

## 29202 - Biostatistics

### Syllabus Information

**Academic Year:** 2021/22

**Subject:** 29202 - Biostatistics

**Faculty / School:** 229 - Facultad de Ciencias de la Salud y del Deporte

**Degree:** 441 - Degree in Human Nutrition and Dietetics

**ECTS:** 6.0

**Year:** 1

**Semester:** First semester

**Subject Type:** Basic Education

**Module:**

### 1. General information

### 2. Learning goals

### 3. Assessment (1st and 2nd call)

### 4. Methodology, learning tasks, syllabus and resources

#### 4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, seminars, computer laboratory sessions, group work, tutorials and autonomous work and study.

#### 4.2. Learning tasks

This 6 ECTS (150 hours) course is organized as follows:

- **Lectures** (1.44 ECTS). Students are expected to attend and participate actively in the class throughout the semester. Classroom materials will be available via Moodle academic platform <https://moodle2.unizar.es/add/>
- **Problem-solving sessions**
  - **Calculator-assisted problem sessions** (0.56 ECTS)
  - **Computer-assisted problem sessions** (0.40 ECTS)
- **Autonomous work and study** (3.40 ECTS)
- **Assessment tasks** (0.20 ECTS)
- **Tutorials**. In small groups, individually or by email.

**Important notice:** Due to space restrictions conditioned by the COVID19 health alert, at least course lectures will be carried out online using the Google Meet application. Lectures will be recorded and made available for the student's asynchronous review.

Calculator-assisted and computer-assisted problem sessions, as well as exams, will be performed in the classroom (face to face) unless the health situation worsens, in which case students will be provided with new instructions through the Moodle site of the course, section "Avisos" (<https://moodle.unizar.es/add/>).

### 4.3. Syllabus

This course will address the following topics:

#### Lectures/seminars contents

- Introduction to Biostatistics. Scientific method.
- Univariate descriptive biostatistics. Frequency distribution. Tables and graphs. Measures of central tendency, spread, shape and position.
- Bivariate descriptive biostatistics. Two-way tables. Correlation and Regression.
- Probability theory. Bayes Theorem. Random variable and Probability distribution models.
- Introduction to inferential statistics. Sampling. Estimation by confidence interval.
- Inferential statistics: Introduction to hypothesis testing, error types, significance level, power of the test, p values. Paired and independent samples.
- Hypothesis testing based on means, variances or proportions: Student's T, Z and Snedecor's F tests
- Non-parametric methods: chi-square test for independence.

**Computer lab sessions contents:** Use SPSS and/or Excel and/or Epidat (free software) to:

- Create a new database. Manage data and variables.
- Create univariate and bivariate frequency tables and graphs
- Perform correlation and regression techniques
- Perform two-sample comparisons of means and estimate confidence intervals for the population mean differences with paired and unpaired data using Student's t-test.
- Compare proportions among two independent populations using the chi-squared test

### 4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class.

Please refer for additional information to the Faculty of Health and Sport Sciences website (<https://fccsyd.unizar.es/horarios-y-calendarios-nutricion>) and Moodle site of the subject (<https://moodle.unizar.es/add/>).

**Important notice:** Should the health situation due to COVID 19 worsen, please refer to the Moodle site of the subject, section "Avisos" to find information on how to proceed if classes, labs, and exams must be moved online.

### 4.5. Bibliography and recommended resources

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

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=29202>