# 29306 - Biostatistics

**Información del Plan Docente**

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| **Academic Year** | 2016/17 |
| **Academic center** | 229 - Facultad de Ciencias de la Salud y del Deporte |
| **Degree** | 442 - Degree in Odontology |
| **ECTS** | 6.0 |
| **Course** | 1 |
| **Period** | Second 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

## 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

## 3.4.Importance of learning outcomes

## 4.Evaluation

## 5.Activities and resources

## 5.1.General methodological presentation

The learning process that is designed for this subject is based on the following:

MASTERCLASS, as a basic instrument for introducing the contents and logical foundations of the subject. In the same, examples of application of the theory are also solved by requesting the intervention of the students, who bring their prior knowledge.

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CLASS OF PROBLEMS, where the theoretical knowledge is applied to solving specific problems and proceed to the resolution of individual controls. Problem solving is done in groups of three people working together. One person in the group can be nominated for exhibition in front of the other students involved in correcting it. The teacher acts clarifying concepts, and providing if required, additional keys. This process allows early detection of learning problems in students.

COMPUTER PRACTICES with statistical software, focusing on their correct use for management and basic statistical analysis of the data, and the correct interpretation of the outputs of the program to the technical different bivariate statistics.

GROUP WORK presented in due time:

In groups of 5 individuals, students collect some real data, create a database, and summarize the information collected through tables and graphs in addition to proceed to univariate and bivariate statistical analysis of the variables involved using computer software, presenting written report .

In groups of 3 individuals, the students solve a set of problems reporting the results in writing.

In groups of 3 individuals, students answer in writing to a set of questions about a supplemental text in English or Spanish.

TUTORIALS individual and group, to assess the progress of the group and the individual in relation to group work, allowing the prescription of corrective measures.

TUTORIALS EMAIL for students with problems to keep face tutorials.

MOODLE 2 complement to all the previous teaching activities.

## 5.2.Learning activities

The program that the student is offered to help you achieve the expected results includes the following activities ...
MASTERCLASSES
RESOLUTION PROBLEMS AND CASES
LAB PRACTICES
In computer classroom with the support of SPSS and / or Excel
INDEPENDENT WORK
Group work:
* In groups of 4, students collect some real data, create a database, and summarize the information collected through tables and graphs in addition to proceed to univariate and bivariate statistical analysis of the variables involved using computer software, presenting report written.
* In groups of 4, students solve a set of problems reporting the results in writing.
* In groups of 4, students reply in writing to a set of questions about a supplemental text in English or Spanish.
ASSESSMENT TESTS
Individual tests objective multiple choice and short question

## 5.3.Program

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The program that the student is offered to help you achieve the expected results includes the following activities ...

MASTERCLASSES

contents:

Introduction to Biostatistics. Scientific method.

Univariate descriptive statistics. Frequency distribution: Tables and Charts. Measures of central tendency, dispersion, position and shape.

bivariate descriptive statistics. Crosstabulations. Correlation and regression.

Probability Theory. Bayes theorem. Random variable and probability distribution models.

Introduction to inferential statistics. Sampling. Interval estimation. Sample size.

inferential statistics Hypothesis Tests: fundamentals, types of errors, significance level, power of contrast and degree of significance (p value).

Hypothesis testing based on means, variances and proportions. Test "t" of Student. Test "z". Test "F" Snedecor.

nonparametric inferential statistics. Χ2 test of independence. Test "U" Mann-Whitney rank.

RESOLUTION PROBLEMS AND CASES

contents:

Univariate descriptive statistics

Correlation and regression

Probability theory. Bayes Theorem

Probability Distributions

Test "z". Test "t" of Student

Test "χ2"

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Try "" U "Mann-Whitney

LAB PRACTICES

In computer classroom with the support of SPSS and / or Excel

contents:

Creating a new database. Data management. Frequency tables and graphs. Descriptive statistics.

Crosstab. Regression and correlation.

Student t test. Χ2 test.

INDEPENDENT WORK

Group work:

In groups of 4, students collect some real data, create a database, and summarize the information collected through tables and graphs in addition to proceed to univariate and bivariate statistical analysis of the variables involved using computer software, presenting written report.

In groups of 4, students solve a set of problems reporting the results in writing.

In groups of 4, students reply in writing to a set of questions about a supplemental text in English or Spanish.

ASSESSMENT TESTS

Individual tests objective multiple choice and short question

## 5.4.Planning and scheduling

Schedule sessions and presentation of works

The subject consists of 6 ECTS credits corresponding to 150 hours of dedication by the student. In this course, the contact hours account for 40%, ie, 60 hours, distributed in the activities as follows:

-36 Hours of lecture

-14 Hours of classes of problems

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-10 Hour computer room

It is taught in the second semester sophomore.

Check the website of the degree to check class schedules and calendars exams in

https://fccsyd.unizar.es/academico/horarios-y-calendarios

## 5.5.Bibliography and recomended resources


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