

COURSE OUTLINE

(1) GENERAL

SCHOOL	FINE ARTS		
ACADEMIC UNIT	FINE ARTS AND ART SCIENCES		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ETEΠ613		6th, 8th
COURSE TITLE	Computer Science for the Arts III		
INDEPENDENT TEACHING ACTIVITIES <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>		WEEKLY TEACHING HOURS	CREDITS
		3	3
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Skills development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes <i>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.</i> 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
Upon successful completion of the course, students are expected to: • Understand the parallel evolution of Informatics and Art. • Grasp the basic principles of Informatics. • Create artistic work using Informatics. • Apply audiovisual artistic creation as a way of perceiving events beyond sensory stimuli. • Develop a critical approach to the use of Artificial Intelligence in their artistic work.
General Competences <i>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 Adapting to new situations Decision-making Working independently Team work Project planning and management Respect for difference and multiculturalism Respect for the natural environment Showing social, professional and ethical responsibility and sensitivity to gender issues Criticism and self-criticism

<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>
Students are expected to acquire the following general competences:	
• Search for, analysis and synthesis of data and information, with the use of the necessary technology. • Working independently - Team work. • Project planning and implementation of contemporary Art projects. • Production of new research ideas. • Production of free, creative and inductive thinking. • Working in an interdisciplinary environment.	

(3) SYLLABUS

Informatics, due to its explosive growth in recent decades, has become a significant tool for artists. It is used in a wide range of expressive forms, including: Video Art, Internet Art, 2D and 3D animation, interactive installations, mapping projection, holographic projection, sound environments, audiovisual effects, and many other forms of contemporary artistic creation. The purpose of the lab-based course cluster "Informatics: Multimedia Art Applications" is to enable students to use technology as a means of expression to create artworks that go beyond simple multimedia presentation and move into more interactive forms such as Interactive Multimedia (interaction with the viewer) and Hypermedia (promoting a high degree of interaction between artwork and user). Part of the syllabus and deliverables (original artistic work) are organically connected to the syllabus and produced work of the workshop "Painting–3D Representations with New Technologies."

As part of the course "Informatics for the Arts III," the Processing software is introduced with the aim of familiarizing students with its working environment and fundamental commands. The course focuses on the development of artistic projects, primarily in the form of static and animated images. The pixel is approached as a fundamental structural unit of the digital image, which the user-artist manipulates creatively by defining its spatial placement and chromatic rendering in relation to time. Using Processing, the artist shifts from a passive role of digital artwork presentation to an active and creative engagement with the digital image, exploring the medium's limitless expressive potential. The course examines the basic commands of the Processing programming language, the possibilities offered by Artificial Intelligence, and the necessity for the user-artist to develop a critical stance toward digital tools and emerging technologies.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face. The teaching methodology is student-centered and constructive, based on active engagement through cooperative group methods (respecting diversity and equal opportunities), building on students' prior knowledge (including alternative conceptions discussed through dialogue), aiming at investigative-discovery learning, interdisciplinary approaches, development of critical and creative thinking, and metacognition.																						
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	In order to achieve the educational objectives, Information and Communication Technologies (ICT) are utilized alongside appropriate technical infrastructure, which includes a video projector, computers for the use of the Processing software, internet connectivity, and other supportive applications. ICT is integrated into the teaching process, laboratory-based instruction, and communication with students, thereby enhancing their active participation, interaction, and creative engagement.																						
TEACHING METHODS <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>	<table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Lectures</td><td>25</td></tr> <tr> <td>Laboratory Practice</td><td>25</td></tr> <tr> <td>Project</td><td>25</td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td>Course total</td><td>75</td></tr> </tbody> </table>	Activity	Semester workload	Lectures	25	Laboratory Practice	25	Project	25													Course total	75
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STUDENT PERFORMANCE EVALUATION <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>	At the end of the semester, students are required to present an individual or group artistic project (depending on its complexity), based on the use of the Processing software. Throughout the semester, all stages of each project's development are progressively presented — from the initial concept and inspiration to the final implementation — with the aim of fostering the active participation of all students in the creative and educational process.																						

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.	
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(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

Christiane Paul, *Digital Art*, Thames & Hudson, 2023
Forouzan, B. *Introduction to Computer Science*. Kleidarithmos Publications, 2024.
John Maeda, *Design by Numbers*, MIT Press, 1999
Lev Manovich, *The Language of New Media*, MIT Press, 2001
Stephen Wilson, *Information Arts: Intersections of Art, Science, and Technology*, MIT Press, 2003
Vasilakos, Athanasios. *Digital Forms of Art*. Tziolas Publications, 2008.
Yampolskiy, V. *Artificial Intelligence*. Epikentro Publications, 2024.

PROCESSING

Casey Reas & Ben Fry, *Getting Started with Processing*, O'Reilly Media, 2015
Casey Reas & Ben Fry, *Processing: A Programming Handbook for Visual Designers and Artists*, MIT Press, 2014
Christiane Paul, *Digital Art*, Thames & Hudson, 2023
Daniel Shiffman, *Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction*, Morgan Kaufmann, 2015
Daniel Shiffman, *The Nature of Code*, 2012
John Maeda, *Design by Numbers*, MIT Press, 1999
Lev Manovich, *The Language of New Media*, MIT Press, 2001
Stephen Wilson, *Information Arts: Intersections of Art, Science, and Technology*, MIT Press, 2003
<https://natureofcode.com>
<https://openprocessing.org>
<https://processing.org>
<https://thecodingtrain.com>