



UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Complements of Programming

Academic Year 2024/2025

1. Organic Unit

Faculty of Business and Economic Sciences

2. Course

Computer Engineering

3. Cycle

1st

4. Course Unit

Complements of Programming (L9013)

5. Scientific Area

6. Curricular Year

2nd

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 30,00

Tutorial Guidance: 20,00

9. ECTS Credits

6,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutora MARIA INÊS VASCONCELLOS FURTADO

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

To introduce students to the fundamentals of C# programming and the .NET ecosystem, enabling them to develop basic applications and understand the principles of object orientation and data structures.

15. Specific Objectives

By the end of the course, students should be able to apply programming logic concepts in C#, effectively use classes, methods, and control structures, as well as handle files, interface with databases, and begin developing graphical interfaces and simple games.

16. Skills to be acquired

Students will develop skills to write structured code in C#, understand and apply object-oriented principles, efficiently manage data using collections and LINQ, integrate applications with databases using ORM, and create basic graphical interfaces.

17. Teaching Methodology

1. Theoretical classes cover the subjects with specific notes, practical examples and bibliographical references.
2. Practical classes are dedicated to practicing the functional and logical paradigms using the C# language.



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18. Course Unit Program

1. Introduction to C# and .NET Discipline
2. Recapitulation of Programming Logic in C#
3. Classes, Attributes, and Methods in C#
4. Encapsulation, Memory, Arrays, and Lists
5. Enumerations, Composition, Inheritance, and Polymorphism, Exception Handling
6. File Handling
7. Interfaces, Generics, Lambda Expressions, Delegates, LINQ, Design Patterns
8. Database Integration, ORM, CRUD Operations
9. GUI Development and Introduction to Game Development

19. Assessment Methods

Continuous Assessment (CA) follows the assessment regulations of the Lusíada University of Lisbon, with emphasis on the following compulsory components:

1. Two practical assessment points.
2. Work to be developed by the students

20. Didactic Resources

Computers with Visual Studio in all classes, plus theory to precede practical classes

21. Sustainability Objectives

22. Keywords

1. Generic types
2. Abstract classes
3. Web API
4. Inheritance



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23. Main Bibliography

Author(s): Damon McGill
Title: Interfaces and Abstract Classes Using C#: Object Oriented Programming
Edition: Year: 2015
Local: Amazon
Publisher: Kindle Books

Author(s): Ian Griffiths
Title: Programming C# 10
Edition: Year: 2022
Local:
Publisher: O'Reilly Media, Inc.

Author(s): Joseph Albahari
Title: C# 10 in a Nutshell
Edition: Year: 2022
Local: Sebastopol
Publisher: O'Reilly Media, Inc

24. Complementary Bibliography

Author(s): Microsoft
Title: C# Language Specification
Edition: Year:
Local: On-line
Publisher: <https://learn.microsoft.com/pt-br/dotnet/>

Author(s): Stack Overflow on line community
Title: Stack Overflow - Where Developers Learn, Share, & Build Careers
Edition: Year:
Local:
Publisher: <https://stackoverflow.com/>



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Ficha técnica MIP / MIP Datasheet	
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Autor / Author	Prof. Doutora MARIA INÊS VASCONCELLOS FURTADO
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