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Course Unit Program
Programming Engineering

Academic Year 2024/2025

1. Organic Unit

Faculty of Business and Economic Sciences

2. Course

Computer Engineering

3. Cycle

1st

4. Course Unit

Programming Engineering (L9031)

5. Scientific Area

6. Curricular Year

3rd

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: 20,00

9. ECTS Credits

6,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutor JOÃO JOSÉ AMARO AMADOR LEITÃO

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

With the growing complexity of software systems and the consequent preponderance of costs related to them compared to other ICT components, Software Engineering, in the mid-70s, acquired an increasingly significant importance as a way of guaranteeing greater systematization and control effort to develop new systems, as well as the maintenance of existing systems.

15. Specific Objectives

This course will address the most current techniques with regard to software development project management processes, using project management through the PERT/CPM methodology, multicriteria decision and function point analysis.

16. Skills to be acquired

Students should be able to: specify requirements, design and test complex software systems, using planning tools and management of available resources and manage a software project.

17. Teaching Methodology

Teaching will be based on the oral transmission of information related to the topics under study, followed by the resolution of appropriate exercises for the problems under study, supported by computational simulators.



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18. Course Unit Program

01. Introduction
02. Project management: PERT/CPM
03. Optimization of the projects created (reduction of costs and duration)
04. Multicriteria decision processes: TOPSIS method of multicriteria decision
05. Function point analysis method for determining the complexity of software development.

19. Assessment Methods

The continuous assessment methodology is expressed in the General Regulation for Continuous Assessment in force.

20. Didactic Resources

Microsoft Project

21. Sustainability Objectives

4. Quality Education
5. Gender Equality
9. Industry, Innovation and Infrastructure

22. Keywords

Software Engineering
PERT
CPM
Function point analysis
Multicriteria decision



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23. Main Bibliography

Author(s): Ian Sommerville
Title: Software Engineering
Edition: 10^a Year: 2015
Local: Scotland
Publisher: Addison-Wesley

Author(s): Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli
Title: Fundamentals of Software Engineering
Edition: 2^a Year: 2009
Local:
Publisher: Prentice Hall

Author(s): António Miguel
Title: Gestão de Projectos de Software
Edition: 5^a Year: 2015
Local: Lisboa
Publisher: FCA

24. Complementary Bibliography

Author(s): Howard Podeswa
Title: UML For The IT Business Analyst
Edition: 2^a Year: 2009
Local:
Publisher: Course Technology PTR

Author(s): David L. Olson
Title: Information Systems Project Management
Edition: Year: 2014
Local:
Publisher: Business Expert Press



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Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'ENGENHARIA DA PROGRAMAÇÃO': Academic Year 2024/2025
Autor / Author	Prof. Doutor JOÃO JOSÉ AMARO AMADOR LEITÃO
Classificação / Classification	-
Descritores / Descriptors	-
Colaborador(es) / Colaborator(s)	-
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