

**Información del Plan Docente**

<b>Academic Year</b>	2018/19
<b>Subject</b>	27510 - Statistics II
<b>Faculty / School</b>	109 - Facultad de Economía y Empresa
<b>Degree</b>	449 - Degree in Finance and Accounting
<b>ECTS</b>	6.0
<b>Year</b>	2
<b>Semester</b>	First semester
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

**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**

Several teaching methods will be used in the learning process, based on the objectives set and the competences to develop. Explanatory techniques will be used in the lectures, aiming to analyze and develop the basic concepts of the subject, and collaborative training techniques will be used to get the student involved in order to develop her/his ability to organize, plan and make decisions.

Furthermore, computer tools and solving case studies will be used to tackle the competences related to the use of technological tools, problem solving and ability to analyze and extract information from external sources. Moreover, the classroom practicals will enable the student to develop the capacity to adapt to new situations and apply the knowledge acquired in professional practice.

The learning platform Moodle (<http://moodle2.unizar.es>) will provide the educational support. All the documentation and material needed for the lectures and the classroom practicals and the associated information, including this teaching guide will be published in this platform.

## 4.2. Learning tasks

The course includes the following learning tasks:

- Lectures (30 classroom hours and 45 autonomous working hours). It will be used mainly to introduce the basic concepts and the theoretical developments of each lesson. Explanatory techniques will be used, always promoting participation and discussion in the classroom. The teacher's explanations will be supported by a presentation. Class attendance, participation and note-taking are highly recommended.
- Practice sessions (26 classroom hours and 33 autonomous working hours). This activity aims to show the student how to deal with problems. The sessions will take place either in the classroom or in the computer rooms. The sessions are intended to be participative and to encourage the students to discuss and come to an agreement on both the analysis of the problem and its solution.
- Small group classes (4 classroom hours and 4 autonomous working hours). It will take place in the classroom or in the computer room within the established hours. The goal of these sessions is to help the student to acquire skill and fluency in the resolution of statistical problems with the computer.

## 4.3. Syllabus

The course will address the following topics:

### SECTION 1. CALCULATION OF PROBABILITIES

- Topic 1: Discrete random variable. Concept of discrete random variable. Classification in discrete and continuous random variables. Discrete random variable: probability and distribution functions. Mathematical expectation: characteristics of a discrete random variable. Notable distributions.
- Topic 2: Continuous random variable. Continuous random variable: density and distribution functions. Characteristics of a continuous random variable. Notable distributions

### SECTION 2. INTRODUCTION TO SAMPLING THEORY

- Topic 3: Introduction to the theory of samples. Basic concepts: population, sample, parameter and statistic. Simple random sampling: with and without replacement. Sampling distribution of a statistic. Determination of the sample size.

### SECTION 3. INFERENCE METHODS: ESTIMATION AND HYPOTHESIS TESTS.

- Topic 4: Point and interval estimation. Estimator concept. Point estimate. Estimation by interval: pivotal method. Notable confidence intervals for the estimation of a mean, a proportion and a variance.
- Topic 5: Hypothesis tests. Basic concepts: contrast, null and alternative hypothesis, level of significance and power. Parametric Contrasts: Notable tests for the mean, proportion and variance. Non-parametric contrasts

### SECTION 4. BIDIMENSIONAL ANALYSIS

- Topic 6: Two-dimensional Inference. Analysis of quantitative variables: Independent samples and paired samples. Statistical inference to compare means, proportions and variances. Analysis of categorical variables: contingency tables.

## 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 or please refer to the Faculty of Economics and Business website

## 27510 - Statistics II

<https://econz.unizar.es/>)

Activities	Classroom teaching	Autonomous work	Total student workload
Lectures (Full group)	30	45	75
Practice-problems (2 subgroups)	26	33	59
Small group classes. Tutorial activity (2 subgroups)	4	4	8
Computer exam (2 subgroups)	4	0	4
First global evaluation	4	0	4
<b>TOTAL</b>	68	82	150

### 4.5. Bibliography and recommended resources