

IDENTIFYING DATA				
Statistics: Statistics				
Subject	Statistics: Statistics			
Code	V03G020V01204			
Study programme	(*)Grao en Administración e Dirección de Empresas			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Basic education	1st	2nd
Teaching language	Spanish			
Department				
Coordinator	Lorenzo Picado, Leticia			
Lecturers	Lorenzo Picado, Leticia			
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General description	Statistics is a basic subject where basic statistical concepts will be studied in deep: descriptive statistics, calculation of probabilities, random variables, and parametric inference.			

Competencies	
Code	
B1	Ability to analyse and synthesise
B2	Critical and self-critical thinking
B3	Skills related to the use of those computer applications used in business management
B13	Capacity for learning and independent work
B14	Capacity to apply the theoretical and practical knowledge acquired in a specialised academic context
C7	Acquire and understand knowledge regarding: The main instrumental techniques applied to the business context
C9	Identify the generalities of the economic problems posed in companies, and know how to apply the main instruments available in order to address these problems
C10	Assess the situation and foreseeable evolution of a company based on the relevant information records
C12	Solve problems effectively and make decisions using the appropriate quantitative and qualitative methods, including the identification, expression and solution of business problems
C16	Skills in looking for, identifying and interpreting sources of relevant economic information
D3	Responsibility and the capacity to take on commitments
D4	Ethical commitment in work
D5	Motivation for quality and continuous improvement

Learning outcomes		
Expected results from this subject		Training and Learning Results
Be able to identify the statistical aspects within an empirical problem and draw conclusions from the existing information applying the concepts studied in the subject. Learn, know, apply and correctly interpret the descriptive techniques and the calculation of basic probabilities and assess their interest as a fundamental tool in data analysis.		C7 C9 C10
Effectively solve problems and issues of each of the lessons in the program using the appropriate quantitative methods.		C12
Know the importance of information and be able to assess and classify it in each decision area. Know how to correctly apply and interpret the basic descriptive techniques for the analysis of one-dimensional and two-dimensional variables.		C12 C16
Introduce the student in the use of Excel spreadsheet, in particular in the use of its statistical functions. And, in this way, favor a positive attitude towards the quantitative, in general, and the statistics, in particular, as well as towards its computer manipulation.	B3	

Promote sensitivity to the values of the scientific thinking, favoring attitudes associated with the use and development of statistical methods such as: the questioning of intuitive ideas; the critical analysis of statements; the need for verification; the ability to analyze and synthesize; or the rational decision-making.	B1 B2 B13 B14
Promote an attitude of ethical commitment, focusing on: how to obtain the data; not manipulating the results or; not copying the studies of others or taking advantage of their work.	D3 D4
Awake a taste for the use and study of Statistics, seeing it as a tool that allows us to learn more about our own field of knowledge and to start carrying out our own research.	D5

Contents

Topic	
Lesson 1: Descriptive statistics.	1.1. Distribution of frequencies. 1.2. Measures of position, dispersion, and form. 1.3. Graphic representations. 1.4. Simple and complex index numbers. Properties. CPI.
Lesson 2: Probability theory.	2.1. Basic probability concepts. 2.2. Conditional probability and independent events.
Lesson 3: Random variables.	3.1. Definition of a random variable and its distribution function. 3.2. Characteristics of a random variable. 3.3. Main probability dsitributions. 3.4. Applications of the central limit theorem.
Lesson 4: Statistical inference.	4.1 Population, sample and their characteristics. Simple random sampling. Distributions associated with sampling in normal populations. 4.2. Point estimation. Concept of estimator and its properties. 4.3. Confidence intervals in normal populations. 4.4. Hypothesis testing. Formulation of hypotheses. Classic tests in normal populations.
Lesson 5. Use of statistical software of common use.	5.1. Introduction to the statistical software. 5.2. Descriptive analysis and probabilities. 5.3. Random variables and main probability distributions. 5.4. Statistical inference.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	22.5	45	67.5
Seminars	5	4	9
Problem solving	22.5	45	67.5
Essay questions exam	2	4	6

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	The teacher will explain the different lessons of the subject, ans o she will provide the theoretical bases and / or the guidelines of a work, exercise or project that the student has to develop.
Seminars	The student may talk to the teacher for the advice / development of activities of the subject and of the learning process.
Problem solving	Resolution of problems and questions of each one of the lessons of the subject. Microsft Excel may be used.

Personalized assistance

Methodologies	Description
Seminars	In group tutoring, each student will be able to ask the teacher any doubts he/she has about the subject. The teacher will also propose a topic to be discussed and solved among the students in the group.

Assessment

	Description	Qualification	Training and Learning Results		
Lecturing	The theoretical content of the subject will be evaluated by means of test in all the exams that are carried out	10	B1 B2 B13 B14	C7 C9 C10 C12 C16	D3 D4 D5

Problem solving	The evaluation related to problem solving will be done by solving practical exercises in all the exams that are carried out.	30	B3	C7 C9 C10 C12 C16	D3 D4 D5
Essay questions exam	In the ordinary call an exam will be made. This exam will have a theoretical part (test type), as well as a practical part (problems). (see the following section for a detailed description of the evaluation sysmtem)	60	B1 B2 B13 B14	C7 C9 C10 C12 C16	D3 D4

Other comments on the Evaluation

Each student will be able to choose whether they want a continuous evaluation or an evaluation through a single final exam. It will be considered that a student chooses the first option (continuous assessment) if he/she attends the midterm exam, while it will be assumed that he/she chooses the second option (final exam) if he/she does not take the midterm exam.

The student that chooses continuous evaluation, will perform a midterm exam of lessons 1 and 2 (**first part of the subject**) during the course. Said exam will consist of a theoretical test (with a weight of 25%) and a practical part of resolution of exercises (with a weight of 75%).

In the case of passing the midterm exam with a grade greater than or equal to 5, this part will be considered approved and in the final exam only lessons 3 and 4 will be evaluated (**second part of the subject**), which will consist of an exam with a theretical test (with a weight of 25%) and a practical part of solving exercises (with a weight of 75%), as described before. The student will have in this case a grade for each part of the subject: the grade of the first part will be that obtained in the midterm exam and the grade of the second part will be the one obtained in the exam of the ordinary call.

In the case of not passing the midterm exam, in the exam of the official call the exams of the two parts of the subject will be solved (each one of which will consist of a theoretical test and problems with the weighting described before). In this case, the grade of the first part will be calculated as the weighted average of the grade in the midterm exam (40%) and of the grade obtained in the first part of the exam of the ordinary call (60%). The grade of the second part of the subject will be the one obtained in the exam.

Alternatively to the continuous assessment system, the student may choose to be evaluated with a final exam that will mean 100% of the grade. The structure of this final exam will consist of two parts as described above.

In any of the three cases described above, in order to pass the sbject it will be necessary to obtain at least 3.5 points in each of the parts and that the average of both grades is greater than or equal to 5. In case the grade obtained in each part is at least 3.5, the final grade of the subject will be calculated as the average between the grades obtained in both parts, otherwise, the final grade will be calculated as the minimum between the average of the two grades and a 4.

The evaluation in the extraordinary call, as well as in the final call in october, will be through the completion of an exam (with the same structure as described above) that will mean 100% of the qualification.

The dates of the final exams of the different calls will be available on the website of the faculty.

Sources of information

Basic Bibliography

Cao Abad, R.; Presedo Quindimil, M.A. e Naya Fernández, S., **Introducción a la estadística y sus aplicaciones**, Pirámide, 2001

Casas Sánchez, J.M. e Santos Peñas, J., **Introducción a la Estadística para Administración y Dirección de Empresas**, Centro de Estudios Ramón Areces, 2002

Martín-Pliego López, F. J. e Ruiz-Maya Pérez, L., **Fundamentos de Inferencia Estadística**, Thomson, 2005

Martín Pliego, F. J. e Ruíz-Maya, L., **Estadística I: Probabilidad.**, Thomson, 2004

Complementary Bibliography

Esteban García, J. y otros., **Estadística Descriptiva y nociones de probabilidad**, Thomson, 2005

García Pérez, C.; Casas Sánchez, J.M. e Rivera García, L.F., **Problemas de estadística descriptiva, probabilidad e inferencia**, Pirámide, 1998

Gonick, L. e Smith, W., **A Estatística en Caricaturas**, SGAPEIO, 2001

Gutiérrez, R.; Martínez, A. e Rodríguez, C., **Curso Básico de Probabilidad**, Pirámide, 1993

Levin, Rubin, Balderas, Del Valle y Gómez, **Estadística para Administración y Economía**, Prentice Hall, 2010

Martín-Pliego, Montero-Lorenzo e Ruiz-Maya, **Problemas de Inferencia Estadística**, Thomson, 2005

Recommendations

Subjects that it is recommended to have taken before

Mathematics: Mathematics/V03G020V01104

Other comments

This subject in the PCEO Degree in Business Administration and Management - Degree in Law is taught in the second semester of the first year and the teacher is María Gómez Rúa.