

Academic Year: (2022 / 2023)

Review date: 11-05-2022

Department assigned to the subject: Statistics Department

Coordinating teacher: DURBAN REGUERA, MARIA LUZ

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Probability
Statistical Inference
Programming in R
Regression Models

OBJECTIVES

CG1 Ability to apply analysis techniques with the aim to adapt the information to real problems.

CG2 Ability to identify the best stochastic model for each real problem, and to apply it for its analysis, design and solution.

CE5 Apply advanced statistical foundation for the development and analysis of real problems that include the prediction of a response variable.

KNOWLEDGE ACQUISITION

- 1) Clinical Trials
- 2) Survival analysis
- 3) Models for longitudinal data and repeated measurements

DESCRIPTION OF CONTENTS: PROGRAMME**1 Clinical Trials Data Analysis**

- 1.1 Basic concepts
- 1.2 Treatment comparisons
- 1.3 Meta-analysis

2 Survival analysis

- 2.1 Basic concepts
- 2.2 Descriptive methods for survival data
- 2.3 Regression models for survival data

3 Models for longitudinal data and repeated measurements

- 3.1 Hierarchical data
- 3.2 Models with random intercept and slope
- 3.3 Generalized Estimating equations

LEARNING ACTIVITIES AND METHODOLOGY

Learning activities:

Master classes
Exercises
Computer labs
Projects

Teaching methodologies:

Presentations of the professor in class with computing and visual media, where the professor develops the main concepts of the subject and provides bibliography supplementing the knowledge of students.

Critical reading

ASSESSMENT SYSTEM

Assignments done during the course 100%

| | |
|---|-----|
| % end-of-term-examination: | 0 |
| % of continuous assessment (assignments, laboratory, practicals...): | 100 |

BASIC BIBLIOGRAPHY

- Balakrishnan, N. Methods and Applications of Statistics in Clinical Trials, John Wiley & Sons, 2014
- Hosmer, David W; Lemeshow, Stanley; May, Susanne Applied Survival Analysis: Regression Modeling of Time to Event Data, Wiley-Interscience, 2008
- Moore, D.F. Applied Survival Analysis Using R, Springer, 2016
- Singer, Judith D; Willet, John B Applied longitudinal data analysis : modeling change and event occurrence, Oxford University Press, 2003