COURSE DATA

DATA SUBJECT

Code: 36787
Name: Statistics I
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1933 - Double Degree in Law and Economics_2022	Facultat d'Economia	2	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1933 - Double Degree in Law and Economics_2022	Asignaturas de segundo curso	COMPULSORY

COORDINATION

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SUMMARY

Statistics I is a basic training subject that belongs to the area of Quantitative Methods for Business and Economics. It is taught in the first semester of the second year of the Double Degree in Law + Economics and it is a 6 ECTS credits subject.

One of the main objectives of the Double Degree in Law + Economics is to academically train future professionals, who will be able to contribute to the economic and social development. Therefore, Statistics I is an essential subject for numerical data analysis used in economic and business decision making.

The purpose of the subject is to introduce the basic concepts of descriptive statistics and probability, which will be the immediate base for the study of inferential or inductive statistics, contents that will be seen in the subject of Statistics II. But it is also the base for Econometrics subjects, as well as the elective subject of Data Analysis (in the itinerary of Economía Industrial y de la Empresa) and other subjects of quantitative profile that the student can enroll in.

The subject is divided in two main parts, descriptive statistics and probability. The former includes descriptive analysis of variables and statistics datasets, either unidimensional or multidimensional ones. Regression techniques are explained and some topics of special interest in economics are developed, such

as inequality measures, economic indicators and time series. The latter includes topics related to the general probability theory, with the aim of providing the tools that allow working in an uncertain environment. It is focused on probability theory concepts and probability models, either unidimensional or multidimensional models.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

No prior knowledge is required, although it is recommended to have taken and passed the subject of Mathematics.

COMPETENCES / LEARNING OUTCOMES

DESCRIPTION OF CONTENTS

1. UNIVARIATE DATA ANALYSIS

1. Introduction
2. Univariate data: measures of central position, dispersion and shape
3. Measures of concentration

2. MULTIVARIATE DATA ANALYSIS

1. Multivariate data: joint and marginal frequency distributions
2. Mean vector and variance-covariance matrix
3. Relationship between variables

3. REGRESSION

1. Introduction
2. Least squares regression
3. Goodness of fit

4. TIME SERIES MODELS

1. Introduction
2. Economic indices
3. Time series

5. UNIVARIATE PROBABILITY MODELS

1. Introduction to probability theory
2. Random variable and probability distribution
3. Discrete and continuous random variables

6. SPECIFIC UNIVARIATE PROBABUILITY MODELS

1. Discrete models
2. Continuous models

7. MULTIVARIATE PROBABILITY MODELS

1. Introduction
2. Joint probability distributions, marginal probability distributions and conditional probability distributions
3. Mean vector and variance-covariance matrix
4. Independence. Correlation coefficient
5. Specific multivariate probability models

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	60,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	20,00
Preparation of lessons	30,00
Preparation for assessment activities	30,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

The course covers both theoretical and practical content. Depending on the type of session content (theoretical or practical), a teaching method will be chosen. The theoretical sessions will present the main content of each of the topics in the course, introducing the concepts and contextualizing them in the different fields of application of the socioeconomic environment.

The predominant teaching method in theoretical classes will be the participatory lecture. This methodology allows to lead groups of students offering the advantages of a lecture without limiting the participation of students and the lecturer-student interaction. Class participation and discussion will be encouraged to offer students direct involvement in the content.

In the practical sessions, lecturer will propose the students problems to solve applying the previously introduced theoretical concepts. These sessions will be developed following different strategies depending on the contents:

- *Project-based learning*. At the beginning of the subject some activities can be proposed to cover the topics of Descriptive Statistics. The intention is that the student will acquire the competencies included in this syllabus.

- *Problem solving*. Its objective is to complement the concepts studied in the lecture applying them to the solving of practical cases studies.

The structure of these activities and the deadlines of associated reports will be stablished by each lecturer and they will be announced to students properly.

EVALUATION

Students' learning assessment in this subject will be a weighted average of the results from a final exam and all assignments:

1. Exam (70% of the course final grade). It will include theoretical and practical problems to assess students' ability in the application of the essential tools and concepts of the subject.

2. Assignments (30% of the course final grade). They include statistics projects and active participation in class. These cannot be retaken.

No student will get a positive assessment of the course (5 points or more) without passing the final exam. Students who fail the final exam will get a maximum final grade of 4.5 points. A student might opt out of in-class assignments assessment. In this case his/her final grade will be totally based on the final exam, with a maximum value of 7 points out of 10.

REFERENCES

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