

## 31205 - Data Analysis I

### Syllabus Information

**Academic Year:** 2021/22

**Subject:** 31205 - Data Analysis I

**Faculty / School:** 301 - Facultad de Ciencias Sociales y Humanas

**Degree:** 613 - Degree in Psychology

**ECTS:** 6.0

**Year:** 1

**Semester:** Second semester

**Subject Type:** Basic Education

**Module:**

## 1. General information

### 1.1. Aims of the course

The aim of this subject is to introduce the student to the bases of descriptive statistics. Basically, the following will be addressed:

- Fundamentals of descriptive statistics and introduction to statistical inference.
- Application of the techniques learned using the SPSS statistical software.

### 1.2. Context and importance of this course in the degree

The Research Methods subject is the second of four subjects in the Methodology of the Behavioral Research area of the Psychology degree at the University of Zaragoza. It is an important subject for:

- Learn the basics of descriptive statistics.
- Learn different data analysis techniques and their application with SPSS software.

### 1.3. Recommendations to take this course

No previous knowledge is required.

## 2. Learning goals

### 2.1. Competences

- Having acquired work habits that imply thoroughness and systematicity in the statistical treatment, as a form of self-protection against errors, as well as rigor and prudence in interpreting the results.
- Have acquired the motivation to find suggestive interpretations in the patterns that descriptively or graphically show the data.
- Know the underlying logic in the testing of statistical hypotheses and be able to apply some simple testing techniques using the studied computer application (SPSS).
- Be able to interpret and elaborate, at the descriptive level, the results sections of the research reports, effectively communicating the patterns identified in the observations made.

### 2.2. Learning goals

- Identify the measurement scale of the data as a previous step to distinguish the statistical treatment of each variable according to its measurement scale.
- Analyze the data related to samples of measurements of a quantitative variable, in the sense of ordering and organizing them in a meaningful way, as well as summarizing them in indicators and statistics of frequency, central tendency and variability, and interpreting the results.

- Detect, identify and assess linear covariation patterns between pairs of variables, understanding the difference between correlation and causality, becoming familiar with the concept of statistical adjustment and learning to use simple linear models for prediction.
- Prepare and interpret Contingency Tables, as a tool for descriptive analysis of the relationship between categorical variables.
- Know the general structure of a data analysis computer application commonly used in psychology and be able to carry out the statistical analyzes that are part of the program (SPSS) with it.

### **2.3. Importance of learning goals**

Statistics is a mathematical discipline that is used in Psychology and other Social Sciences. Due to it and the Research Methods, Psychology is a scientific discipline. A good training in statistics makes it possible to understand a scientific publication, as well as to determine its degree of validity, in order to decide whether to apply it in professional practice. The professional work of a psychologist requires knowledge of scientific publications in the specialty in which they work (although they do not intend to dedicate themselves to research). This allows the psychologist to apply the best possible interventions.

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

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

Assessment will consist of:

- Continuous assessment/ assignments (40-60%)
- Final examination (40-60%)

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

### **4.1. Methodological overview**

The subject includes theoretical classes and practical classes.

Theoretical classes are aimed at explaining technical knowledge of Data Analysis 1.

The practical classes have the objective of working on the theoretical contents learned in order to strengthen them, generally working with the SPSS software.

### **4.2. Learning tasks**

The activities will be varied, and will include both exercises that will be carried out individually to consolidate the most relevant theoretical concepts of the subject, as well as another set of practices that, from teamwork, give the opportunity to go deeper into the different aspects of the subject.

### **4.3. Syllabus**

PART 1. DESCRIPTIVE STATISTICS WITH ONE VARIABLE

PART 2. DESCRIPTIVE STATISTICS WITH MORE THAN ONE VARIABLE

PART 3. INTRODUCTION TO STATISTICAL INFERENCE

### **4.4. Course planning and calendar**

At the beginning of the course, the students are provided with the calendar with all the activities.

Exam times and dates can be found on the faculty website: <http://fcsh.unizar.es/>.

Moodle will be used to communicate the other relevant dates.

### **4.5. Bibliography and recommended resources**

Pardo, A., Ruiz, M. A. y San Martín, R. (2009). Análisis de datos en ciencias sociales y de la salud I. Madrid: Síntesis.