

**COURSE DATA****Data Subject**

Code	33247
Name	Statistics
Cycle	Grade
ECTS Credits	6.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
1312 - Degree in Physical Activity and Sport Sciences	Faculty of Physical Education and Sport Sciences	1	Other cases
1331 - Degree in Physical Activity and Sport Sciences (Ontinyent)	Faculty of Physical Education and Sport Sciences	1	Second term

Subject-matter

Degree	Subject-matter	Character
1312 - Degree in Physical Activity and Sport Sciences	5 - Statistics	Basic Training
1331 - Degree in Physical Activity and Sport Sciences (Ontinyent)	5 - Estadística	Basic Training

Coordination

Name	Department
SANTONJA GOMEZ, FRANCISCO JOSE	130 - Statistics and Operational Research

SUMMARY

Statistical matter is a basic subject 1st year Bachelor of Science in Physical Activity and Sport. As shown in competition, it aims to bring students to Statistics in order to acquire skills to plan statistical studies to prepare and submit a study report made. Statistics course is conceived as an essential material for the formation of any experimental scientist. It aims to provide students with the tools and concepts needed to record the facts, analyze them in some of its aspects, express mathematically and investigate the relationships between these facts, if possible, make laws or draw conclusions. For this, two blocks will be addressed: Descriptive Statistics: description of the characteristics of a sample. Inference: Using data from a sample to infer results or test hypotheses about the population to which they belong



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

No previous knowledge or specified enrollment restrictions with subjects in the curriculum.

OUTCOMES

1312 - Degree in Physical Activity and Sport Sciences

- Describe and synthesise the dataset observed in the experiment.
- Analyse the data observed using appropriate software.
- Correctly interpret the results provided by the software used.
- Prepare and issue a report of the study conducted.

LEARNING OUTCOMES

The student, to study the subject Statistics, will know the statistical problems most frequently used, acquire the necessary skills to plan statistical studies, both descriptively and with the most basic procedures of statistical inference (estimation and hypothesis testing), properly synthesize set of data, analyze it with the right software, correctly interpret the results and prepare a report of the study conducted.

DESCRIPTION OF CONTENTS

1. Introduction to Statistics

Concept and classification of Statistics. Measurement scales. basic definitions. Sampling.

2. Sample description

Organization of data: frequency tables and graphs. numerical description of a sample: measures of central tendency, position, dispersion and form



3. Relationship between two variables

Bi-dimensional frequency distribution. graphic representations. marginal distributions. Concept and types of correlation. Linear correlation coefficient. Linear Regression straight least squares regression

4. Description of a population: Probability distributions

Probability concept. Discrete and continuous probability distributions. Distribution of the sample mean. Central limit theorem.

5. inferential analysis of a population mean

point estimate. Confidence intervals for the population mean. Selection of sample size. Introduction to contrast hipótesis. Contrastes on average

6. Inference average in two or more populations

Introduction. independent samples and paired samples. Confidence interval and hypothesis testing for the difference of two means. Introduction to analysis of variance of a factor

7. Categorical Data Analysis

Introduction. Confidence interval of proportion. Contrast on a proportion. Comparison of two proportions. Contingency tables

8. practicals in Computer Room

1. Introduction to R.
2. graphic and numerical analysis of a data set
3. A relationship between two variables: setting and correlation
4. Inference on the mean of a population
5. Analysis of two samples
6. Categorical Data Analysis



WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	45,00	100
Classroom practices	15,00	100
Study and independent work	50,00	0
Preparation of evaluation activities	25,00	0
Preparing lectures	10,00	0
Resolution of case studies	5,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

The matter is structured in 3 hours of theory and one practice per week (in groups A and B, will be held two hours practice every other week, over a quarter). Theoretical sessions: will be discussed each of the topics covered by the program of the subject and explained some problems issues will be solved. These issues and relationship problems, students will be provided through the virtual classroom.

Practical sessions: Practices are held in the computer room with statistical software R topics explained in the theoretical sessions. The relationship practices students will be provided through the virtual classroom.

EVALUATION

A theoretical-practical exam will be carried out, the resolution of which may require the interpretation of different results presented in the standard format of the statistical program used. It will account for 70% of the final grade.

There will be practical partial tests that will account for 30% of the final grade. The mark of the partial tests will be maintained in the second call.

To pass the subject, it will be necessary to obtain a grade equal to or greater than 5 (out of 10) in the theoretical-practical exam and have an average grade of 5 (out of 10) of the partial tests.

REFERENCES

Basic

- Statistics for Sports and Exercise Science. A practical approach.
Newell, J; Aitchison, T. and Grant, S.
Taylor and Francis, 2010.

Guía para el análisis estadístico con R-Commander



Alea, M.V.; Jiménez, E., et al.
Universitat de Barcelona. 2014

Using the R-Commander: A Post-and-Click interface for R.
Fox, J.
CRC Press, 2016

OpenIntro Statistics.
Díez, D.; Bar, C.D. et al.
OpenIntro, 2022. (Disponible en openintro.org)
