Universidad Zaragoza

Academic Year/course: 2023/24

30607 - Statistics I

Syllabus Information

Academic year: 2023/24
Subject: 30607 - Statistics I
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

The first goal of the subject is for the student to know the main sources of information used in economic statistics and to be able to carry out an initial analysis of a set of univariate and bivariate data; as a second goal, that the student has the necessary knowledge of everything related to the elaboration of indicators as comparative measures of the evolution of a magnitude and as a third goal, that he/she has a basic knowledge of the Calculus of Probabilities as a support tool for decision making.

These approaches and goals are aligned with the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda, specifically contributing to the achievement of Goal 4 in general and Target 4.4 in particular

2. Learning results

To pass this subject, students must demonstrate the following results:

1. -Understand and situate the statistical description of a data set in the stages of the statistical investigation of an economic phenomenon.

2. -To be able to handle sources of statistical information in the economic-business field.

3. -Define, calculate and derive the properties of basic descriptive statistical measures to synthesize the position, dispersion and shape of the frequency distribution of a univariate data set,

4. -Analyze the relationship between two statistical variables distinguishing by the type of variable (qualitative/quantitative).

5. -Be able to handle the most commonly used index numbers in Economics and to interpret the results 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 under uncertainty.

8. -Implement by means of a spreadsheet the statistical measures and graphical representations presented throughout the subject.

9. -Be able to prepare statistical reports formulating the conclusions drawn from the study.

3. Syllabus

1. Statistical methods in the economic-business field

2. Scales of Measurement and Sources of Information

Data sources. Data types and variables. Measurement scales.

3. Tabulation and Graphical Representation of Univariate Data

4. Numerical description

Position, dispersion and shape measurements. Other measures.

5. Tabulation and Graphical Representation of Bivariate Data

Joint, marginal and conditional distributions. Graphical representations. Independence.

6. Correlation and simple linear regression

Correlation. Simple linear regression. Goodness of fit. Prediction. Non-linear regression.

7. Index numbers

Simple and complex indexes. Impact. Change of base. Deflation.

8. Calculation of Probabilities

Basic concepts. Events. Random variables.

9. Statistical Decision Analysis

Decisions under risk. Decisions with experimentation.

4. Academic activities

- Master classes: 30 hours
- Practical classes: 30 hours
- Personal Study: 85 hours
- Assessment tests. 5 hours 6 ECTS = 150 hours

Lectures will be used to develop the concepts and techniques of each topic, using the methodology expository, but encouraging participation and discussion in class with students. Practical classes will be used to show the student how to approach and solve problems both in the classroom and in the computer lab using software.

In order to encourage the participation of the students, in the theoretical and practical classes it will be proposed the realization of some exercises and questionnaires that will be collected at the end of the classes.

5. Assessment system

The assessment system is GLOBAL, with two tests: a Computer Test (PI) and a Written Test (PE), accounting for 60% and 40%, respectively, of the overall grade. At least 4 points will be required in each test, and 5 points out of 10 in the final grade.

Students will be able to take the computer test through continuous assessment. To do so, they will have to prepare a series of papers (TR) and take a Simplified Informatics Test (PIS). In this modality, the IP rating is obtained by:

PI = 0.3*TR+0.7*PIS

It will be necessary to obtain at least a 4 in the Simplified Computer Test and in each of the assignments.

All students may take the computer test in the official calls, either for not having opted for the continuous aassessment, or for having taken it but not passing it, or to improve the grade obtained.

The written test will only be given on official dates.

Second call

Students who obtain at least 5 points in any of the two parts in the first call, but do not pass the subject, will only be able to sit for the part they did not pass.