UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Manufacturing Process

Academic Year 2025/2026

1. Organic Unit

Faculty of Architecture and Arts

2. Course

DESIGN

3. Cycle

1st

4. Course Unit

Manufacturing Process (L5021)

5. Scientific Area

6. Curricular Year

3rd

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	60,00
Tutorial Guidance:	

9. ECTS Credits

6,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutor PEDRO JOSÉ GENTIL- HOMEM CORREIA DA SILVA

12. Assistants

Designer JORGE MARIA FRANCO FRAZÃO DAMIÃO BRÍGIDA

13. Teaching Language

Portuguese

14. General Objectives

Stimulate research, design and development capabilities in manufacturing processes.
Develop procedures leading to innovation.
To underpin understanding of technological processes.

15. Specific Objectives

Apply design skills in real problem solving, and highly complex cases simulations.
Identify manufacturing processes, their mechanisms, their potential and limitations in face of manufacturing framework.
Learning through experimentation.
Foster efficient project design communication.

16. Skills to be acquired

Manage manufacturing processes on production development.
Position itself in an open pedagogical environment, favorable to development of curiosity and knowledge sharing.
Using research as a strategic tool to enhance innovation.
Knowing and articulating manufacturing processes associated with production, transformation and management.
Understand product lifecycles.

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17. Teaching Methodology

Participated theoretical sessions, supported by selected bibliography.
Audiovisual media presentations on manufacturing processes, cases of excellence in product design, etc.
Participated sessions: interaction with raw materials, analysis of new materials, tests, experimentation.
Field journeys.
Stimulating practice of workshop learning, through consolidated experimentation.
Tutorial follow-up on the development stages of exercises

18. Course Unit Program

Industrial transformation processes.
Theoretical and practical contents for perception and understanding of several manufacturing processes and respective behavior of materials.
Manufacturing processes associated with some contents dealt in the previous years (Ceramics, wood, polymer technology, glass, composite materials).
Extended development and understanding of the syllabus above mentioned.
Highly complex theoretical-practical exercises, based on support models or projects developed at UC Design III (model making or prototypes).
Visits to manufacturing plants.

19. Assessment Methods

Continuous evaluation based on 2 reports related to the theoretical contents taught, sent by email.
Practical exercise carried out, accompanied by a photographic report describing the manufacturing processes adopted.
Punctuality, attendance and compliance with the timetable, participation, commitment to classes.

20. Didactic Resources

Workshops.
Support texts.
Bibliography.
Field trips.
Audio-visual material.
Internet

21. Sustainability Objectives

Although the aim of teaching this course and of the degree is to fulfil goal n.4 - quality education - the foundational basis of the UL-Lisbon Design courses is the belief that Design is a tool for the sustainable promotion of society in its ethical, social and ecological aspects. Therefore, one of the global objectives of Design teaching at UL-Lisbon is to alert students to the importance of their future as Designers so that it fulfils ALL the 17 SDG defined by the UN.

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22. Keywords

Design;
Materials;
Technology;
Innovation;
Production.

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23. Main Bibliography

Author(s):	SILVA, Arlindo, DIAS, João, SOUSA, Luís,SILVA, Arlindo, DIAS, João, SOUSA, Luís,		
Title:	Desenho Técnico Moderno		
Edition:		Year:	2002
Local:	Lisboa		
Publisher:	Libel		

Author(s):	RODRIGUES, Jorge , MARTINS, Paulo		
Title:	Tecnologia Mecânica- Tecnologia de Deformação Plástica		
Edition:		Year:	2005
Local:	Lisboa		
Publisher:			

Author(s):	ASHBY, Michael		
Title:	Materials and Design: The Art and Science of Material Selection in Product Design		
Edition:	1ª	Year:	2002
Local:	London		
Publisher:	Butterworth-Heinemann		

24. Complementary Bibliography

Author(s):	PHILIPS, Leslie		
Title:	Design With Advanced Composite Materials		
Edition:		Year:	2000
Local:	London		
Publisher:	Design Council		

Author(s):	BRAUNGART, Michael, McDONOUGH, William,		
Title:	Cradle to Cradle Re-Making the way we make Things		
Edition:		Year:	2009
Local:	London		
Publisher:	Vintage		

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Autor / Author	Prof. Doutor PEDRO JOSÉ GENTIL- HOMEM CORREIA DA SILVA
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Descritores / Descriptors	-
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