COURSE OUTLINE

(1) GENERAL

SCHOOL	Social Sciences
ACADEMIC UNIT	Cultural Technology and Communication
LEVEL OF STUDIES	Undergraduate

COURSE CODE	KPLR113	**SEMESTER**	6th

COURSE TITLE	3D Computer Graphics

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
Laboratories	1	2
The organisation of teaching and the teaching methods used are described in detail at (d).	3	5

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Elective Course/General Background
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	https://eclass.aegean.gr/courses/

(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*

At the end of this course, the students will be able to:
- Recognize how to use 3D graphics.
- Know 3D Graphics techniques and development tools.
- Design and visualize scenes in 3D graphics.
- Know modeling techniques,
- Create 3D models
- Know the digital sculpting modeling technique.
- Recognize the problems for the design and creation of 3D models for movies and games or applications.
- Acquire the basic skills to work with materials, textures and photorealism.
- Produce ready-to-use 3D graphic models.

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*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment new research ideas Others…	*…… Production of*
	…….

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working in an interdisciplinary environment
- Production of free, creative and inductive thinking
- Transfer of know-how in other environments
- Working independently
- Practice Critical Thinking

(3) SYLLABUS

The course aims at introducing students to the field of 3D graphics as well as familiarizing them with the basic principles of designing and creating applications. Emphasis is given on their use in the wider field of culture and the promotion of cultural asset. In this perspective, it focuses both on a theoretical exploration of the field as well as on the production of 3D graphics, especially for real-time applications.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of freely available to students software for laboratory education (Maxon Cinema 4D). Use ICT in teaching and communication with students.

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 nondirected study according to the principles of the ECTS*	Activity	Semester workload
	Lectures	13 *2 hours =26 hours
	Lectures' study	13*4 hours = 52 hours
	Laboratory Practice	13*1 hour = 13 hours
	Laboratory Preparation and semester assignment	34 hours
	Course total	125 hours

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.*	The evaluation of students' performance evaluation is conducted at the end of the semester with written exams in the form of open questions that require critical thinking. These examinations during the periods of January and September are the major evaluating methods. Students' performance is measured on a 1-10 scale (10: excellent). A final assignment for the course is released at the middle of the course, which is not mandatory, but it contributes to the final grade with a weighted percentage varying from 40% up to 50%. Students are familiar with the evaluation criteria from the first course lecture. All notes are stored in the course's area in University e-class platform (eclass.aegean.gr).

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- ΚΩΝΣΤΑΝΤΙΝΟΣ ΜΟΥΣΤΑΚΑΣ, ΙΩΑΝΝΗΣ ΠΑΛΙΟΚΑΣ, ΔΗΗΜΤΡΙΟΣ ΤΖΟΒΑΡΑΣ, ΑΘΑΝΑΣΙΟΣ ΤΣΑΚΙΡΗΣ, ΓΡΑΦΙΚΑ ΚΑΙ ΕΙΚΟΝΙΚΗ ΠΡΑΓΜΑΤΙΚΟΤΗΤΑ, ΣΕΑΒ, 2016, ISBN: 78-960-603-255-4.
- Θεοχάρης Θ., Μπεμ Α., Γραφικά: Αρχές και Αλγόριθμοι, Σ.ΑΘΑΝΑΣΟΠΟΥΛΟΣ & ΣΙΑ Ο.Ε. 1999, ISBN: 978-960-11-0004-3.
- H. Bakers, Γραφικά Υπολογιστών με OpenGL, Α. Τζιόλα & υιοι Α.Ε. 2010, ISBN: 978-960-418257-2.

- Related academic journals:

- IEEE Transactions on Visualization and Computer Graphics, IEEE Society
- ACM Transactions on Graphics
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems
- Visual Computer
- IEEE Computer Graphics and Applications
- Computers and Graphics Graphical Models