OBJECT ORIENTED PROGRAMMING

Degree in Electrical and Computer Engineering

Code: 10122

Main Scientific Area: Science and Technology Program

Lecturer: Célio Domingos de Faria Carvalho

Language of Instruction: Portuguese

Regime: S1

Contact Hours: 60h Total Workload: 100h

ECTS: 6,0

Objectives

This curricular unit will consist of the fundamental concepts on objects oriented programming. The students should be able to understand and analyze problems of medium complexity, and to plan and develop structured solutions using the object oriented programming paradigm (OOP).

Learning Outcomes

Students should be able to analyze problems and propose an implementation in a object oriented programming language. They should be able to define solutions using correctly essential concepts of OOP.

Course Contents

Fundamentals of object oriented programing

Basic concepts C++

Classes and objects

Polymorphism and inheritance

Builders and Destroyers.

File manipulation C++

Graphic applications Qt

Templates

Containers

Recommended Bibliography

Starting out with C++, From Control Structures through Objects, Eighth Edition, Tony Gaddis, 2015,

Pedro Guerreiro, Programação Com Classes em C++, FCA, Lisboa, 2000. ISBN=972-722-204-8

Koenig, Andrew Moo, Barbara E. – Accelerated C++: Practical Programming by Example. 1 ed. AddisonWesley,

2000. ISBN 978-020-170-353-5

Meyers, Scott – Effective C++: 55 Specific Ways to Improve Your Programs and Design. 3 ed. AddisonWesley,

2005. ISBN 978-032-133-487-9

Learning and Teaching Methods

The syllabus was defined with the aim to give to the students the ability of learning an object oriented programming language. The presentation, exploration and implementation of object oriented programming language is addressed in first pat of the program syllabus. The remaining points are dedicated to learning the programming language.

Assessment Methods

The evaluation has a theoretical component and a practical component. The theoretical component consists of a test or an exam. The practical component consists of a practical work involving a written report, the implementation of a computer solution, and an oral defense.

The final evaluation follows the following equation: AF = 50%*CT + 50%*CP

AF: final evaluation

CT: grade obtained on the test/exam (CT>= 9.5)

CP: grade obtained in the practical work (CP>= 9.5)