UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
2D Digital Technologies

Academic Year 2024/2025

1. Organic Unit

Faculty of Architecture and Arts

2. Course

Architecture

3. Cycle

1st

4. Course Unit

2D Digital Technologies (01315)

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

9. ECTS Credits

2,00

10. Scientific Area Coordinator

Profª Doutora Arqtª CRISTINA MARIA DOS SANTOS NUNES PIRES CARAMELO GOMES

11. Regent

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

Develop in-depth knowledge of the conceptual framework underlying computer-assisted 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.
- Introduction to the concept of BIM.
- Self-discipline and confidence in the theoretical/practical knowledge acquired to extrapolate to practical exercises requested after classes.
- Definition of work methodologies for the profitability and qualification of the information and knowledge produced.
- Investigation/selection of the various technological solutions oriented to the requirements of architecture and the architect.

16. Skills to be acquired

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Organization of the different types of information that make up the different stages of the architectural 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 support to research, students will develop practical work allowing knowledge of the relationship between theory and practice.

18. Course Unit Program

. Revit Architecture operating philosophy and working environment: pull-down menus, toolbars, Revit Architecture window.

. Parameterization of the work area, and creation of views, sheets, and levels.

. Creation and parameterization of simple entities: walls, windows, doors, and slabs.

. Visualization and management of orthogonal views of the created elements.

. Edition of elements, management of dimensions in plan and elevations.

. Creation of composite elements such as stairs, ramps, terrain, and roofs.

. Management of object families.

. 3D model visualization systems: axonometric perspective (customized and pre-defined) and conic.

. Use of multiple views in the 3D model: use of print sheets.

. Obtaining 2D orthogonal and auxiliary views from three-dimensional models.

. Creating lights, cameras, calculating shadows, and materials.

. Creation of static and dynamic photorealistic images.

19. Assessment Methods

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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

Referenced bibliographical elements.
Databases available in the Media Library.
Computer equipment, HW (PC) and SW, AutoCAD, Revit, Max, 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

CAD
Revit
BIM
ICT
Multimedia
Technical drawing

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23. Main Bibliography

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

Author(s): Aubin. Paul
Title: Revit Essentials for Architecture: 2021 and beyond
Edition: 1ª Year: 2020
Local: Oak Lawn
Publisher: G3b Press

Author(s): WING, E.
Title: Revit 2020 for Architecture: No Experience Required
Edition: Year: 2019
Local: New York
Publisher: Sybex

24. Complementary Bibliography

Author(s): STINE, Daniel John
Title: Interior Design Using Autodesk Revit 2020
Edition: Year: 2019
Local: New York
Publisher: SDC Publications

Author(s): STINE, Daniel John
Title: Residential Design Using Autodesk Revit 2020
Edition: Year: 2019
Local: New York
Publisher: SDC Publications

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Título / Title	Course Unit Program 'TECNOLOGIAS DIGITAIS 2 D': Academic Year 2024/2025
Autor / Author	Profª Doutora Arqtª CRISTINA MARIA DOS SANTOS NUNES PIRES CARAMELO GOMES
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