Universitat de Lleida

DEGREE CURRICULUM

BIOSTATISTICS

Coordination: SORRIBAS TELLO, ALBERT

Academic year 2022-23

BIOSTATISTICS 2022-23

Subject's general information

Subject name	BIOSTATISTICS
Code	101605
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION
Typology	

Degree	Course	Character	Modality
Bachelor's Degree in Biotechnology	1	COMMON/CORE	Attendance-based

Course number of credits (ECTS)	6
Type of activity, credits, and groups	

Activity type	PRAULA	TEORIA
Number of credits	3	3
Number of groups	2	1

Coordination	SORRIBAS TELLO, ALBERT
Department	BASIC MEDICAL SCIENCES
Teaching load distribution between lectures and independent student work	At Class 60 hours. At Home 90 hours
Important information on data processing	Consult this link for more information.
Language	English, Catalan, Spanish
Distribution of credits	Theoretical classes 50% Seminars 50%

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Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BASALLO CLARIANA, ORIOL	oriol.basallo@udl.cat	1	
GABAS MASIP, JOEL	joel.gabas@udl.cat	4	
LUCIDO , ABEL	abel.lucido@udl.cat	1	
SORRIBAS TELLO, ALBERT	albert.sorribas@udl.cat	3	

Learning objectives

Statistical techniques are essential to verify whether the available data allow to verify the working hypotheses in any observational or experimental study.

In this course, understanding that it is an introductory raw, we set ourselves the main objectives:

- To understand the concept of variability and its influence on the evaluation of results.
- To understand the concept of statistical significance of a result.
- To understand and know how to use basic statistical models.
- To be able to set-up and perform a basic statistical analysis based on the work objectives in each case.

Competences

GC1 Being able to selectively search for and use sources of information necessary to achieve the training objectives.

GC2 Interpret scientific-technical information with a critical sense, and be able to make presentations based on this information.

GC3 Working in a team, with a multidisciplinary vision and with the ability to make a rational and efficient distribution of tasks among team members.

GC4 Knowing and adequately using the scientific and technical vocabulary of the different areas of Biotechnology.

GC6 Knowing and knowing how to use the specific software and databases in the different fields of biotechnology.

GC7 Using the scientific method to analyze data and design experimental strategies with biotechnological applications.

GC11 Acquiring criteria for choosing the most appropriate analytical techniques for each specific practical case.

CE10 Be able to apply mathematical procedures to scientific-technical situations necessary throughout the studies and in the future exercise of the profession.

CE11 To know how to use the basic concepts of the statistical method, being able to statistically analyze the results of studies and interpret them critically.

CT1 Being able to produce comprehensible written and oral reports on the work carried out, with a justification based on the theoretical-practical knowledge obtained.

CT3 To use information and communication tools and techniques for data analysis and the preparation of oral and written reports and other training and professional activities.

CT5 Applying the gender perspective to the functions of the professional field.

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Subject contents

1. **From research goals to data: Study Designs**
2. **Clues from Looking at Data: Descriptive statistics**
3. **Probability**
4. **Statistical modelling: Probability Distributions.**
5. **Statistical thinking: significance, p-value, and power**
6. **Statistical thinking: confidence intervals. Interpretation and limitations.**
7. **Statistical modelling: linear regresion.**
8. **Statistical modelling: experimental dessign.**

Methodology

In the theory classes the basic concepts will be raised and the technical aspects necessary to make a good analysis of the data will be worked on.

The practical sessions are organized around specific problems that will address the issues to be resolved by the student regarding the methods and procedures of the subject.

Development plan

		Total	Teoria	Pràctica
1	From research goals to data: Study Designs	4	4	
2	Clues from Looking at Data: Descriptive statistics	4	2	2
3	Probability	4	2	2
4	Statistical modelling: Probability Distributions.	10	4	6
5	Statistical thinking: significance, p-value, and power	8	4	4
6	Statistical thinking: confidence intervals. Interpretation and limitations.	8	4	4
7	Statistical modelling: linear regresion.	8	4	4
8	Statistical modelling: experimental dessign.	14	6	8

Evaluation

- 1st Exam 25% No Recovery exam
- 2nd Exam 50% If the grade is less than 5, it is mandatory to take a recovery exam.
- Practical work 25% (Participation and presence, exercises)

We will use test exams with a discount for wrong answers . Grades will be rounded to the next first decimal place, p.e.

- 6.29 -> 6.3
- 6.24 <- 6.2

Changes in the development and evaluation of the course will be indicated in the resources section of the virtual campus depending on the conditions imposed by the SARS-COV-2 pandemic.

Bibliography

- The notes, references, books, and materials that must be worked on during the course will be deposited in the Units within the Course materials on the Virtual Campus.