COURSE OUTLINE

(1) GENERAL

SCHOOL	Social Sciences
ACADEMIC UNIT	Department of Cultural Technology and Communication
LEVEL OF STUDIES	Undergraduate
COURSE CODE	PLR 101 **SEMESTER** 2nd
COURSE TITLE	Multimedia Technologies

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
Lectures	2	3
Lab sessions	2	3
The organisation of teaching and the teaching methods used are described in detail at (d).	4	6

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Mandatory
PREREQUISITE COURSES:	N/A
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	https://eclass.aegean.gr/courses/131103/

(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 x Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area

x Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B x Guidelines for writing Learning Outcomes

- At the end of this course, the students will be able to:
- report with accuracy the basic characteristics of digital signals (differences from analog signals, signal digitization and related parameters).
- report with accuracy the signal digitization procedure and the related theory
- Identify the basic kinds of digital signals (1D and 2D).
- Be familiar with color theories, color models, transformations between color models, measurement codes and new technologies such as face detection, pattern recognition with image or video processing.
- Know the latest technologies in digital TV, image and video communication
- Describe the basic theory of signal compression.
- Know the abilities of interactive multimedia
- Composing algorithmic modules using modern freeware software for production, management, storage and retrieval of multimedia applications.
- Communicate efficiently their knowledge, which is acquired from the lectures, to colleagues in order to establish fruitful co-operations for creating cultural informatics applications.

- Collaboration and teamwork
- Search, analysis and synthesis of knowledge
- Promoting creative and inductive thinking
- Knowledge and know-how to other environments

(3) SYLLABUS

This course is an introduction to multimedia and the available technologies applied for multimedia systems development. The course is divided in three sections. The first section introduces the basic multimedia concepts, relevant terminology, as well as issues related to digitization of analogue data, compression, data storage and representation of various media: hypertext, graphics, audio and video. The second section introduces the required hardware and software for the creation, processing and reproduction of multimedia data. In addition, available authoring tools for the development of multimedia data are introduced. While the third section of the course is referred to issues related to the design and development of multimedia data. The course tutorials introduce multimedia authoring tools used in the market. A brief structure of the course is the following:

- Introduction to Multimedia Technologies
- Media and Multimedia
- Interactive Multimedia
- Historical Elements and Use of Multimedia
- Digitization of Analogue Signal
- Compression of Digital Information
- Representation, Manipulation and Types of Text, Color, Image, Graphics, Sound and Video
- Multimedia Information Systems
- 3D Graphics and Extended Reality
- Multimedia Application Development

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face supported by Distance learning infrastructure and approaches	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Open-source software for lab sessions	
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography,*	**Activity**	**Semester workload**
	Lectures	13 *2 hours =26 hours
	Lecture material preparation	13*5 hours = 65 hours
tutorials, placements, clinical practice, art	Lab sessions	13*2 = 26 hours

workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.	Lab session preparations	35 hours
	Course total	152 hours

The student's study hours for each learning activity are given as well as the hours of nondirected study according to the principles of the ECTS	

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, openended 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.*	The basic student assessment method is the final written exam which includes problem solving and short answer questions. Additionally, during laboratory sessions, exercises are discussed which are evaluated additively to the final score after examination during the end of the academic semester in the laboratory. The evaluation criteria are clearly stated during the first lecture and depicted in the educational material offered in the course's e-class.

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Σ. Ν. Δημητριάδης, Α. Σ. Πομπόρτσης, Ε. Γ. Τριανταφύλλου, Τεχνολογία Πολυμέσων, Α. Τζιόλα & υιοι Α.Ε., 2004, ISBN: 978-960-418-025-7.
- Γ. Δεληγιάννης, Διαδραστικά πολυμέσα και ψηφιακή τεχνολογία στις τέχνες, Εκδότης Νίκος Θερμός, 2007, ISBN: 978-960-6685-06-4.

- Related academic journals:

  x   IEEE Transactions on Multimedia x Multimedia Tools and
       Applications, Springer

  x   ACM Transactions on Multimedia Computing, Communications, and Applications
  x   Advances in Multimedia   An Open Access Journal Hindawi
  x   Multimedia Systems, Springer
  X   IEEE Multimedia