PROGRAMMING LANGUAGES

Code: 322060

Main Scientific Area: Programming and software development

Lecturer: Célio Domingos de Faria Carvalho

Language of Instruction: Portuguese

Regime: S1

Contact Hours: 50h Total Workload: 90h

ECTS: 5,0

Objectives

This course unit pretends to teach students with the initial knowledge of application development, solving real life small problems.

Learning Outcomes

In this course unit, students should acquire the ability to create simple C applications based on simple algorithms.

Course Contents

Introduction and basics
Algorithm and programming
Instruction types (sequence, decision and repetition)

Developer Tools
Dev C++ (BLOODSHED) (programação em C)

Start programming

Rules and terminologies
Constants and variables
Types (data types)
Mathematical Operators
Logical operators
Sequence instructions
Data input / output (read write)
Attribution
Decision instructions
Repetition instructions
Modularization (organizing code)
Arrays
StructsObject Oriented Programming
Basics

Recommended Bibliography

Damas, Luís (1999), “Linguagem C”, 20.ª edição, FCA – Editora de Informática Lda., série Tecnologias de Informação.

Vasconcelos, J.B., Carvalho, J.V. (2005), “Algoritmia e Estruturas de Dados”, Centro Atlântico.

Kernighan and Ritchie (1988), “The C Programming Language (ANSI C)”, 2.nd edition, Prentice Hall

Michael Vine, “C Programming for Absolute beginner”

Paulo Valentim, “Manual de C"

Learning and Teaching Methods

UC contents have been defined to help students getting started on programming (initiation degree).

The basic knowledge needed for programming are discussed in the first part of the program. Then themes like data types and programming typical instructions are presented.

Assessment Methods

VARIABLES
[TI] individual test (continual assessment)
[TI.CP] presented solution grade of TI (presented solution) (practical component)
[TI.CT] individual oral test (theoretical component)
[PR] Project class final grade
[TE] individual test (exam assessment)
[TE.CP] presented solution grade of TE (presented solution) (practical component)
[TE.CT] individual oral test (theoretical component)
[NF] final grade
INDIVIDUAL WORK (TI)
Individual Work [TI] presentation, defense and approval are required;
The individual defense of [TI] will be made in the context of an oral test [TI.CT] where questions related to the matter taught in the UC during the semester, will be asked to the student;
The non-delivery of [TI.CP] on the date defined by the teacher, or the absence of presence at the date set for the oral test [TI.CT], corresponds to non-delivery of [TI] (ie [TI] = zero) ;
Deliveries or improvements will not be accepted after the date defined by the teacher for the delivery of TI.CP;
The [TI] is only valid at the time of continuous evaluation;
INDIVIDUAL WORK (TE)
Individual Work [TE] presentation, defense and approval are required;
The individual defense of [TE] will be made in the context of an oral test [TE.CT] where questions related to the matter taught in the UC during the semester, will be asked to the student;
The non-delivery of [TE.CP] on the date defined by the teacher, or the absence of presence at the date set for the oral test [TE.CT], corresponds to non-delivery of [TE] (ie [TE] = zero) ;
Deliveries or improvements will not be accepted after the date defined by the teacher for the delivery of TE.CP;
The [TE] is valid only in the evaluation of the respective examination period;
CONTINUAL ASSESSMENT
[NF] = 20%[TI.CP] + 50%[TI.CT] + 30%[PR]
Approval if [NF] >= 10;
Minimum grade to get approved: [TI.CP] >= 10; [TI.CT] >= 10; [PR] >= 10.
EXAM ASSESSMENT (APPEAL, SPECIAL OR OTHER)
[NF] = 10%[TE.CP] + 60%[TE.CT] + 30%[PR]
Approval if [NF] >= 10;

Minimum grade to get approved: [TE.CP] >= 10; [TE.CT] >= 10; [PR] >= 10.
Individual Work statement will be published in moodle 5 days before the defined date to exam. Delivery of [TE.CP] and oral test will be made on the exame day (i.e. [TE.CT]).