UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Digital Technologies

Academic Year 2024/2025

1. Organic Unit

Faculty of Architecture and Arts

2. Course

DESIGN

3. Cycle

1st

4. Course Unit

Digital Technologies (L5007)

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:	

9. ECTS Credits

3,00

10. Scientific Area Coordinator

11. Regent

Profª Doutora Arqtª CRISTINA MARIA DOS SANTOS NUNES PIRES CARAMELO GOMES

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

Develop in-depth knowledge of the conceptual framework underlying computer-aided design, combining the rigor of technical design and coherence of the pieces to be presented with the creativity that access to any and all graphic and alphanumeric information makes possible.
The access allowed by ICT to information allows and requires a greater level of creativity, as well as collaboration/communication with other professionals, regardless of their geographic location.

15. Specific Objectives

Study of the relationship between project design and ICT.
Self-discipline and confidence in the theoretical/practical knowledge acquired in order to extrapolate to practical exercises requested after classes.
Definition of work methodologies for the profitability and qualification of the information and knowledge produced.
Research/selection of the various technological solutions that can be used in each of the tasks to be performed throughout the development of the practical exercise.

16. Skills to be acquired

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Organization of the different types of information that make up the different stages that make up the design project.
Self-discipline and confidence in the theoretical and practical knowledge acquired in order to extrapolate to practical exercises requested after classes.
Identify the advantages and limitations of using ICT in project design.
Raising awareness of the advantages and disadvantages of new work organization methods.

17. Teaching Methodology

Classes will address different examples, motivating the capacity for analysis and subsequent debate of the issues presented.
As a support to research, students will develop practical work allowing knowledge of the relationship between theory and practice.

18. Course Unit Program

AutoCAD operating philosophy (version available at the Informatics Center) and working environment: pull-down menus, toolbars, Auto CAD window.
Two-dimensional coordinates: cartesian, polar, absolute, and relative.
Help tools: osnaps, AutoCAD modes (snap, grid, etc.), grips.
Drawing 2D entities: lines, arcs, circles, polygons.
Selection of entities: windows, polygons, fences, removal and addition of entities, filters.
Modifying 2D entities: copy, move, trim, extend, mirror, array.
Visualization of entities: Zoom and pan.
Properties and organization of entities: organization of the drawing by layers, colors, and line types.
Dimensioning and drawing annotation systems: using the Dimension menu.
Layout organization for plotting: paper space, model space, and plotting.
Introduction to SolidWorks.
SolidWorks operating philosophy and working environment: pull-down menus, toolbars.
Importation of files (dwg) as a working basis for creating parts. Introduction to modeling in SolidWorks.
Sketching. Create 3D models from 2D Sketches.
Extrude and revolve commands.
Creation, parameterization, and insertion of dimensions.

19. Assessment Methods

The evaluation will be based on attendance, participation, and commitment in the debates made during the privileged contact by the classroom space, in the execution and presentation of works of application of knowledge.
The assignments requested, as well as the written tests in compliance with the evaluation regulations of Universidade Lusíada, are the subject of a specific statement, following the most appropriate methodology for the objective to be achieved and duly scheduled.

20. Didactic Resources

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Bibliographical elements referred to in the program and syllabus of the discipline. These bibliographic elements correspond to the physical books presented in the bibliography and, above all, to the information available online through websites, YouTube content, etc. Databases available in the Media Library. Computer equipment, HW(PC) and SW, AutoCAD, ArchiCAD, and peripherals such as a plotter, printer, and scanner for presenting concepts and developing students' theoretical/practical work.

21. Sustainability Objectives

Good health and well-being
Quality education
Decent work and economic growth
Reduced inequality
Sustainable cities and communities
Climate action
Partnerships to achieve the goal

22. Keywords

Design
CAD
ICT
Multimedia
Technical drawing

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23. Main Bibliography

Author(s):	GARCIA, José Manuel		
Title:	AutoCAD 2015 & AutoCAD LT 2015 - Curso Completo		
Edition:		Year:	2014
Local:	Lisboa		
Publisher:	FCA		

Author(s):	COSTA, Américo		
Title:	Projecto 3D em Solidworks		
Edition:		Year:	2016
Local:	Lisboa		
Publisher:	FCA		

Author(s):	COSTA, Ricardo		
Title:	Desenho Técnico para Arquitetura, Engenharia e Construção		
Edition:		Year:	2018
Local:	Lisboa		
Publisher:	Engebook		

24. Complementary Bibliography

Author(s):	CADArtifex & Willis, J. & Dogra, S.		
Title:	AutoCAD 2020: A Power Guide for Beginners and Intermediate Users		
Edition:		Year:	2019
Local:	New York		
Publisher:	Independently published		

Author(s):	REYES, Alejandro		
Title:	Beginner's Guide to SOLIDWORKS 2020 - Level I		
Edition:		Year:	2019
Local:	New York		
Publisher:	SDC Publications		

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Título / Title	Course Unit Program 'TECNOLOGIAS DIGITAIS': Academic Year 2024/2025
Autor / Author	Profª Doutora Arqtª CRISTINA MARIA DOS SANTOS NUNES PIRES CARAMELO GOMES
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