



UNIVERSIDADE LUSÍADA
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Course Unit Program
Manufacturing Process

Academic Year 2024/2025

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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Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'PROCESSOS DE FABRICO': Academic Year 2024/2025
Autor / Author	Prof. Doutor PEDRO JOSÉ GENTIL- HOMEM CORREIA DA SILVA
Classificação / Classification	-
Descritores / Descriptors	-
Colaborador(es) / Colaborator(s)	-
Data Hora / Date Time	
Formato de dados / Data Format	Texto / Text, PDF
Estatuto de utilização / Usage	Acesso público / Public Access
Relação / Relation	Version 1,0
(c) Universidade Lusíada, 2024	