Universitat d'Alacant
Universidad de Alicante

INTRODUCTION TO STATISTICS (2017-18)

GENERAL INFORMATION

Code   22009

ECTS Credits   6

Departments and areas

Department	Area	Area	Report R.
FOUNDATIONS OF ECONOMIC ANALYSIS	FOUNDATIONS OF ECONOMIC ANALYSIS	YES	YES

Studies

DEGREE IN BUSINESS ADMINISTRATION AND MANAGEMENT

DOUBLE DEGREE IN LAW + ADE (DADE)

DOUBLE DEGREE IN TOURISM AND BUSINESS ADMINISTRATION AND MANAGEMENT

DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION

Context of subject

This is the first course in the sequence "Quantitative Methods: Statistics and Econometrics". The second course of this sequence is in the second year.

OBJECTIVES

Subject objectives/competences (2017-18)

Enabling the students to use Excel for descriptive statistical analysis and finding binomial and normal probabilities.

CONTENTS

Theoretical and practical contents (2017-18)

Lesson 1: Introduction and Graphical Data Analysis

1.1. Why study Statistics?
1.2. Classification of variables
1.3. Graphs to describe categorical variables
1.4. Graphs to describe time series data
1.5. Graphs to describe numerical variables
1.6. Graphs to describe relationships between variables
Basic Reference: Newbold et al. (2012), Chapter 1

Lesson 2: Numerical Measures for the Description of Data

2.1. Measures of central tendency and location
2.2. Measures of variability
2.3. Weighted mean and measures of grouped data
2.4. Changes in units of measurement
2.5. Measures of relationships between variables
Basic Reference: Newbold et al. (2012), Chapter 2

Lesson 3: Basic Concepts of Probability Theory

3.1. Random experiments, outcomes and events
3.2. Probability and its postulates
3.3. Probability rules
3.4. Bivariate probabilities
3.5. Bayes' theorem
Basic Reference: Newbold et al. (2012), Chapter 3

Lesson 4: Discrete Probability Distributions

4.1. Random variables: definition and types
4.2. Probability distributions for discrete random variables
4.3. Expectation and variance of a discrete random variable
4.4. Binomial distribution
Basic Reference: Newbold et al. (2012), Sections 4.1-4.4

Lesson 5: Continuous Probability Distributions

5.1. Continuous random variables: probability density function and cumulative distribution function
5.2. Expectation and variance of a continuous random variable
5.3. Uniform distribution
5.4. Normal distribution
Basic Reference: Newbold et al. (2012), Sections 5.1-5.3

Lesson 6: Joint Distributions of Random Variables

6.1. Joint distribution of discrete random variables
6.2. Joint distribution of continuous random variables
6.3. Independence, covariance and correlation
6.4. Linear combinations of random variables
Basic Reference: Newbold et al. (2012), Sections 4.7 and 5.6

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EVALUATION

Instruments and criteria of Evaluation 2017-18

GRADING IN JUNE ("Convocatoria Ordinaria", C3): The grade of all students who do not have a grade in any activity will be NOT TAKEN ("NO PRESENTADO"). The rest of the students will get a PASS ("APTO") if the weighted average of their four grades is not lower than 5 and, moreover, the grade on the exam of the Second Part is not lower than 4 (when computing the weighted average, a "NOT TAKEN" grade in any activity will be considered as equivalent to 0). The final grade of a student whose grade is not lower than 4 in the exam of the Second Part will be the weighted average of the four grades; the final grade of a student whose grade is lower than 4 in the exam of the Second Part will be the minimum between 4.5 and the weighted average.

GRADING IN JULY ("Convocatoria Extraordinaria", C4): It is possible to re-take the exam of the First Part (Lessons 1-3) and/or the exam of the Second Part (Lessons 4-6). However, it is not possible to re-take the exam of Descriptive Statistics with Excel, and the grade on attendance and participation of "Convocatoria Ordinaria" will be kept. Students who did not get a PASS in "Convocatoria Ordinaria" can decide whether they want to re-take both the exam of the First Part and the exam of the Second Part, or just one of them. These two retake exams will be taken separately (one for the First Part and another for the Second Part); they will be held on the date that the Faculty indicates for exam of "Convocatoria Extraordinaria C4", and they will be similar to those given in "Convocatoria Ordinaria." The grade of all students who do not take any retake exam will be NOT TAKEN ("NO PRESENTADO"). For the rest of the students, the final grade will be calculated according to the following criteria: a) STUDENTS WHO TAKE BOTH RETAKE EXAMS: If the grade they obtain on the retake exam of the Second Part is not lower than 4, their final grade will be $NR=0.10*NA+0.10*NE+0.35*N1R+0.45*N2R$, where NA and NE are the grades of the student on those fields in "Convocatoria Ordinaria," and N1R, N2R are the grades on the retake exams. If the grade they obtain on the retake exam of the Second Part is lower than 4, their final grade will be the lowest grade among 4.5 and NR, where NR is the weighted average defined in this section (i.e., they will not get a PASS); b) STUDENTS WHO ONLY TAKE THE RETAKE EXAM OF THE SECOND PART: If the grade they obtain on this retake exam is not lower than 4, their final grade will be $NR=0.10*NA+0.10*NE+0.35*N1+0.45*N2R$, where NA, NE and N1 are the grades of the student on those fields in "Convocatoria Ordinaria," and N2R is the grade on the retake exam of the Second Part. If the grade they obtain on the retake exam of the Second Part is lower than 4, their final grade will be the lowest grade among 4.5 and NR, where NR is the weighted average defined in this section (i.e., they will not get a PASS); c) STUDENTS WHO ONLY TAKE THE RETAKE EXAM OF THE FIRST PART: If the grade they obtained on the exam of the Second Part in "Convocatoria Ordinaria" is not lower than 4, their final grade will be $NR=0.10*NA+0.10*NE+0.35*N1R+0.45*N2$, where NA, NE and N2 are the grades of the student on those fields in "Convocatoria Ordinaria," and N1R is the grade on the retake exam of the First Part. If the grade they obtained on the exam of the Second Part in "Convocatoria Ordinaria" is lower than 4, their final grade will be the lowest grade among 4.5 and NR, where NR is the weighted average defined in this section (i.e., they will not get a PASS).

Type	Criterion	Description	Ponderation
ACTIVITIES OF EVALUATION DURING THE SEMESTER	EXAM OF THE FIRST PART (LESSONS 1, 2 AND 3)	It will be held on week 9, approximately. The exam will include practical questions (problems similar to those included in Problem Sets, approximately 80%) and theory questions (approximately 20%).	35
ACTIVITIES OF EVALUATION DURING THE SEMESTER	EXAM OF THE SECOND PART (LESSONS 4, 5 AND 6)	It will be held once the course is completed, on the date that the Faculty indicates for exam of "Convocatoria Ordinaria C3". The exam will include practical questions (problems similar to those included in Problem Sets, approximately 80%) and theory questions (approximately 20%).	45
ACTIVITIES OF EVALUATION DURING THE SEMESTER	EXAM OF DESCRIPTIVE STATISTICS WITH EXCEL	It will be held on week 6, approximately. This is a practical exam about data descriptive analysis using Excel (following the instructions discussed in the practical sessions of the first five weeks).	10

ACTIVITIES OF EVALUATION DURING THE SEMESTER	ATTENDANCE AND PARTICIPATION	At the beginning of the course, the instructor of each group will tell the students how this item will be assessed in his/her group. The following activities may be considered: attendance to practice sessions, presentations in class, short exams held in class, problems handed in during the course, or similar activities.	10