



UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
COMPUTER GRAPHICS AND SOUND

Academic Year 2026/2027

1. Organic Unit

Faculty of Architecture and Arts

2. Course

ARTS AND MULTIMEDIA COMMUNICATION

3. Cycle

1st

4. Course Unit

COMPUTER GRAPHICS AND SOUND (V3014)

5. Scientific Area

6. Curricular Year

2nd

7. Type of Curricular Unit / Semester

1st Semester



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8. Class type and workload (work time)

Theoretical classes:

Practical classes:

Theoretical-Practical Classes 30,00

Tutorial Guidance:

9. ECTS Credits

3,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutor JOÃO JOSÉ AMARO AMADOR LEITÃO

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

To give students the ability to understand the limitations of computer systems, allowing them to optimize their creative process in terms of sound and image technologies. Also, to provide a basic understanding of a multimedia creation tool.

15. Specific Objectives

To introduce students to the basic mechanisms of computing and explain their particularities and limitations. To explain the inner workings of hardware and software so that they understand what computer systems can and cannot do, and in what form.

16. Skills to be acquired

Students who successfully complete this course unit should understand the fundamentals governing computing, from the inner workings of computers, namely the transfer of information between various subsystems, the principles and limitations of communication with other systems, to the ability to understand and use software for generating graphic and audio content.

17. Teaching Methodology

Teaching will be based on the oral transmission of information related to the topics under study, possibly accompanied by visual presentations, followed by solving exercises appropriate to the problems being studied or by laboratory practices.



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18. Course Unit Program

- 1 - Introduction to Computing
 - 1.1 - Hardware: CPU, GPU, data bus throughput
 - 1.2 - Software: Applications and programming in Scratch
- 2 - Principles of Communication
 - 2.1 - OSI Stack
 - 2.2 - Properties and limitations of communication channels
 - 2.3 - Codecs
- 3 - Programming languages and their basic principles
- 4 - Content generation software

19. Assessment Methods

According to the school's internal regulations, the assessment will have either a continuous component or a frequency component. The continuous component will comply with the rules established by the appropriate regulations.

20. Didactic Resources

During class time, computers and software will be available to students. An overhead projector is available for theoretical presentations.

21. Sustainability Objectives

As sustainability objectives, within the framework and definition of the UN (United Nations), we can mention:

- 4. Quality Education, given the quality of teaching provided at Lusíada University, guaranteed by the Quality Assurance Department.
- 5. Gender Equality, guaranteed by the process defined by the "Code of Good Conduct for the Prevention and Combat of Harassment in the Workplace" as well as the "Complaint Portal."
- 9. Industry, Innovation, and Infrastructure: Computer

22. Keywords

Computing
Communications
Graphic content
Audio content



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23. Main Bibliography

Author(s): David A. Patterson, John L. Hennessy
Title: Computer Organization and Design
Edition: 6.^a edição Year: 2020
Local:
Publisher: Morgan Kaufmann
ISBN Code: 978-0128201091

Author(s): James F. Kurose, Keith W. Ross
Title: Computer Networking: A Top-Down Approach
Edition: 8.^a edição Year: 2021
Local:
Publisher: Pearson Education
ISBN Code: 978-9356061316

Author(s): Ze-Nian Li, Mark S. Drew, Jiangchuan Liu
Title: Fundamentals of Multimedia
Edition: 2.^a Year: 2014
Local:
Publisher: Springer
ISBN Code: 978-3319052892

24. Complementary Bibliography

Author(s):
Title:
Edition: Year:
Local:
Publisher:
ISBN Code:

Author(s):
Title:
Edition: Year:
Local:
Publisher:
ISBN Code:



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Ficha técnica MIP / MIP Datasheet	
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Autor / Author	Prof. Doutor JOÃO JOSÉ AMARO AMADOR LEITÃO
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Descritores / Descriptors	-
Colaborador(es) / Colaborator(s)	-
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