

**Scientific Methodology and Biostatistics**

Code: 102989  
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	FB	1	2

### Contact

Name: Gianluigi Caltabiano  
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### Use of Languages

Principal working language: catalan (cat)  
Some groups entirely in English: No  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: No

### Teachers

Gianluigi Caltabiano  
Mariela Patricia Aguayo Gonzalez

### Prerequisites

Bioestadística: it is advisable to have basic knowledge of mathematics

### Objectives and Contextualisation

This subject aims to help the student with the basic training in scientific methodology and bioestadística. Physiotherapy professionals face a set of situations-problem, in which they test their abilities (selection of information, organization of reasoning, distinction between the fundamental and the accessory, statistical interpretation of health problems ...). The purpose is to structure a critical and thoughtful thinking that allows the correct use of scientific knowledge in health sciences and the analysis and resolution of problems in the field of physiotherapy.

The subject raises the basic knowledge and abilities to apply in the accomplishment of the final work of degree.

### Competences

- Analyse and synthesise.
- Display a strategic and flexible attitude to learning.
- Display knowledge of the sciences, models, techniques and instruments around which physiotherapy is structured and developed.
- Express ideas fluently, coherently and correctly, both orally and in writing.
- Generate innovative and competitive proposals for research and professional activities.
- Manage information systems.
- Organise and plan.

### Learning Outcomes

1. Analyse and synthesise.
2. Display a strategic and flexible attitude to learning.
3. Express ideas fluently, coherently and correctly, both orally and in writing.
4. Generate innovative and competitive proposals for research and professional activities.
5. Identify and use the principles and methods for conducting research in physiotherapy.
6. Manage information systems.
7. Organise and plan.
8. Statistically process data on physiotherapy treatments.
9. Use reliable sources of information concerning the health sciences and use the information obtained correctly.
10. Use statistical techniques in the workplace in order to gain a deeper understanding of results obtained.

## Content

### Scientific Methodology

Theoretical bases and scientific methodology.

Scientific approach Sources of knowledge. Scientific method Research process. Stages of the research process. Research project: phases and presentation. Type of presentation: poster, oral communication, original article.

### Biostatistics:

Introduction to biostatistics. Basics Collection and tabulation of the information. Graphic presentation of the research. Measures of central tendency. Contingency tables and regression line. Binomial and normal distribution. Confidence intervals and hypothesis tests.

Documentary sources. Bibliographical review and sources of information

## Methodology

Activities are designed and planned so that students can achieve the relevant learning outcomes.

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classroom Practices	4	0.16	1, 3, 5, 2, 9
Lab Practices	20	0.8	1, 8, 10, 3, 6, 5, 7, 2, 9
THEORY (TE)	21	0.84	8
Type: Autonomous			
Personal Study	99	3.96	1, 3, 4, 6, 7, 2

## Assessment

Evaluation criteria:

scientific methodology: individual or group work is compulsory and if one of them is not presented within the established period, it will be evaluated as zero (0).

- The final grade of the subject is the sum of the note obtained in scientific methodology and bioestadística with the weight established in this guide, as long as they have a minimum grade of 4 in each module. The weighting of both biostatistics as a scientific methodology will be carried out whenever the minimum mark of the written work and the grade of the exams are at least 4.

-The partial evaluation activities to which the student is not present will make an average of 0.

Definition of NO EVALUATION: In each part of the subject, both scientific methodology and bioestadística, it will be understood by Nonvalueable (NA) that situation in which the student DOES NOT present to 50% or more of the evaluation activities . Likewise, having a NA in one of the two parts of the subject, will represent a NA in the whole course.

There will be a recovery exam for those students who have not approved the subject through standard modality. In order to participate in this exam the students must have been previously evaluated in a series of activities whose weight equals to a minimum of two thirds of the total grade of the subject

Review Tests: All students have the right to review the assessment tests by appointment with the teacher. The review will consist of an individual tutorial where the student will be given the feedback.

The treatment of possible individual cases will be carried out from a teaching committee (made up of the coordinator of the subject, and 2 of the professors of the same, 1 of each department involved) where the student's particular situation will be evaluated and the most appropriate decisions will be taken.

Reconsideration evidence: All students who have not passed the continuous assessment with a different note from Non-Appraising (NA) have the right to proof of recovery at first call.

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Bioestadística - Deliveries of written works / practices to deliver	15%	1	0.04	1, 3, 4, 5, 7, 2, 9
Bioestadística - Written evaluation through objective tests of selection of multiple choice items	35%	3	0.12	1, 8, 10, 2
Scientific methodology: Deliveries of written works	15%	1	0.04	8, 10, 6
Scientific methodology: Written evaluation through objective tests of selection of multiple choice items	35%	1	0.04	1, 5, 2

## Bibliography

### Bibliografy

Francisca Ríus Díaz, Julia Wärnberg. Bioestadística 2ªed. Madrid: Ed Paraninfo, 2015

Cobo E, Muñoz P, González JA. Bioestadística para no estadísticos: principios para interpretar un estudio científico. Barcelona: Elsevier Masson, 2007.

Gerrish, K, Lacey A. Investigación en Enfermería. Madrid: McGraw-Hill-Interamericana 2008.

Polít D., Hungler, B. Investigación científica en Cien-cias de la Salud 6a ed. México : McGraw-Hill Interamericana, 2000.

Argimon J.M., Jimenez J. Métodos de investigación clínica y epidemiológica. 4ª ed. Barcelona: Elsevier España,SA, 2013.

Abad E., Monistrol O., Altarribas E., Paredes A. Lectura crítica de la literatura científica. Enfermería Clínica 2003;13(1): p.32-40.

Rodríguez del Águila M.M, Pérez S., Sordo L., Fernández M. A. Cómo elaborar un protocolo de investigación en salud Med Clin (Barc).2007;129(8): p. 299-302.

Cabezali Sánchez JM, Sánchez Aldeguer J. El cuestionario: bases metodológicas y su utilización en Fisioterapia, para lograr una mayor calidad asistencial. Fisioterapia 1997;19(2):97-103

Fernandez de Sanmamed MJ Adecuación de las normas de publicación en revistas científicas a las investigaciones cualitativas. Atención Primaria Vol.25 Núm. (7): p. 118-122

Fernández de Sanmamed MJ, Calderón C. Investigación Cualitativa en Atención Primaria. En: Martín Zurro A, Cano Pérez JF. Atención Primaria. 5ª ed. Barcelona: Hancourt Internacional;2003.

Links

<http://blogs.uab.cat/cuidabloc/>

<http://www.pedro.org.au/>

<http://www.scopus.org>

<http://www.ncbi.nlm.nih.gov/pubmed>

<http://www.easp.es/exploraevidencia/>

<http://www.fisterra.com>

<http://www.msc.es/resp>

<http://www.doaj.org>