

SUBJECT TEACHING GUIDE

G1684 - Statistical Inference

Double Degree in Physics and Mathematics
Degree in Mathematics

Academic year 2020-2021

1. IDENTIFYING DATA					
Degree	Double Degree in Physics and Mathematics Degree in Mathematics			Type and Year	Compulsory. Year 4 Compulsory. Year 3
Faculty	Faculty of Sciences				
Discipline	Subject Area: Probability and Statistics Module: Compulsory Subjects				
Course unit title and code	G1684 - Statistical Inference				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICAS, ESTADISTICA Y COMPUTACION				
Name of lecturer	ARACELI TUERO DIAZ				
E-mail	araceli.tuero@unican.es				
Office	Facultad de Ciencias. Planta: + 1. DESPACHO PROFESORES (1052)				
Other lecturers					

3.1 LEARNING OUTCOMES
- Know the basic properties of the estimators and be able to apply the usual methods for their construction (likelihood, Bayes, least squares, ...); including interval estimation.
- - Establish and solve hypothesis tests with one and two populations
- - Build and analyze linear models
- - Use statistical analysis software

4. OBJECTIVES

Specific objectives: Knowledge

- Develop intuition regarding random phenomena and its methodology.
- Comprehend the mathematical statistics concepts.
- Handle and comprehend the different methodologies and views of the statistical inference, appreciating its applicability to real problems.

Specific objectives: Abilities

- Summarize and descriptively analyze datasets.
- Be able to build and use estimators
- Check the veracity of certain hypothesis through the use of hypothesis testing and goodness of fit test

6. COURSE ORGANIZATION

CONTENTS

1	1 Simple random sampling. Statistics
2	Punctual estimation theory.
3	Interval estimation.
4	The linear model. Regression
5	5 The linear model. Analysis of Variance
6	Final exam.
7	Tutorial.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Midterm exam.	Written exam	No	Yes	40,00
Final exam.	Written exam	Yes	Yes	40,00
Solve some problems with a software package.	Laboratory evaluation	Yes	Yes	20,00
TOTAL				100,00
Observations				
Students who have passed the first exam have the opportunity to do a new exam in June to get up note.				
Observations for part-time students				
Part-time students must say if they choose to carry out the continuous assessment or perform only the final exam. In this case, the exam will account for 100% of their rating.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

CUESTA ALBERTOS, J.A. , TUERO A. Inferencia estadística (Apuntes).

LINDGREN, B.W (1993). Statistical Theory. Chapman and Hall: New York.

ROHATGI, V.K. (1976). An Introduction to Probability Theory and Mathematical Statistics. Wiley, Nueva Cork

