APPLIED STATISTICS

Degree in Occupational Therapy

Academic year 2026-27

Code: 804144
Module: 1
Subject Area: Statistics
Type of subject: Core
Department: Statistics and Operations Research
Credits: 6 ECTS
Academic term: First semester

TEACHING STAFF

Coordinator: Molanes López, Elisa M.ª
Email: emolanes@ucm.es
Other teachers: From the Biostatistics section

SHORT DESCRIPTOR

Basic concepts of Descriptive Statistics and Inferential Statistics applied to Health Sciences from a theoretical point of view and by means of the use of statistical software.

COMPETENCIES

They are those corresponding to the Module and Subject Area.

General Competences

CG.03. and 05.

Specific Competences

CE.M2.29. and M4.2

OBJECTIVES

The student must be able to apply theoretical concepts of descriptive statistics and statistical inference to medical data using a statistical package.

SYLLABUS

1. Introduction. Scientific method and statistical method. Population and sample.
2. Descriptive statistics with one variable. Classification of variables. Tables and graphs. Measures of centralization and dispersion.
3. Descriptive statistics with two variables. Crosstabs. Graphics. Correlation and linear regression.
4. Concept of probability. Applications.
5. Usual random variables. Binomial and Normal.
6. Statistical inference: point estimate, confidence intervals and hypothesis tests.

EVALUATION

Assessment consisting of:

- ✓ Midterm Exam (MT)
- ✓ Final Exam (FE)

In the final exam, the student may be assessed on the entire syllabus or only on the second part (units 5 and 6) if he/she has passed the midterm exam. Each exam will include a section related to the practical sessions conducted during the course in the Computer Lab. The final grade will be the maximum between 25% of the MT Grade + 75% of the FE Grade (provided that FE Grade ≥ 4) and 100% of the FE Grade (units 1-6). Students will pass the course if their final grade is ≥ 5.

BIBLIOGRAPHY

- Dawson, G. F. (2012). *Interpretación fácil de la bioestadística: la conexión entre la evidencia y las decisiones médicas*. Elsevier.
- Martín Andrés, A., & Luna del Castillo, J. D. (2004). *Bioestadística para las ciencias de la Salud* (1a ed. (5a)). Ediciones Norma-Capitel.
- Milton, J. S., Turrero Nogués, A., & Zuluaga Arias, M. P. (2001). *Estadística para biología y ciencias de la salud* (3ª ed., ampliada en 2007). McGraw-Hill/Interamericana.
- Prieto Valiente, L., & Herranz Tejedor, I. (2018). *Bioestadística sin dificultades matemáticas: En busca de tesoros escondidos. Análisis estadístico de datos en investigación médica y sociológica* (6ª reimpresión). Díaz de Santos.
- Quesada Paloma, V., Isidoro Martín, A., & López Martín, L. A. (2011). *Curso y ejercicios de Estadística: aplicación a las Ciencias Biológicas, Médicas y Sociales*. Alhambra.
- Woolson, R. F. (1987). Statistical methods for the analysis of biomedical data. John Wiley & Sons.