



Universitat de Lleida

# DEGREE CURRICULUM **BIostatISTICS**

Coordination: MARÍN SANGUINO, ALBERTO

Academic year 2023-24

**Subject's general information**

<b>Subject name</b>	BIostatistics			
<b>Code</b>	100605			
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Bachelor's Degree in Human Nutrition and Dietetics	1	COMMON/CORE	Attendance-based
	Double bachelor's degree: Degree in Human Nutrition and Dietetics and Degree in Physiotherapy	3	COMMON/CORE	Attendance-based
<b>Course number of credits (ECTS)</b>	6			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRAULA		TEORIA
	<b>Number of credits</b>	3		3
	<b>Number of groups</b>	2		1
<b>Coordination</b>	MARÍN SANGUINO, ALBERTO			
<b>Department</b>	BASIC MEDICAL SCIENCES			
<b>Teaching load distribution between lectures and independent student work</b>	Classroom 60 Lectures 30 Practices and Seminars 30			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Catalan /Spanish			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
GABAS MASIP, JOEL	joel.gabas@udl.cat	3	
MARÍN SANGUINO, ALBERTO	alberto.marin@udl.cat	3	
RAMOS GARCIA, LUIS ISAAC		3	
SORRIBAS TELLO, ALBERT	albert.sorribas@udl.cat	0	

## Subject's extra information

It is a subject of the Human Nutrition and Dietetics degree taught during the second semester of the first academic year. This course aims to introduce students into statistical methods that allow to study the phenomena where variability is an important component. Without this method, it is very difficult to generalize the results observed and determine their significance. This is the case of observational and experimental studies in the field of health sciences, where individual variability and the many factors that influence each situation makes it difficult to analyze the problem intuitively.

Learning the basics of statistical tools and their use in practical situations of interest is a key point in a nutritionist career. As a methodological tool, Statistics plays a main role in health sciences, being fundamental to professional performance based on the best scientific evidence.

In this subject we will also work general competences like use of information technology, group work, English, and oral presentations.

## Learning objectives

To pass the course, students should know how to use the basic concepts of statistical method in relation to specific problems of professional activity in human nutrition and dietetics, with particular attention to the critical appraisal of the results of observational and experimental studies.

As for skills, students who pass the course should be able to:

- Identify and know the main features of the designs used in health studies.
- Perform descriptive data analyses.
- Estimate and interpret probabilities of events.
- Estimate confidence intervals in the case of a group or in the comparison of groups.

In addition, students who pass the course must achieve the following skills:

- Interpret and describe the results of a specific study using descriptive statistics tools.

- Gather information, relate it to their knowledge, synthesize and report it.
- Using a statistical software to analyze data.
- Teamwork.
- English to understand scientific literature.

## Competences

### Specific skills

SS3 Knowing statistics applied to health science.

### General skills

GS3. Acknowledging own limits and the need to maintain and update professional competence, giving special consideration to independent and continual learning of new skills, products and techniques in nutrition and food science as well as quality assurance.

GS5. Knowing, critically assessing and using sources of information relevant to nutrition, lifestyle and health.

### Basic Skills

BS1 Demonstrating knowledge of a field starting from the basis of general high school education up to advanced textbook level, including some cutting edge aspects.

BS3 Being able to collect and interpret relevant data to achieve conclusions on relevant social, scientific or ethical matters.

BS5 Developing the learning skills necessary to continue their studies in an autonomous manner.

### Cross-sectional Skills

CS2 Mastering a foreign language.

CS3 Mastering e-skills.

CS5. Acquiring a basic understanding of scientific thinking.

## Subject contents

1. **Statistics, Data, and Statistical Thinking**
2. **Descriptive Statistics and Exploring Data**
3. **Study Designs**
4. **Probability, Bayes' Rule**
5. **Probability Distributions**
6. **Statistical Inference**
7. **P-values**
8. **Statistical Tests**
9. **Linear Regression Analysis**
10. **Analysis of Variance, ANOVA**

## Methodology

To achieve the objectives and acquire the competences the following activities will be scheduled :

## Lectures (CM for classes magistrals)

They are intended to expose the contents and highlight those most important aspects of the use of Statistics in NHD.

## Seminars (Sem)

The purpose of the seminars is for students to better understand statistical concepts and to become familiar with the applications of statistical methodology. They consist of solving exercises, analyzing data and interpreting the results.

## Computer Activities (Inf)

The R statistical software and the R Studio platform will be used to analyze data from clinical or population studies. The statistical concepts presented in the lectures and seminars will be explored in depth.

## Tutorials (Tut)

They will serve to answer questions and highlight those aspects of Biostatistics most applied to NHD.

## Evaluation

- 1st Exam 20% **NO recovery exam**
- 2nd Exam 45% **Es obligatori presentar-se recuperació si la nota és inferior a 5. La nota ha de ser superior al 5 per fer mitjana.**
- Assignments 35%

## Bibliography

### Basic references:

Sorribas A, Abella F, Gómez X, March J. (1997) Metodologia estadística en ciències de la salut: Del disseny de l'estudi a l'anàlisi de resultats. Lleida: Edicions de la Universitat de Lleida.

The Sorribas et al. book can be downloaded from [www.bioestadistica.org](http://www.bioestadistica.org).

Daniel WW. (1995) Bioestadística: base para el análisis de las ciencias de la salud. México: UTEMA.

### Complementary references:

Bland M (2000). An introduction to medical statistics, 3rd ed. Oxford: Oxford University Press.

Altman DG. (1990) Practical statistics for medical research. Chapman & Hall/CRC; 1st ed.

Gonick L, Smith W. The cartoon guide to statistics. HarperCollins Publishers, Inc. New York, 1993.

### Additional materials

Notes and materials that will be used during the course will be placed in the folder Continguts of Sakai.