INSTITUTO POLITÉCNICO DE BRAGANÇA

Course Unit	Informatics		Field of study	Informatics
Bachelor in	Accounting		School	School of Technology and Management
Academic Year	2023/2024	Year of study	1	Level	1-1	ECTS credits	6.0
Type	Semestral	Semester	1	Code	9056-514-1103-00-23

Workload (hours)	162	Contact hours	T	-	TP	-	PL	60	TC	-	S	-	E	-	OT	-	O	-

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s)	Isabel Maria Lopes, Marisa Cristina Torrado Ortega, Nuno Miguel Rodrigues Carvalho

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Recognise the need and advantages of automatic processing of information
2. Identify the potential and limitations of a spreadsheet
3. Use consistent tools for processing and analysis of large volumes of data
4. Take advantage of the advanced data manipulation mechanisms of a spreadsheet
5. Solve practical problems using automatic data processing tools
6. Set structures and models of basic data to support the modelling of problems within the experimental sciences
7. Create and use databases in Access

Prerequisites

Before the course unit the learner is expected to be able to:
Demonstrate basic skills on the use of the Windows operating system

Course contents

Introduction to Excel; Formulas and functions; Charts; Data analysis tools; Databases

Course contents (extended version)

1. Introduction to Excel
    - Contextualization and domains of use
    - Structure of Microsoft Excel document
    - The interface of Microsoft Excel
    - Entering and editing data
    - Copying and moving
    - Formatting
    - Managing worksheet
    - Data validation
    - Importing data
2. Formulas and functions
    - Creating and editing formulas
    - Working with names and cells reference
    - Syntax of the functions
    - Inserting functions on a formula
    - Formula auditing
    - Functions: date/time, math, statistical, logical, lookup, information and text
3. Charts
    - Creating charts
    - Formatting charts
    - Advanced charting
4. Data analysis tools
    - Sorting and filtering
5. Databases
    - Introduction to databases and to database management systems
    - The relational model
    - Normal forms and Normalization
    - Entity-Relationship modeling
    - Creation of databases in Access

Recommended reading

1. Frye, C. (2015). Microsoft Excel 2016 Step By Step. Microsoft Press.
2. Marques, P. C. (2011). Exercícios de Excel 2010. FCA.
3. Neves, J. (2011). Fundamental do Access 2010. FCA.
4. Rodrigues, L. S. (2016). Utilização do Excel para Economia e Gestão. FCA.
5. Sousa, M. J. (2011). Excel 2010 - Domine a 110%. FCA.

Teaching and learning methods

Presentation of content using various methodological ways, including: expositive method, study of texts and projects. Analysis and discussion of problematic questions, in small groups or a large group. Resolution of problems.

Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final)
    - Intermediate Written Test - 70%
    - Practical Work - 30%
2. Alternative 2 - (Regular, Student Worker) (Supplementary, Special)
    - Final Written Exam - 100% (Includes a supplementary exercise intended to replace Practical Work)

Language of instruction

Portuguese

Electronic validation

Isabel Maria Lopes	Tiago Miguel Ferreira Guimaraes Pedrosa	Oliva Maria Dourado Martins	José Carlos Rufino Amaro
06-10-2023	07-10-2023	11-10-2023	20-10-2023