1. BASIC DATA

Subject	Research Methodology and Clinical Documentation
Degree	Degree in Physiotherapy
School/Faculty	Physical Activity and Sport Sciences and Physiotherapy
Course	Second
ECTS	6 ECTS (150 hours)
Character	Obligatory
Language/s	English/French/Spanish
Modality	In person
Semester	Second semester
Academic year	2025/2026
Coordinator	Luis Torija Lopez

2. PRESENTATION

Research Methodology is a subject of the second year of the degree in Physiotherapy and is taught in the second semester. It has a value of 6 ECTS and is a compulsory subject within the Degree. This subject develops a first approach of the student to the vision of the world of Physiotherapy from a scientific clinical perspective. It has the ultimate goal of building a bridge between scientific knowledge and professional practice that leads students to a global professional and personal improvement. This goal will be achieved through the development of competencies that will be detailed later.

To achieve its objectives, this subject includes three fundamental topics in its contents: A review of the fundamental principles of clinical research, an introduction to data analysis in clinical research and a presentation of the process of searching for scientific information in the databases built for this purpose. The ECTS of this subject includes lectures, case analysis, problem-based learning, seminars, directed work, tutorials and hours of autonomous work.

3. COMPETENCES AND LEARNING OUTCOMES

Core competencies:

- CB1: That students have demonstrated to possess and understand knowledge in an area of study that starts from the basis of general secondary education, and is usually found at a level that,

although supported by advanced textbooks, also includes some aspects that imply knowledge from the forefront of their field of study.

- CB2: That students know how to apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.
- CB4: That students can transmit information, ideas, problems and solutions to both specialized and non-specialized audiences.
- CB5: That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Transversal competences:

- CT 4: Capacity for analysis and synthesis.
- CT 6: Information management capacity.
- CT 13: Critical reasoning.
- CT 16: Motivation for quality.

Specific competences:

- CE 14: Ability to incorporate the ethical and legal principles of the profession into the professional culture.
- EC 93: Knowledge and learning of:
  - Research and evaluation methodologies that allow the integration of theoretical perspectives and research experiences in the design and implementation of effective physiotherapy.
  - The theories that underpin problem-solving ability and clinical reasoning.
- EC 94: Maintain an attitude of learning and improvement. This includes expressing interest and acting in a constant search for information and professional improvement.

Learning outcomes:

- RA1: Understanding of fundamental concepts related to the contents of the subject.
- RA2: Capacity for synthesis and discrimination of health documentation
- RA3: Ability to carry out work, search and develop research strategies from literature.

The table below shows the relationship between the competences that are developed in the subject and the learning outcomes that are pursued:

Competences	Learning outcomes
CB1, CB5, EC14, EC93	RA1: Understanding of fundamental concepts related to the contents of the subject
CB1, CB4, CT4, CT6, CT13, CE94	RA2: Capacity for synthesis and discrimination of health documentation
CB1, CB2, CB4, CT4, CT6, CT13, CT16, CE14, CE94	RA3: Ability to carry out work, search and develop research strategies from literature.

4. CONTENTS

The subject of Research Methodology and Clinical Documentation is organized into seven learning units. Each learning unit is, in turn, divided into themes:

Unit 1: Research Methodology in Health Sciences.
THEME 1: Research in Health Sciences
1.1. Historical evolution of science
1.2. The scientific method
1.3. General principles of research in Health Sciences. Basic and applied research 1.4.
The Clinical Research Approach: Qualitative and Quantitative Research
1.5. Errors in research. Internal and external validity.
1.6. Formulating a Research Problem: Research Question, Hypotheses, and Objectives
1.7. The variables according to the methodological perspective. Data collection techniques
1.8. Design of questionnaires and interviews
1.9. Validity and reliability of measurement methods
1.10. Sampling and study planning
1.11. Ethical aspects of research

TOPIC 2: Study strategies and designs
2.1. Observational, experimental and quasi-experimental strategy
2.2. Design of clinical studies: general concepts and types
2.3. Design of cross-sectional studies
2.4. Design of case-control studies
2.5. Design of cohort studies
2.6. Design of a randomised controlled trial (RCT)
2.7. Phases of clinical investigation involving medicinal products and medical devices
2.8. Design of secondary analyses

Unit 2: Descriptive and inferential statistics
ITEM 3. Introduction to statistics
3.1. General statistical concepts
3.2. Classification of variables according to their measurement
3.3. Sample size
ITEM 4. Descriptive statistics
4.1. Main descriptive statistics
4.2. Distribution of variables. Normality
4.3. Graphical representation
ITEM 5. Estimation and testing of hypotheses

5.1. Parameter estimation and confidence interval
5.2. Formulation of statistical hypotheses and hypothesis testing.

ITEM 6. Predictive statistics

6.1. Association and quantification of risks
6.2. Partnership measures

ITEM 7. Inferential statistics

7.1. Contrast of differences
7.2. Other statistical analyses. Test for more than three data groups.

Unit 3: SPSS Database Management

ITEM 8. Statistical analysis with computer support

8.1. Creation of the database
8.2. Design of the analysis plan: Application of theoretical knowledge to data analysis

Unit 4: Peculiarities of Physiotherapy in research

ITEM 9. Research in Physiotherapy

9.1. Reasons to investigate in Physiotherapy
9.2. Application of study designs to physiotherapy

Unit 5: The practice of evidence-based physiotherapy

ITEM 10. Evidence in Physiotherapy

10.1. Scientific evidence in the practice of Physiotherapy
10.2. Clinical Practice Guidelines

Unit 6: Scientific publications in Health Sciences: Databases, search techniques and document retrieval.

ITEM 11. Clinical documentation

11.1. Bibliographic databases in the field of Health Sciences
11.2. Search strategies in biomedical research
11.3. Evaluation of the quality of scientific articles and journals

Unit 7: Written and oral scientific communication. Preparation of research papers

ITEM 12. Scientific writing

12.1. Scientific communication
12.2. References. Referral management programs. The Vancouver Way
12.3. Scientific writing: Preparation of reports and research documents. The study protocol.
12.4. The scientific article: types and components
12.5. Peer review and the publication process

5. TEACHING-LEARNING METHODOLOGIES

The following are the types of teaching-learning methodologies that will be applied:

- Self-instruction
- Master class
- Case analysis
- Seminars
- Problems

6. TRAINING ACTIVITIES

Next, the types of training activities that will be carried out and the dedication in hours of the student to each of them are identified:

Face-to-face modality:

Training activity	Number of hours
Master Lessons	25
Practical Exercises	15
Class discussions	10
Scientific works	20
Self-instruction	50
Troubleshooting	20
Tutorials	10
TOTAL	**150**

7. EVALUATION

Next, the evaluation systems are listed, as well as their weight on the total grade of the subject:

Face-to-face modality:

Evaluation system	Weight
Knowledge tests	34%
Case/Problem	36%
Scientific-Group Works	30%

In the Virtual Campus, when you access the subject, you can consult in detail the evaluation activities that you must carry out, as well as the delivery dates and the evaluation procedures of each of them.

7.1. Ordinary call

In order to benefit from the Ordinary Call, the student must attend at least 50% of the classes. The evaluation of the subject will be continuous and will combine two types of elements: Knowledge tests (Exams) and Practical Activities (Practical Exercises and Project).

The evaluation of theoretical knowledge will be carried out through two tests, non-liberatory and each composed of two subsections, which will represent 60% of the final grade of the subject. It will be necessary that the weighted grade of all the tests is equal to or greater than 5.0 out of 10. The first objective test, composed of two subtests, will account for 25% of this part (15% of the overall); The second objective test, composed of two subtests, will have a weight of 75% (45% of the overall test).

As for the rest of the activities, they will represent 40% of the final grade of the subject, distributed as follows: Activity 1: 10%, Activity 2: 15% (within this percentage both the work presented and its oral presentation will be valued), Activity 3: 5%, Activity 5: 5%, Activity 6: 5%). The subject is approved in ordinary call provided that there is a minimum grade in each of the parts (theoretical and practical) equal to or greater than 5.0 out of 10, not being able to compensate the grade of each of the parts with that of the other. Students who have at least a 5.0 in one of the parts (theoretical or practical) and do not pass the other, must make in extraordinary call only the part not approved.

Since one of the objectives of this subject is to familiarize the student with the discipline that governs the scientific method, failure to comply with the deadlines and / or forms of delivery of the activities will mean the non-evaluation of these, qualifying with a 0 or with an NP (not presented).

All students are reminded in the same way that according to the disciplinary regulations of the European University, it is considered a very serious offense "Plagiarism, in whole or in part, of intellectual works of any kind" (Article 5, h) being the relative sanctions the following: "Very serious faults related to plagiarism and the use of fraudulent means to pass the evaluation tests, will result in the loss of the corresponding call, as well as the reflection of the fault and its reason, in the academic record" (Article 8, 3)

7.2. Extraordinary call

The subject is approved in extraordinary call provided that there is a minimum grade in each of the parts (theoretical and practical) of 5.0 out of 10, not being able to compensate the grade of each of the parts with that of the other. To pass the subject in extraordinary call it is necessary to obtain a grade greater than or equal to 5.0 out of 10 in the final grade of the subject.

Students who have obtained at least a 5.0 in one of the parts (theoretical or practical) in ordinary call, must make in extraordinary call only the part not approved.

In case of not having passed the practical part in ordinary call, the activity proposed by the teaching team must be delivered in extraordinary call. You will find information about it in the virtual campus in the extraordinary call section.

In extraordinary call each of the parties will have the same weight (theoretical / practical: 60% / 40%) but the activities will be individual.

8. SCHEDULE

This section indicates the schedule with delivery dates of evaluable activities of the subject:

Evaluable activities	Date
Activity 1. Design of a research project	Week 2-8
Activity 2. Implementation and analysis of the research project. Preparation of a final report in the form of a scientific article. Exhibition of the work	Week 8-15
Activity 3. Article Design	Week 5-6
Activity 4. First objective test	Week 8
Activity 5. Analysis of a scientific article	Week 12
Activity 6. Analysis and reporting of results with SPSS	Week 13
Activity 7. Second objective test	Week 16

This schedule may be modified for logistical reasons of the activities. Any modification will be notified to the student in a timely manner.

9. BIBLIOGRAPHY

The following is recommended bibliography:

- Argimon, J. and Jimenez, J. (2010): Clinical and epidemiological research methods. Barcelona: Elsevier.
- Bowers, D. (2008): Medical Statistics from Scratch (Second Edition). West Sussex: Wiley
- Caceres, R. (2007): Statistics applied to health sciences. Madrid: Díaz de Santos.
- Field, A. (2010): Discovering Statistics Using SPSS (Third edition). London: SAGE
- Harris, M and Taylor, G. (2011): Medical Statistics Made Easy (2nd Edition). Oxfordshire: Scion.
- Hulley, S. B. et all (2007): Designing Clinical Research (Third Edition). Philadelphia: Lippincott Williams & Wilkins.
- Marston, L. (2010): Introductory Statistics for Health and Nursing Using SPSS. London: SAGE. Boj JR, Catalá M, García C, Mendoza A, Planells P.

10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

From the Educational Guidance and Diversity Unit (ODI) we offer accompaniment to our students throughout their university life to help them achieve their academic achievements. Other pillars of our action are the inclusion of students with specific educational support needs, universal accessibility in the different campuses of the university and equal opportunities.
From this Unit students are offered:

1. Accompaniment and follow-up through the realization of advice and personalized plans to students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made, that is, at the level of methodology and evaluation, in those students with specific educational support needs, thereby pursuing equal opportunities for all students.
3. We offer students different extracurricular training resources to develop various skills that will enrich them in their personal and professional development.
4. Vocational guidance through the provision of tools and advice to students with vocational doubts or who believe that they have made a mistake in the choice of the degree.

Students who need educational support can write to us at:
orientacioneducativa@universidadeuropea.es

11. SATISFACTION SURVEYS

Your opinion matters!

Universidad Europea encourages you to participate in satisfaction surveys to detect strengths and areas for improvement on the teaching staff, the degree and the teaching-learning process.

The surveys will be available in the survey space of your virtual campus or through your email.

Your assessment is necessary to improve the quality of the degree.

Thank you very much for your participation.