



UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
TECHNICAL LANGUAGES

Academic Year 2026/2027

1. Organic Unit

Faculty of Architecture and Arts

2. Course

ARTS AND MULTIMEDIA COMMUNICATION

3. Cycle

1st

4. Course Unit

TECHNICAL LANGUAGES (V3012)

5. Scientific Area

6. Curricular Year

1st

7. Type of Curricular Unit / Semester

2nd Semester



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8. Class type and workload (work time)

Theoretical classes:	
Practical classes:	
Theoretical-Practical Classes	30,00
Tutorial Guidance:	20,00

9. ECTS Credits

6,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutor NUNO SOTERO ALVES DA SILVA

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

Develop computer applications, taking into account the various technical languages and web programming used in the creation of art and multimedia products.

15. Specific Objectives

Provide students with the knowledge that will enable them to use multimedia product creation tools, combined with notions of web design, as well as website design standards and rules. Build a theoretical and practical frame of reference, in which specific concepts of multimedia production are applied to digital art, with practical examples that facilitate the acquisition of skills.

16. Skills to be acquired

Acquisition of skills in the area of Information and Communication Technologies to deal with the various languages appropriate for the creation of multimedia products and dynamic and responsive web pages. General knowledge of programming techniques, combined with notions of Web Design, as well as standards and rules for website design. Develop applications taking into account the needs that combine different types of digital content, such as graphics, audio, video, and interactive content.

17. Teaching Methodology

Theoretical presentation using slides and videos, as well as on-site demonstrations, followed by hands-on labs to apply the material learned and acquire skills in using the tools. The aim is also to stimulate students' creativity, encouraging them to develop their own models/prototypes.



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18. Course Unit Program

PART I - Programming concepts - Algorithms; Pseudocode and structured programming; Data flow diagrams Data types and variables. Arithmetic expressions. Logical expressions. Selection and iteration - Data structures; Arrays, stacks, queues, and lists; Trees and graphs Programming languages - Types of languages; Source code editing; (OOP) - Classes and objects; Attributes and methods; Encapsulation, inheritance, and polymorphism. Introduction to databases.

PART II - Introductory concepts to Web Design - Interface design; Defining a website's target audience; Web spaces: Public and private websites; Website architecture and navigability; Navigability elements: links, menus, breadcrumbs; Usability testing; Accessibility; The most common barriers on the Web - XML, HTML, and CSS; Flash; Other standards and entities; Accessibility testing; Auditing tools.

19. Assessment Methods

During the semester, students will be assessed in accordance with the assessment regulations. The assessment evaluates the work carried out in the different activities and is mainly based on a combination of individual theoretical-practical written marks and practical group work.

20. Didactic Resources

Audiovisual media will be used, exploiting new technologies, multimedia supports, and interactive presentations, namely:

Specific books and digital formats from the Online Knowledge Library (b-on);

Digital presentations (PowerPoint);

Computer, video projector, and the Moodle platform.

Adobe, Microsoft, and W3Schools software.

21. Sustainability Objectives

SDG 4 - Quality education: develops computational thinking, problem solving, and digital literacy, which are essential for basic training in communication and multimedia. SDG 5 - Gender equality: promotes an inclusive learning environment in technological areas, helping to reduce disparities in participation and academic success. SDG 9 - Industry, Innovation, and Infrastructure: introduces programming principles and multimedia structures that support computational efficiency and innovation.

22. Keywords

Digital art

Communication

Multimedia

Programming

Web Design



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23. Main Bibliography

Author(s): Pereira, Alexandre e Poupá, Carlos
Title: Linguagens WEB
Edition: 6^a Year: 2017
Local: Lisboa
Publisher: Sílabo
ISBN Code: 978-972-618-913-8

Author(s): Robbins , Jennifer
Title: Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics
Edition: 4^a Year: 2012
Local: New York
Publisher: O'Reilly
ISBN Code: 978-1449319274

Author(s): Pratt, Andy e Nunes, Jason
Title: Interactive Design: An Introduction to the Theory and Application of User-centered Design
Edition: 2^a Year: 2012
Local: Massachusetts
Publisher: Rockport
ISBN Code: 978-1592537808

24. Complementary Bibliography

Author(s): Pannafino , James
Title: Interdisciplinary Interaction Design: A Visual Guide to Basic Theories, Models and Ideas for Thinkin
Edition: 2^a Year: 2018
Local: Lancaster
Publisher: Assiduous
ISBN Code: 978-0982634820

Author(s): Krug, Steve
Title: Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability



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Edition: 3ª Year: 2013
Local: San Francisco
Publisher: New Riders
ISBN Code: 978-0321965516

Ficha técnica MIP / MIP Datasheet	
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