzis P, Christodoulidou L, Darra. Grigoris books.*
- *E-learning. Theoretical approaches and educational plans. Tzimogiannis A.*
- *The theory and practice of online learning. Anderson, T. (Ed.). (2008). Athabasca University Press (OER with Creative Commons license).*
- *Emergence and innovation in digital learning: Foundations and applications. Veletsianos, G. (Ed.). (2016). Athabasca University Press. (OER with Creative Commons license).*

*- Relevant Scientific Journals:*

- *Open Education*
- *International Conference in Open and Distance Learning*