UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
3D Digital Technologies

Academic Year 2025/2026

1. Organic Unit

Faculty of Architecture and Arts

2. Course

DESIGN

3. Cycle

1st

4. Course Unit

3D Digital Technologies (L5016)

5. Scientific Area

6. Curricular Year

2nd

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

Encourage the learning and use of technical applications for the construction, visualization, and presentation of the idea.
Mastery of tools for producing photorealistic renders as well as image processing programs is a basic requirement for presenting the project in a rigorous and attractive way, ensuring effective communication of the conceptual intention.

15. Specific Objectives

It is intended that students build virtual scenarios characterized by the attribution of physically correct materialities and lights to generate photorealistic images and animations that allow representing and presenting the design solution. The images produced will also be worked on in image processing software in order to create the requested ambiance or the purpose of their presentation/communication.

16. Skills to be acquired

To develop the knowledge and practice of the 3D MAX SW, by using sophisticated modeling and characterization tools, exploring the possibilities offered by technology for a project design, visualization, presentation, and higher quality communication.

Develop knowledge and practices that allow students to improve skills required by the job market.

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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

Three-dimensional modeling and photorealistic representation.
3DS MAX operating philosophy and working environment: pull-down menus, toolbars.
File import and/or simplified modeling as a working basis for creating photorealistic scenes. Importation of models (human figures, equipment, objects, etc...) from libraries available online. Materials. Material visualization. Material properties.
Redefinition of material properties. Assignment of materials to the different elements that make up the object. Lights.
Normal Lights and Photometric Lights. Ambient light and exposure light.
Lights visualization. Light properties. Reset light properties.
Natural light. Chambers. Creating and viewing a camera.
Camera properties. Redefinition of camera properties. Camera positioning adjustment. Animation. Animation setup. Realistic view.
Realistic visualization parameters adjustment.

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 practical works.
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

Bibliographical elements presented 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, Inventor, Revit, 3dMax, SolidWorks, and peripherals such as a plotter, printer, and scanner for presenting concepts and developing 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

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22. Keywords

CAD
3D MAX
ICT
Multimedia
Technical drawing

23. Main Bibliography

Author(s): BARATA, João & SANTOS, João
Title: 3DS MAX - Curso Completo
Edition: 2ª Year: 2013
Local: Lisboa
Publisher: FCA

Author(s): Murdock K.L.
Title: 3ds Max 2020 Complete Reference Guide
Edition: Year: 2019
Local: NY
Publisher: SDC Publications

Author(s): TICKOO, Sham
Title: Autodesk 3ds Max 2021 for Beginners: A Tutorial Approach
Edition: Year: 2020
Local: NY
Publisher: CADCIM Technologies

24. Complementary Bibliography

Author(s): Mamgain, P.
Title: 3ds Max 2020: A Detailed Guide to Modeling, Texturing, Lighting, and Rendering
Edition: Year: 2019
Local: NY
Publisher: Independently published

Author(s): BIRN, J.
Title: Digital Lighting and Rendering
Edition: Year: 2013
Local: NY
Publisher: New Riders

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Título / Title	Course Unit Program 'TECNOLOGIAS DIGITAIS 3D': Academic Year 2025/2026
Autor / Author	Profª Doutora Arqtª CRISTINA MARIA DOS SANTOS NUNES PIRES CARAMELO GOMES
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