INSTITUTO POLITÉCNICO DE BRAGANÇA

Course Unit	Organization and Data Processing			Field of study	Training in Teaching Area		
Bachelor in	Basic Education			School	School of Education		
Academic Year	2022/2023	Year of study	1	Level	1-1	ECTS credits	6.0
Type	Semestral	Semester	1	Code	9853-531-1105-00-22		

Workload (hours)	162	Contact hours	T -	TP 54	PL -	TC -	S -	E -	OT 18	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): Manuel Celestino Vara Pires

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Identify statistical concepts and procedures in diversified contexts.
2. Relate statistical concepts and procedures in diversified contexts.
3. Apply statistical concepts and procedures in diversified contexts.
4. Work independently, researching, collecting, interpreting and presenting information.
5. Solve mathematical problems, communicating their own ideas and interpreting the other people's ideas.

Prerequisites

Before the course unit the learner is expected to be able to:
1. Read and interpret mathematical information.
2. Relate and use basic statistical concepts.

Course contents

1. Data and variables. 2. Tables and graphs. 3. Measures of central tendency. 4. Measures of dispersion. 5. Correlation and linear regression.

Course contents (extended version)

1. Data and variables.
   - Types of data, types of variables.
2. Tables and graphs.
   - Frequency distribution, Venn diagram, Carroll diagram, tally chart.
   - Bar chart, line chart, pie chart, pictogram, stem-and-leaf display.
   - Histogram, box plot, scatter plot.
3. Measures of central tendency.
   - Mode, median, quartiles, percentiles, mean.
4. Measures of statistical dispersion.
   - Range, interquartile range, average absolute deviation, variance, standard deviation.
5. Correlation and linear regression.

Recommended reading

1. Instituto Nacional de Estatística, I. P. (2009). Um mundo para conhecer os números. INE, I. P. & ES Tomaz Pelayo & DREN.
2. Martins, M. E., & Ponte, J. P. (2011). Organização e tratamento de dados. DGIDC, Ministério da Educação.
3. Murteira, B., Ribeiro, C., Silva, J., & Pimenta, C. (2004). Introdução à estatística. McGraw Hill.
4. Palhares, P. (Coord.) (2004). Elementos de matemática para professores do ensino básico. Lidel.
5. Palhares, P., Gomes, A., & Amaral, E. (Coords.) (2011). Complementos de matemática para professores do ensino básico. Lidel.

Teaching and learning methods

1. Content exploration using, for example, explanation processes, texts discussions, writing reports or researching work. 2. Discussions of themes in small or large groups. 3. Individual or group work. 4. Resolution of tasks of different type and nature.

Assessment methods

1. Continuous assessment - (Regular, Student Worker) (Final)
   - Intermediate Written Test - 30% (Written summative test.)
   - Intermediate Written Test - 30% (Written summative test.)
   - Work Discussion - 40% (Implementation and discussion of the proposed tasks or the individual or group works.)
2. Assessment by examination - (Regular, Student Worker) (Supplementary, Special)
   - Final Written Exam - 100%

Language of instruction

Portuguese

Electronic validation

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12-12-2022	19-12-2022	20-12-2022	05-01-2023