

Degree programme	Type	Course
Environmental Biology	FB	1

Contact lecturer

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Teaching staff

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

No specific prerequisites are required for this subject.

Objectives

This subject is an introduction to statistics. Its objective is to transmit its usefulness in the analysis of data and the design of experiments and, to show which are the most appropriate tools according to the objectives of the study and the available data.

Learning outcomes

- CM04 (Integrate the gender perspective, both in the design of studies or the analysis of biological data, knowing how to distinguish the effects of sex and gender variables.) Integrate the gender perspective, both in the design of studies or the analysis of biological data, knowing how to distinguish the effects of sex and gender variables.
- KM08 (Describe the different types of statistical and epidemiological analyses applied to solve biological problems in different areas.) Describe the different types of statistical and epidemiological analyses applied to solve biological problems in different areas.
- SM05 (Select appropriate statistical tests and computing resources for each situation and set of biological data.) Select appropriate statistical tests and computing resources for each situation and set of biological data.
- SM06 (Apply statistical and research design methodologies to solve biological and ecological problems, expressing the results appropriately.) Apply statistical and research design methodologies to solve

biological and ecological problems, expressing the results appropriately.

Contents

1. DESCRIPTIVE STATISTICS

2. INTRODUCTION TO PROBABILITY

3. RANDOM VARIABLES

4. DISCRETE AND CONTINUOUS PROBABILITY DISTRIBUTIONS

4. INTERVAL ESTIMATION

5. STATISTICAL TESTS

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Tutorship	4	0.16	
Resolution of exercises	10	0.4	
Study	71	2.84	
Practices with computer	15	0.6	
Master class	29	1.16	
Fulfillment of assignments	16	0.64	

To reach the contents of this subject it will be necessary to follow both the directed activities (master classes, problems and practices with computers) and the work of individual study outside the classroom.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Computational statistics exam	30%	1	0.04	CM04, KM08, SM05, SM06
First exam	25%	2	0.08	CM04, KM08, SM06
Final exam	35%	2	0.08	KM08, SM06
Homework	10%	0	0	KM08, SM06

Assessment

This course will be assessed through continuous assessment using three types of evaluation: two written exams, computer laboratory sessions, and the submission of solved exercises.

The laboratory component will be assessed through two practical tests in which students will complete a series of exercises using the software learned during the laboratory sessions.

To pass the course, students must obtain a weighted average grade of at least 5.0/10 across all assessment components (exams, laboratory work, and exercises). Students who do not pass the course (and only those students) may take a resit examination. To be eligible for the resit, students must have previously been assessed in activities accounting for at least two-thirds of the total course grade. The resit examination grade will replace the grades of the two written exams. The computer laboratory assessment and the exercise submissions are not eligible for resit.

A grade of "Not Assessed" (NA) will be assigned when the assessment activities completed account for less than 50% of the final course grade.

Single Assessment

1. The same three assessment components will be maintained: written exams, exercise submission, and laboratory work, with the same weighting in the final grade and the same resit policy.
2. The written exam component will consist of a single written examination covering the entire course syllabus.
3. The exercise submission component will consist of the oral presentation and solution of one of the exercises that have been worked on in class throughout the course.
4. The laboratory component will consist of a computer-based practical examination.
5. All of the above assessment activities will take place on the same day as the final examination of the continuous assessment system.

Use of Artificial Intelligence (AI)

Permitted use: "In this course, the use of Artificial Intelligence (AI) technologies is permitted as an integral part of the development of coursework, provided that the final submission reflects a significant contribution by the student in terms of analysis and personal reflection. Students must clearly identify which parts have been generated using AI, specify the tools used, and include a critical reflection on how these tools influenced both the process and the final outcome of the activity. Failure to disclose the use of AI will be considered a breach of academic integrity and may result in a penalty to the activity grade or more severe disciplinary sanctions in serious cases."

Irregularities in Assessment Activities

Any irregularity committed during an assessment activity (including academic fraud, plagiarism, or the improper use of AI, unless such use is explicitly authorized in the course syllabus) that may lead to a significant alteration of the assessment outcome will result in a grade of 0 for that assessment activity.

If the course syllabus specifies that obtaining a minimum grade in that assessment activity is a mandatory requirement for passing the course, or if multiple irregularities are committed in the assessment activities of the same course, the final course grade will be 0.

In addition, disciplinary proceedings may be initiated against any student who commits any of these irregularities.

Bibliography

- 1. Delgado, R. Probabilidad y Estadística para ciencias e ingenierías, Editorial Delta, 2008.
- 2. Bardina, X., Farré, M. Estadística descriptiva, Manuals UAB, 2009.
- 3. Devore, Jay L. Probabilidad y Estadística para ingeniería y ciencias, International Thomson Editores, 1998.
- 4. Milton. J. S. Estadística para Biología y Ciencias de la Salud, Interamericana de España, McGraw-Hill, 1994.
- 5. Moore, D. S. Estadística aplicada básica, Antoni Bosch editor, 2000.

Software

Statistical software R and R Studio

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TE) Theory	21	Catalan	first semester	afternoon
(PAUL) Classroom practices	211	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	211	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	212	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	212	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	213	Catalan	first semester	morning-mixed