Universidad Zaragoza

Year : 2019/20

29306 - Biostatistics

Syllabus Information

Academic Year: 2019/20
Subject: 29306 - Biostatistics
Faculty / School: 229 - Facultad de Ciencias de la Salud y del Deporte
Degree: 442 - Degree in Odontology
ECTS: 6.0
Year: 1
Semester: Second semester
Subject Type: Basic Education
Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

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

LECTURES, 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.

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 individual or in group 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.

TUTORIALS individual and group, to assess the progress of the group and the individual 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. It will be the way to provide classroom material and notices to the students.

4.2.Learning tasks

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 group, students solve a set of problems reporting the results in writing.

ASSESSMENT TESTS
Individual tests objective multiple choice and short question

4.3.Syllabus

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

MASTERCLASSES

Contents:

1. Introduction to Biostatistics. Scientific method.
2. Univariate descriptive statistics. Frequency distribution: Tables and Charts. Measures of central tendency, dispersion, position and shape.
3. Bivariate descriptive statistics. Crosstabulations. Correlation and regression.
4. Probability Theory. Random variable and probability distribution models.
5. Introduction to inferential statistics. Sampling. Interval estimation. Sample size.
6. Inferential statistics Hypothesis Tests: fundamentals, types of errors, significance level, power of contrast and degree of significance (p value).
7. Hypothesis testing based on means, variances and proportions. Student's t Test. Test "z". Test "F" Snedecor.
8. Nonparametric inferential statistics. "U" Mann-Whitney rank Test. T Wilcoxon Test.
9. Chi Square test of independence.

RESOLUTION PROBLEMS AND CASES

Contents:

1. Univariate descriptive statistics.
2. Correlation and regression.
3. Probability theory. Bayes Theorem.
4. Probability Distributions.
5. Test "z". Student's t Test.
6. Test Chi Square.

LAB PRACTICES

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

Contents:

1. Creating a new database. Data management. Frequency tables and graphs. Descriptive statistics.
2. Crosstab. Regression and correlation.
3. Parametric and nonparametric tests. Chi-Square test.

4.4.Course planning and calendar

Schedule sessions and presentation of works

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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 lectures

-14 Hours of classes of problems

-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

4.5.Bibliography and recommended resources

To check the recommended and complementary bibliography of this course, please visit the link following:

http://biblos.unizar.es/br/br_citas.php?codigo=29306&year=2019