# 27106 - Statistics

**Información del Plan Docente**

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| **Academic Year** | 2016/17 |
| **Academic center** | 100 - Facultad de Ciencias |
| **Degree** | 446 - Degree in Biotechnology |
| **ECTS** | 6.0 |
| **Course** | 1 |
| **Period** | First semester |
| **Subject Type** | Basic Education |
| **Module** | --- |

## 1.Basic info

## 1.1.Recommendations to take this course

## 1.2.Activities and key dates for the course

For students enrolled in the subject, places, times and dates of lectures and practical sessions will be public via Bulletin Board advertisements of the grade on the platform Moodle at the University of Zaragoza , https://moodle2.unizar.es/add/, and in the moodle page for the course. These routes will be also used to communicate enrolled students their distribution by groups of practical sessions, which will be organized by the coordination of degree. Provisional dates will be available on the website of the Faculty of Sciences in the corresponding section of the Degree in Biotechnology : https://ciencias.unizar.es/grado-en-biotecnologia .

In this web there will be also available the dates of exams.

## 2.Initiation

## 2.1.Learning outcomes that define the subject

## 2.2.Introduction

## 3.Context and competences

## 3.1.Goals

## 3.2.Context and meaning of the subject in the degree

## 3.3.Competences

On completion of the module the student should

be able to tabulate, display and summarize sets of data

understand the basic concepts of probability

be able to calculate probabilities for simple experiments

recognize random variables in real cases

construct confidence intervals
perform parametric and non parametric test and taking decisions
fit simple linear models

## 3.4.Importance of learning outcomes

## 4.Evaluation

## 5.Activities and resources

## 5.1.General methodological presentation

Lectures supported by problem-solving sessions and the use of the statistical software package R with R commander

## 5.2.Learning activities

Lectures

Problem-solving sessions with the statistical software package R with R commander

Use moodle

## 5.3.Program
1. Introduction to probability and statistics
2. Descriptive statistics
3. Probability and random variables
4. Statistical inference: point and interval estimation, parametric and non- parametric hypothesis testing.
5. Introduction to linear regression analysis

Software: R with R commander, www.R-project.org.

## 5.4.Planning and scheduling

Schedules of lectures and problems will coincide with the officially established and will be available at:
https://ciencias.unizar.es/grado-en-biotecnologia .

The places, calendar and groups for training and practical sessions will be established in coordination with the rest of maters at beginning of course. The Coordinator will produce the groups of students for these activities at beginning of course to avoid overlaps with other subjects.

## 5.5.Bibliography and recomended resources

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| **BB** | Alvarez Cáceres, Rafael. Estadística aplicada a las ciencias de la salud / Rafael Alvarez Cáceres . Madrid : Díaz de Santos D.L. 2007 |
| **BB** | Moore, David S.. Estadística aplicada básica / David S. Moore ; traducción y adaptación de Jordi Comas . - 2ª ed. Barcelona : Antoni Bosch, D.L. 2010 |
| **BB** | Ross, Sheldon M.. Introducción a la estadística / Sheldon M. Ross Barcelona : Reverté, D. L. 2007 |

**LISTADO DE URLs:**

Emmanuel Paradis . R para Principiantes - [http://cran.r-project.org/doc/contrib/rdebuts_es.pdf]