

MECHANICAL TECHNOLOGY (MACHINING AND CONFORMATION, FOUNDRY AND WELDING)

Code: 322113

Main Scientific Area: Mechanics and industrial processes

Lecturer: Luís Miguel Pinto de Queirós

Language of Instruction: Portuguese

Regime: S2

Contact Hours: 60h Total Workload: 105h

ECTS: 6,0

Objectives

This Curricular Unit aims to introduce students to mechanical construction technologies, providing them with the necessary knowledge to identify the most used manufacturing technologies in the metalworking sector, understand the requirements, advantages, and limitations of each one and be able to select the most suitable for particular application or product.

Learning Outcomes

Students who successfully complete this course will be able to:

- oIdentify and describe the most used manufacturing technologies in the metalworking sector;
- oUnderstand the characteristics, advantages and limitations of each of these technologies;
- oUnderstand the implications and requirements associated with the use of these technologies;
- oApply these concepts in the design of parts and assemblies, in order to enable their production within the established requirements.

Course Contents

- oIntroduction to metal materials processing technologies
- oIntroduction to machining technologies of metal ;
- oIntroduction to plastic forming technologies of metal ;
- oCriteria for theoretical and practical analysis of manufacturing processes, especially plastic forming and machining technologies.
- oApplication of acquired concepts to product design and production process development, including tools.

Recommended Bibliography

Apontamentos da disciplina.

Learning and Teaching Methods

The selected program contents were developed to include the most common metallic components production technologies in the metalworking industry. In this way, students who pass at the end of the UC should be able to recognize the different technologies, understand their functional principles, identify their particularities and the impact they will have on the technical design of parts with a view to their production.

Assessment Methods

The evaluation of the curricular unit will take into account:

o10% - attendance

o15% - individual work

o15% - group work

o20% - test 1

o20% - test 2

o20% - test 3

The minimum grade in each evaluation element will be 8.5 values.

The achievement in the curricular unit is granted when the final evaluation is equal to or greater than 9.5 values, on a scale from 0 to 20 values.