

TEACHING GUIDE

CORPORATE STATISTICS II

**GRADO EN ADMINISTRACIÓN Y DIRECCIÓN DE EMPRESAS
(INGLÉS)**

ACADEMIC YEAR 2026-27

Publication date: 26-06-2026



I.-Subject Identification	
Type	OBLIGATORIA
Teaching period	2 course, 2Q semester
Nº of credits	6
Language in wich the subject is taught	English

II.-Presentation
This course is aimed at students learning different techniques to analyze the behaviour of economic variables from data collected in a sample. The goal is to achieve that students be able to identify the most appropriate tools to each situation, apply them and interpret the result obtained. The final objective being to qualify students to take decisions in a entrepreneurial scenario, using statistics. To have taken and passed Corporate Statistics I is necessary to understand and follow this subject. Corporate Statistics II will reinforce previous statistical concepts and make progress with new knowledge, methods and techniques, deepening in scientific rigor, reasoning and intuition. Moreover mathematics abilities will be also very useful.

III.-Learning outcomes
CI04. Spoken and written foreign language skills: understanding and ability to communicate in economic-corporate scenarios in English. CI07. Ability to solve problems CS01. Ability to study independently. CPR01. Practical application of knowledge. CP21 . Ability to apply language and mathematical / statistical logic in the approach of an economic - business problem CE11. Knowledge support necessary for the proper realization of learning and prior knowledge, especially Statistics
• 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

Disciplines	Lessons	Sections
I.- INTRODUCTION TO STATISTICAL INFERENCE	Lesson 1. Probability Distributions	1.1 Introduction. Probability Distributions. Discrete and continuous distributions. 1.2 Normal Distribution and CLT 1.3 Chi-square Distribution 1.4 Student's t Distribution 1.5 Snedecor's F Distribution
	Lesson 2. Introduction to Statistical Inference	2.1 Main Topics: Sample, Population, Parameters, Point Estimators and Estimates 2.2 Sampling and Sampling Distributions
II.- ESTIMATION TECHNIQUES	Lesson 3. Point Estimation	3.1. Properties of Point Estimators 3.2. Generalized Method of Moments 3.3. Method of Maximum Likelihood
	Lesson 4. Estimation with Confidence Intervals	4.1. Main Topics 4.2. Pivotal Quantity Method 4.3. Confidence Intervals for one population 4.4. Confidence Intervals for two populations
III.- HYPOTHESIS TESTING	Lesson 5: Parametric Test of Hypothesis	5.1. Key issues 5.2. Methodology 5.3. Hypothesis testing for one population 5.4. Hypothesis testing for two populations
IV.- NONPARAMETRIC HYPOTHESIS TESTING	Lesson 6. Nonparametric Test of Hypothesis	6.1. Diagnosis of models 6.2. Goodness of Fit tests - Chi-Square Pearson - Kolmogorov-Smirnoff - Normality Tests 6.3. Tests for Independence and Randomness 6.4. Tests for Homogeneity
V.- REGRESSION	Lesson 7. Introduction to the Linear Regression Model	7.1. Model Specification 7.2. Model Estimation by Ordinary Least Squares 7.3. Inference at the model 7.4. Specification problems



IV.B.-Training activities	
Type	Title
Prácticas / Resolución de ejercicios	Problems solving based on empirical data
Lectures	Notes
Other activities	Multiple choice questions



V.-Student workload	
Theoretical sessions	28
Resolution of exercises, problems, case studies, etc.	28
Practical sessions in experimental, technological and clinical laboratories, fieldwork, etc.	0
Tests and/or exams	4
Academic tutorials	32
Related activities: conferences, seminars, etc.	16
Preparation of theoretical sessions and self-study	30
Preparation of practical tasks, exercises, case studies, projects, etc.	30
Preparation for tests and/or exams	12
Total student workload	180

VI.-Methodology and academic programme		
Type	Period	Content
Theoretical sessions	Week 1 to Week 2	Lesson 1. Theoretical basis of the subject will be developed in the corresponding sessions.
Practical sessions	Week 1 to Week 2	Lesson 1. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.
Theoretical sessions	Week 3 to Week 4	Lesson 2. Theoretical basis of the subject will be developed in the corresponding sessions.
Practical sessions	Week 3 to Week 4	Lesson 2. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.
Theoretical sessions	Week 5 to Week 6	Lesson 3. Theoretical basis of the subject will be developed in the corresponding sessions.



Practical sessions	Week 5 to Week 6	Lesson 3. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.
Theoretical sessions	Week 7 to Week 8	Lesson 4. Theoretical basis of the subject will be developed in the corresponding sessions.
Practical sessions	Week 7 to Week 8	Lesson 4. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.
Theoretical sessions	Week 9 to Week 11	Lesson 5. Theoretical basis of the subject will be developed in the corresponding sessions.
Practical sessions	Week 9 to Week 11	Lesson 5. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.
Theoretical sessions	Week 12 to Week 14	Lesson 6. Theoretical basis of the subject will be developed in the corresponding sessions.
Practical sessions	Week 12 to Week 14	Lesson 6. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.
Theoretical sessions	Week 15 to Week 16	Lesson 7. Theoretical basis of the subject will be developed in the corresponding sessions.
Practical sessions	Week 15 to Week 16	Lesson 7. The practices consist of solving exercises, questions, cases or activities and making presentations by students either individually or in group. In any case supervised by the teacher.

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

The assessment activity will be based on two written exams, which can be re-evaluated in the June official call (extraordinary) for students who have not passed the subject in the May official call (ordinary). The exams are organized as it follows:

Exam A consists of 10 questions including theory and practice. A correct answer adds 1 point. A wrong answer subtracts 0.2 points. A question not answered adds 0 points. Type: Multiple Choice. Minimum mark to pass: 4 out of 10. Till June discharging effect for the June call if grade is equal or higher than 5 out of 10. Weight: 40%. Contents: the whole subject.

Exam B consists of 3 or 4 questions or problems with subsections. The maximum score is 10. Partial scores will be indicated in the test text. Type: Problem Solving. Minimum mark to pass: 5 out of 10. Till June discharging effect for the June call if grade is equal or higher than 5 out of 10. Weight: 60%. Contents: the whole subject.

Overall: Minimum mark to pass 5 out of 10.

MAY OFFICIAL CALL:

Exam A will be taken within the last three weeks of official teaching. The specific date will be specified by the subject teacher in the Virtual Campus during the first month of effective teaching. Exam B will be carried out on the official date, published on the URJC website. The final grade will be the weighted mean of both exams only in case the student has obtained the minimum mark in each exam. If the student has not reached the minimum mark required the final grade will be $\min\{4; 0.4 \cdot \text{score}(A) + 0.6 \cdot \text{score}(B)\}$.

JUNE OFFICIAL CALL:

Exam A and Exam B have a discharging effect if the student obtains at least a grade of 5 out of 10. **An exam with a grade equal to or higher than 5 out of 10 in the official May exam allows that part or grade to be saved for the June exam.** If it is necessary, the assessment activity will be based on two written exams carried out simultaneously at the official date established by the University. The final grade will be the weighted mean of both exams only in case the student has obtained the minimum mark in each exam. If the student has not reached the minimum mark required the final grade will be $\min\{4; 0.4 \cdot \text{score}(A) + 0.6 \cdot \text{score}(B)\}$. Finally, in the case of taking the two exams (A and B) in an June official call, if the minimum required score has not been achieved in some of them, it will not be necessary to correct the other exam. In this situation the grade will be the one obtained in the corrected exam that has not reached the minimum required score.

ADVANCE CALL:

The assessment activity will be based on two written exams carried out simultaneously at the official date established by the University. In the advanced call, the two aforementioned exams will be carried out, A and B, in the same way as in the ordinary call. The final grade will be the weighted mean of both exams only in case the student has obtained the minimum mark in each exam. If the student has not reached the minimum mark required the final grade will be $\min\{4; 0.4 \cdot \text{score}(A) + 0.6 \cdot \text{score}(B)\}$.

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

McClave, J.; Sincich, T. "Statistics". Pearson International Edition, 2011

Black, K.: "Business statistics: for contemporary decision making". Wiley 2008

Newbold. P.; Carlson, W.; Thorne, B. "Statistics for Business and Economics". Pearson, 2010.

Doane D.; Seward, L. "Applied Statistics in Business and Economics". McGraw-Hill International Edition, 2011.

Peña, D. "Fundamentos de Estadística". Editorial: Alianza Editorial, 2008.

ISBN 13: 978-84-206-8380-5

Consultation bibliography

López de la Manzanara-Barbero, J. "Problemas de Estadística". Editorial Pirámide, 2008.

ISBN 13: 978-84-368-0064-7 ISBN 10: 84-368-0064-8

Newbold, P. "Estadística para los Negocios y la Economía". Prentice Hall, 2010

Lind; Marchal; Wathen. "Estadística aplicada a los Negocios y la Economía". McGraw Hill, 2000.

Esteban García, J y otros. "Inferencia Estadística". Editorial Garceta, 2018.

ISBN 13: 978-84-1728-924-9

IX.-Professors

Name and surname	EVA ROMERO RAMOS
E-mail address	eva.romero@urjc.es
Department	Economía Financiera y Contabilidad
Campus	Madrid - Vicálvaro
Category	Profesor/a Ayudante Doctor/a
Academic degree	Doctor
Person responsible for the subject	Yes
Tutorial timetable	Para consultar las tutorías póngase en contacto con el/la profesor/a a través de correo electrónico
Number of quinquennia	3
Number of sexennia	0
No. of positive evaluations by Docencia	0

