# 30607 - Statistics I

**Información del Plan Docente**

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| **Academic Year** | 2017/18 |
| **Faculty / School** | 109 - Facultad de Economía y Empresa |
| **Degree** | 432 - Joint Law - Business Administration and Management Programme |
| **ECTS** | 6.0 |
| **Year** | 2 |
| **Semester** | First semester |
| **Subject Type** | Basic Education |
| **Module** | --- |

## 1.General information

### 1.1.Introduction

Brief presentation of the course

The 'Statistics I' course is a basic formation course and is worth 6 ECTS. It belongs to the module of Quantitative Methods for Business, along with the Statistics II, Operations Research and ICTs in Business courses.

The main objective is to supply the student with the basic tools to deal with information and its quantification in Business and Economics, providing a decision support tool in these areas.

First of all, data analysis techniques to describe an economic situation will be studied. These techniques will allow the collecting, tabulating and presenting of the main characteristics of the data. Next, the models that describe the relationship between two variables will be presented. In the last part of the course, some probability concepts will be introduced to explain the behaviour of random situations and an introduction to statistical decision theory will also be presented. The concepts and techniques of this last part of the course will be employed later in other courses of the degree (Statistics II, Econometrics,...).

### 1.2.Recommendations to take this course

There are no previous requirements to take this course. To achieve greater progress, it is recommended to attend and to participate actively in the classes.

In the first session of the course, the contents of the course, the teaching methodology and the assessment criteria are explained in detail. Through the e-learning platform the teachers will inform the students about the readings, practice cases or relevant news to be employed in the activities of the course.

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

### 1.4.Activities and key dates

## 2.Learning goals

### 2.1.Learning goals

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The student, in order to pass the course, will have to show her/his competence in the following skills:

1. Understand and situate the statistical description of a data set within the stages of the statistical study of an economic phenomenon.
2. Be able to handle statistical information sources in the Business and Economics areas.
3. Define, calculate and deduce the properties of the basic descriptive statistical measures in order to synthesise the location, the dispersion and the shape of the frequency distribution of a univariate data set.
4. Analyse the relationship between two statistical variables depending on the type of the variable (qualitative/quantitative).
5. Be able to handle index numbers employed in the economy and interpret the results that are obtained.
6. Define basic concepts of probability and apply the fundamental theorems to solve simple problems of Probability Calculus.
7. Be able to solve discrete decision problems in an environment of uncertainty.
8. Implement, using a spreadsheet, the statistical measures and the graphical techniques studied in the course.
9. Be able to write statistical reports formulating the conclusions that are derived from the study of a data set.

## 2.2.Importance of learning goals

## 3.Aims of the course and competences

## 3.1.Aims of the course

## 3.2.Competences

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

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

The student will prove that he/she has achieved the expected learning results by means of the following assessment tasks:

During the semester, the students will take two intermediate tests in which they will solve some problems using a spreadsheet. The weight of each of these tests (a minimum of 3 out of 10 points is necessary) in the total mark will be of 20%. The specific dates for these tests will be fixed taking into account the academic calendar and the timetable established by the Faculty. The students will be informed through the e-learning platform. In the official exam period established by the Faculty, the students will take a global test consisting of two parts: (1) a written test (weight of 60%), in which the competences and skills that have been acquired will be evaluated; and (2) a global practice test (weight of 40%), in which the students will have to solve some problems with a spreadsheet.

At the first sitting, the practice test will not be compulsory for students who have obtained a minimum of 3 points in each of the intermediate tests.

At the second sitting, the practice test will not be compulsory for those students who have obtained an average of at least 5 points in the two intermediate tests.

**Assessment criteria**

In order to pass the course, the student should obtain at least 5 points as the final mark, which will be calculated using the following formulae:

Final grade = 0,6.WT +0,4.P, where P= max (GPT;(IT1+IT2)/2

The written test (WT) as well as the intermediate tests (IT1 and IT2) and the global practice test (GPT) will be graded on a scale from 0 to 10. The student should obtain at least 3 points in each of them (WT, IT1 and IT2; or WT and GPT) to

apply the formulae.

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

### 5.1.Methodological overview

The learning process that has been designed for this course is based on the following activities:

*Lectures:* The professors will present the main contents of the course and try to motivate participation and discussion in the classroom. Slides will be employed in these sessions to help the students to understand the topics. It is recommended to attend the lectures and make notes to complement and clarify the slides.

*Practice sessions* : In these sessions, the students will learn how to manage and solve practical problems. Before each practical session, the students will have at their disposal the set of problems that will be solved.

*Computer practice sessions:* During the semester, the students will do several computer practice sessions. In these sessions, they will solve some problems applying the methods and techniques studied in class by using a spreadsheet. Each practice session will consist of two parts. In the first one, the students will be guided to learn the main theoretical concepts; in the second, these concepts will be employed to solve real problems.

### 5.2.Learning tasks

The programme offered to the students to help them achieve the learning results includes the following activities :

*Lesson 1: Statistical Methods in Business and Economics*

*Lesson 2: Scales of Measurement and Information Sources*

*Lesson 3: Describing Univariate Data: Frequency Tables and Distributions, and Graphic Presentation*

*Lesson 4: Describing Univariate Data: Numerical Measures*

*Lesson 5: Frequency Tables and Distributions and Graphic Presentation of Bivariate Data*

*Lesson 6: Correlation and Simple Linear Regression*

*Lesson 7: Index Numbers*

*Lesson 8: Probability Concepts*

*Lesson 9: Statistical Decision Theory*

### 5.3.Syllabus

### 5.4.Course planning and calendar

Calendar of actual sessions and presentation of works

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The course is worth 6 ECTS implying a workload for the student of 150 hours divided between the classroom and private study hours. This workload is distributed in the following way:

| Activities | Hours in the classroom | Private study hours | Total student hours |
|---|---|---|---|
| Lectures (whole group) | 30 | 30 | 60 |
| Computer practice sessions (Two subgroups) | 22 | 43 | 65 |
| Practice sessions (Two subgroups) | 4 | 6 | 10 |
| Additional practice sessions (P6) (Two subgroups) | 4 | 6 | 10 |
| Intermediate tests (Four subgroups) | 2 | | 2 |
| Written exam | 3 | | 3 |
| **TOTAL** | 65 | 85 | 150 |

The calendar will be presented to students once the course starts.

## 5.5.Bibliography and recommended resources