

TEACHING GUIDE

STATISTICS I

GRADO EN ECONOMÍA (INGLÉS)

ACADEMIC YEAR 2026-27

Publication date: 05-07-2026



I.-Subject Identification

Type	OBLIGATORIA
Teaching period	1 course, 1Q semester
Nº of credits	4.5
Language in wich the subject is taught	English

II.-Presentation

The course aims to provide a strong introductory understanding of applied statistical procedures so that individuals can do solid statistical analysis in business and economic situations. It attempts to combine a theoretical understanding of the methods and their assumptions with examples, leading to useful insight into business and economic problems.

The assumed mathematics level is basic derivation and integration, and elementary algebra. Excel is used because of its wide availability. Other statistical software may be applied, such as R.

III.-Learning outcomes

CT01. Ability to analyse and synthesise
 CT07. Ability to solve problems
 CT08. Ability to make decisions
 CT14. Ability to work under pressure
 CT15. Ability to learn independently
 CB01 .That students have demonstrated the possession and comprehension of knowledge in a field of study based on the foundations of general secondary education, at a level that, although supported by advanced textbooks, includes some aspects that imply knowledge proceeding from the forefront of the field of study.
 CB03 . That students have the ability to gather and interpret relevant data (usually within their field of study) to express judgments that include a reflection on relevant topics related to social, scientific or ethical areas.
 CE06. Ability to learn and apply the different qualitative techniques used in economics
 CE14. Ability to convert an empirical problem into an area of research and reach conclusions

- Key for degrees not adapted to RD 822/21: **CB** - basic competences, **CG** - generic competences, **CE** - specific competences, **CT** - transversal competences.
- Key for degrees adapted to RD 822/21: **CON** - knowledge, **COM** - competences, **HAB** - skills.



IV.-Contents

IV.A.-Syllabus

Thematic unit	Topic	Contents
I.- Descriptive Statistics	1.- Statistics and Economics	Univariate frequency distribution Bivariate frequency distributions Frequency distributions characteristics
	2.- Regression and correlation	Regression Goodness-of-fit measures in regression modelling
	3: Index numbers	Index number concept Properties and operations Index in Economics
	Appendix: Time series	Concept & Introduction
II.- Probability	1.- Probability	Probability concepts Probability theorems
	2.- One-dimensional random variables	Random variable concept Probability function
	3.- Two-dimensional random variables	
	4.- Probability distributions characteristics	Statistical measures Typification Chebyshev's Theorem
	5.- Discrete Probability Distributions	Binomial Distribution Poisson Distribution Other discrete probability distributions
	6.- Continuous Probability Distributions	Uniform distribution Normal distribution Other continuous probability distributions (intro)
	7.- Convergency	Types of convergence Central Limit Theorem

IV.B.-Training activities

Type	Title
Other activities	There are not proposals on additional learning activities



V.-Student workload	
Theoretical sessions	29
Resolution of exercises, problems, case studies, etc.	12
Practical sessions in experimental, technological and clinical laboratories, fieldwork, etc.	0
Tests and/or exams	4
Academic tutorials	30
Related activities: conferences, seminars, etc.	6
Preparation of theoretical sessions and self-study	30
Preparation of practical tasks, exercises, case studies, projects, etc.	16
Preparation for tests and/or exams	8
Total student workload	135

VI.-Methodology and academic programme		
Type	Period	Content
Practical sessions	Week 1 to Week 15	Topics 1 to 14. (OS) Face-to-face activity and/or virtual learning activity (DL).
Theoretical sessions	Week 1 to Week 15	Topics 1 to 14. (OS) Face-to-face activity and/or virtual learning activity (DL).



VII.-Assessment methods

The general assessment method is continuous as established in the *Regulation for the Assessment of Learning Outcomes* of Rey Juan Carlos University.

All the assessment systems established in the degree report must be employed, except for those that have a minimum weight of 0%, which can be used by professors in the academic years they consider relevant. Each assessment system may be applied through one or more assessment activities, consistent with the system. No assessment activity can exceed individually 60% of the overall grade for the subject.

The sum of non re-evaluable activities cannot exceed 40% of the overall grade for the subject and, in general, should not have an established minimum grade (except for practical activities in which, strictly speaking, the conditions of the ordinary call cannot be reproduced in the extraordinary call).

Those students who do not manage to pass the subject in the ordinary call, or do not attend this first call, may attend the extraordinary call only for failed re-evaluable assessment activities.

The distribution and characteristics of the assessment activities are described below.

VII.A.-Description and weight of the assessment activities



Ordinary Assessment

Exam Week 6: Descriptive statistics Basic Concepts

- **Weight:** 15% of the final grade
- **Content:** Assesses students' understanding of fundamental descriptive statistics concepts covered in the first part of the course.
- **Format:** May include multiple-choice questions, short-answer problems, and/or practical estimation exercises.
- **Reassessment:** Non-reassessable; no retake will be offered. This exam forms part of a continuous assessment process designed to support methodological learning and ongoing student development.
- **Note:** The exam is scheduled for week 6 but may be postponed by up to one week at the professor's discretion.

Exam Week 13: Probability theory Basic Concepts

- **Weight:** 25% of the final grade
- **Content:** Focuses on the core principles of probability theory as discussed in class.
- **Format:** May include theoretical questions, practical applications, and/or interpretation of statistical results.
- **Reassessment:** Non-reassessable; no retake will be offered. This exam forms part of a continuous assessment process designed to support methodological learning and ongoing student development.
- **Note:** The exam is scheduled for week 13 but may be postponed by up to one week at the professor's discretion.

Final Exam: January (in the official exam date as published by the university, in-person)

- **Weight:** 60% of the final grade
- **Content:** Comprehensive, covering all course topics, including descriptive statistics and probability theory, and any additional material discussed throughout the semester.
- **Format:** May consist of a combination of multiple-choice questions, problem-solving exercises, and/or essay-style questions.
- **Reassessment:** Reassessable. Students who do not pass their grade may retake the final exam during the official extraordinary assessment period in June.

Extraordinary Assessment

Only the third exam is eligible for reassessment in the extraordinary session. It may consist of a combination of multiple-choice questions, problem-solving exercises, and/or essay-style questions. This exam will take place in-person, on the official date as set by the university, and carries a weight of 60% of the final grade. The first and second exams cannot be retaken, as they form part of a continuous assessment process designed to support methodological learning and ongoing student development.

Early Exam Session

The assessment in the Early Exam Session will consist of a single in-person exam covering 100% of the course content, held on the date specified in the university's official exam schedule. This exam replaces all other assessment activities; no grades from midterm exams or any other activities carried out during the academic year are retained or considered. A score of 5 out of 10 or higher is required to pass.

Additional Notes

- **Passing Grade:** A final score of 5 out of 10 or higher is required to pass the course in any of the assessments.
- **Minimum Mark Requirement:** There is no minimum numerical threshold required in any individual midterm exam for scores to be combined into the final grade. However, a score below 2 out of 10 in any major content block within the final exam — descriptive statistics or probability theory — will be considered as insufficient demonstration of the learning outcomes for that area. In such cases, the student will not pass the subject regardless of the weighted sum of grades. This criterion is intended to ensure that all core competences of the course are adequately acquired, and not merely compensated by performance in other areas. Students will be informed of this criterion at the beginning of the course.
- **Exam Delays:** Exams 1 and 2 may be delayed by up to one week if deemed necessary by the professor. Any changes to the schedule will be communicated in advance.
- **Non-reassessable Exams:** Only the final exam is reassessable. The midterm exams (weeks 6 and 13) cannot be retaken or reassessed, as they form part of a continuous assessment process designed to support methodological learning and ongoing



student development. However, although they are non-reassessable, **the content covered in those exams (descriptive statistics and basic probability concepts) may still be assessed in the final and extraordinary exams**, as the acquisition of all course competences is required to pass the subject.

•**Grade Calculation:** The final grade will be calculated as the weighted sum of the three assessments as described above.

VII.B. Assessment of students with academic exemption from class attendance

Having Academic Exemption from Class Attendance (DAAC) does not imply that students are automatically exempt from participating in the continuous assessment activities or in the training activities of compulsory attendance as established in the teaching guide. Once the exemption has been granted, students must contact the subject's teaching staff, who will propose the adaptations he/she may consider relevant, as long as they guarantee the acquisition and adequate assessment of the learning goals established. Students must maintain adequate communication with the teaching staff so that they may provide information on the dates for training and assessment activities, if these are not established in the programme and available for students at the time of achieving the exemption.

Subject with possibility of academic exemption: Yes.

VII.C. Review of assessment activities

In accordance with the Regulation for the Assessment of Learning Outcomes of Rey Juan Carlos University.

VII.D.-Students with a disability or special educational needs

In order to guarantee equal opportunities, non-discrimination, universal accessibility and academic success, students with disabilities or especial education needs may request curricular adaptations to follow their studies. These adaptations will be provided by the Unit of Attention to People with Disabilities of Rey Juan Carlos University, in accordance with the regulation which regulates the service for the Attention of People with Disabilities at the University. This Unit will issue a report for curricular adaptations, so that students with disabilities or special education needs must contact the service (at e-mail discapacidad.programa@urjc.es) in order to provide relevant information for different educational alternatives.

VII.E.-Academic behaviour, academic integrity and honesty

Rey Juan Carlos University is fully committed to the highest standards of academic integrity and honesty, so studying at the URJC means assuming and subscribing to the values of integrity and academic honesty set out in the University's Ethical Code. To support this process, the University has Rey Juan Carlos University's Academic Conduct Regulation as well as different tools (anti-plagiarism, supervision...) that offer a collective guarantee for the full development of these essential values.



VIII.-Teaching resources and materials

Basic bibliography

Title: Statistics for Business and Economics (10Th Global Edition). Author: Paul Newbold. Edit.: Prentice-Hall

Consultation bibliography

Title: Problemas de Probabilidad. Author: Martín-Pliego López, F.J., Montero Lorenzo, J. M^a y Ruiz-Maya Pérez, L. Publisher: Thompson-Paraninfo

Title: Fundamentos de Probabilidad. Author: Ruiz-Maya, L.; Martín-Pliego López, F.J. Publisher: Thompson-Paraninfo

Title: Introducción a la estadística empresarial, 3ª edición. Author: Martín-Pliego López, F.J. Publisher: Thompson-Paraninfo

IX.-Professors

Name and surname	DAVID MORENO VINCENT
E-mail address	david.moreno.vincent@urjc.es
Department	Economía Aplicada I e Historia e Instituciones Económicas
Campus	Madrid - Quintana
Category	Profesor/a Asociado/a
Person responsible for the subject	Yes
Tutorial timetable	Para consultar las tutorias póngase en contacto con el/la profesor/a a través de correo electrónico
Number of quinquennia	0
Number of sexennia	0
No. of positive evaluations by Docentia	0