

1. BASIC DATA

Subject	MEDICAL PATHOLOGY AND PHARMACOLOGY I
Titration	Bachelor's Degree in Physiotherapy
School/ Faculty	Physical Activity and Sports Sciences and Physiotherapy
Course	Second
ECTS	6 ECTS
Character	Compulsory
Language/s	English
Modality	On campus
Semester	First semester
Academic year	2024/2025
Coordinating Teacher	Miguel Sebastian Pedromingo Kus
Teacher	Isabel Mínguez Esteban

2. INTRODUCTION

Medical Pathology and Pharmacology I is a second-year subject of the Bachelor's Degree in Physiotherapy and Double Degree in Physiotherapy CAFYD and is taught in the first semester. It has a value of 6 ECTS and is a compulsory subject within the Degree.

Taking into account the training profile that the student is expected to achieve, it provides basic and specific training on the main diseases and their treatments. At the same time, it helps the student to acquire the theoretical knowledge and practical skills necessary to issue a correct clinical diagnosis, it favours the development of treatment plans and introduces them to preclinical therapeutic practice prior to the start of praxis with patients.

The subject respects a chronological order that allows you to progressively acquire increasingly complex knowledge, in addition to the acquisition of the skill that you will incorporate in traditional and advanced simulation. In the planning of the *Medical Pathology and Pharmacology I* curriculum, the general and specific competencies necessary to develop the different levels of learning in the subject are clearly defined. The subject is taught in Spanish, English and French given the marked international character of the European University of Madrid, providing students with sufficient tools to achieve a level of knowledge that allows them to develop their professional work internationally.

The ECTS of this subject include master-classes, case analysis, problem-based learning, advanced simulation environments, preclinical practices in the traditional simulation laboratory, portfolios, seminars, supervised work, tutorials and hours of autonomous work.

All this will allow the future graduate to acquire all the knowledge and skills necessary to carry out a correct diagnosis, adequate prevention, development of treatment plans and initiate the patient's therapy to finally apply it outside the preclinical environment

3. SKILLS AND LEARNING OUTCOMES

Basic skills (CB, by the acronym in Spanish):

- CB1: Students must have demonstrated that they possess and understand knowledge in an area of study that is based on the basis of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study.
- CB2: Students must know how to apply their knowledge to their work or vocation in a professional way and possess the competencies that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.
- CB3: Students must have the ability to gather and interpret relevant data (usually within their area of study) in order to make judgments that include reflection on relevant social, scientific or ethical issues.
- CB4: Students should be able to transmit information, ideas, problems and solutions to both a specialised and non-specialised audience.
- CB5: Students must have developed those learning skills necessary to undertake further studies with a high degree of autonomy

Cross-curricular skills (CT, by the acronym in Spanish):

- TC 1: Decision making.
- TC 3: Organizational and Planning Capacity.
- TC 9: Ethical commitment
- TC 18: Creativity.
- TC 20: Initiative and entrepreneurial spirit.

Specific skills (CE, by the acronym in Spanish):

- CE 120: Know and understand the pathophysiological mechanism of the different diseases, developing the ability to relate to the different processes studied.
- CE 121: Recognize diseases of the different organs and systems, with special emphasis on those most related to the practice of physiotherapy.
- CE 122: At the end of the study of the module, the student must know the terminology that allows them to communicate with the rest of the health personnel, as well as understand the different documents that can constitute a medical record.
- CE 123: Learn to observe the patient in his or her entirety, knowing how to detect the warning signs that may make it necessary to consult other health professionals.
- CE 124: Delve into the specific characteristics of the disease in the elderly patient.
- CE 125: Know the general pharmacological bases.
- CE 126: Identify the pharmacological group of the most commonly used treatments in physiotherapy.

Learning outcomes (RA, by the acronym in Spanish):

- RA1: Understanding of fundamental concepts related to Medical Pathology.
- RA2: Understanding of the basic aspects of Pharmacology.

- RA3: Ability to apply theoretical knowledge to practical cases for their resolution.
- RA4: Ability to recognize significant information, search for and relate relevant data in the basic aspects of the subject.

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

Competences	Learning Outcomes
CB1, CB2, CB3, CB5 CT3 CE122, CE130, CE131, CE132, CE133, CE134, CE135, CE136	RA1. Understanding of fundamental concepts related to Medical Pathology.
CB2, CB3, CB5 CT3	RA2: Understanding of the basic aspects of Pharmacology.
CE122, CE131, CE131, CE132, CE133, CE134, CE135	RA3: Ability to apply theoretical knowledge to practical cases for their resolution.
CB4 CT3, CT9, CT10, CT18	RA4: Ability to recognize significant information, search for and relate relevant data in the basic aspects of the subject.

4. CONTENTS

The contents are organized into four modules.

GENERAL ASPECTS OF MEDICAL PATHOLOGY:

Topic 1 Pain and Red Flags
Topic 2 Inflammation
Topic 3 Fever
Topic 4 Infectious syndrome
Topic 5 Cancer

PHARMACOLOGY

Topic 6 General Pharmacology
Topic 7 Pharmacokinetics
Topic 8 Pharmacodynamics
Topic 9 Pharmacovigilance

GERIATRICS

Topic 10 Geriatrics Basics - Normal Aging Process
Topic 11 Sick elderly - Geriatric syndromes

RESPIRATORY SYSTEM: PATHOLOGY AND PHARMACOLOGY

Topic 12 Anatomy and Pathophysiology of the Respiratory System

Topic 13 Medical history. Semiology and Physical Examination of the Respiratory System

Topic 14 Complementary tests

Topic 15 Respiratory failure

Topic 16 Obstructive pathologies

Topic 17 Restrictive pathologies

Topic 18 Infectious pathology of the upper and lower respiratory system

Topic 19 Tuberculosis and Influenza

Topic 20 Other respiratory pathologies

Topic 21 Pharmacology of the respiratory system

5. TEACHING-LEARNING METHODS

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

- Master class.
- Case method.
- Cooperative learning.
- Problem-based learning.

6. TRAINING ACTIVITIES

The types of training activities that will be carried out and the student's dedication in hours to each of them are identified below:

Face-to-face modality:

Training activity	Number of hours
Master Classes	30
Seminars	20
Tutorials	5
Case Analysis	25
Practice in class	20
Freelance work	50
TOTAL	150

7. EVALUATION

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

Knowledge tests: 60%
Learning Folder 40%

On campus:

Evaluation System	Weight
Learning Folder	40%
Knowledge Tests	60%

On the Virtual Campus, when you access the subject, you will be able to consult in detail the evaluation activities you must carry out, as well as the delivery dates and evaluation procedures for each of them.

7.1. Ordinary call

To pass the subject you must know that the evaluation procedures will include evaluation of knowledge, skills, abilities and attitudes.

To pass the subject in the ordinary call, you must attend at least 50% of the classes taught (between face-to-face and online) and actively participate in the theoretical classes.

To pass the subject in the ordinary call, it is necessary to obtain a final grade equal to or greater than 5.0 out of 10.0 in both assessable parts of the subject: theoretical block vs practical block

- **Theoretical block (60%):** consists of two midterm exams.
 - A first partial exam that will be 30% of the grade of this block.
 - A second midterm exam will be 70% of the grade of this block.

The first midterm exam will include the part of the subject taught up to that moment and the second exam will evaluate the entire subject.

The weighted grade of these two exams must be equal to or greater than 5 to pass this block.

- **Practical block / Training activities (40%):** 3 training activities will be carried out plus simulation in a simulated hospital.
The average of all the marks of these training activities must be equal to or greater than 5 to pass this block.

Characteristics of the Objective Assessment Test first partial (30% of the final grade of this block) and second partial (70% of the final grade of this block):

- QUIZ QUESTIONS (multiple choice) + SHORT DEVELOPMENT QUESTIONS
- EVALUATION CRITERIA of the objective tests:

The exam is formally **divided into 2 parts of equal value each (10 points):**

- First part with **multiple choice test**
 - Multiple-choice multiple-choice questions (4 options) with a single valid-correct answer.
 - Test scoring method:
 - 1 correct question adds 1 point
 - 1 wrong question subtracts 1/3 of a point.
 - 1 blank question does not score or subtract.
- Second part with **short development questions** around clinical cases or open questions.
- Duration of the knowledge tests: the duration of the exam will be communicated via virtual campus prior to the exam.

7.2. Extraordinary call

To pass the subject in the extraordinary call, a grade greater than or equal to 5.0 out of 10.0 must be obtained in the final grade of the subject, following the same criteria described as for the ordinary call.

If in the ordinary call only one of the two blocks is passed, that mark will be saved and the block not passed will be recovered.

Any modification will be notified to the student in a timely manner.

8. SCHEDULE

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

Week	Contents	Training/assessable activities	Weight in the evaluation of the assessable activity
Week 1	Presentation of the Subject Topic 1. Pain	Master Class	
Week 2	Topic 2 Inflammation Topic 3 Fever	Master Class	
Week 3	PRESENTATION Activity 1: DIFFERENTIAL DIAGNOSIS OF PAIN Case report	Master Class	
Week 4	Topic 4 Infectious syndrome Topic 5 Cancer	Master Class	
Week 5	Topic 6 General Pharmacology	Master Class	
Week 6	Topic 7 Pharmacokinetics Topic 8 Pharmacodynamics	Master Class	
Week 7	Topic 9 Pharmacovigilance Topic 10 Geriatrics Basics - Aging Process	Master Class	
Week 8	Topic 11 Sick elderly - Geriatric syndromes Topic 12 Anatomy and Pathophysiology of the Respiratory System	Master Class	
Week 9	Topic 13 Medical history. Semiology and Physical Examination of the Respiratory System	Master Class	
10 weeks	Topic 14 Complementary tests SEMINAR Block 1	Master Class Practical exercises	
Week 11	REVIEW KNOWLEDGE TEST 1	Assessable test	
Week 12	Topic 15 Respiratory failure Topic 16 Obstructive pathologies	Master Class	
Week 13	Topic 17 Restrictive pathologies Topic 18 Infectious pathology of the upper and lower respiratory system	Master Class	
14 weeks	Topic 19 Tuberculosis and Influenza Topic 20 Other respiratory	Master Class	

	pathologies		
15 weeks	Topic 21 Pharmacology of the respiratory system Activity 4: SIMULATED HOSPITAL	Master Class Activity	
16 weeks	SEMINAR Block 2 PRESENTATION Activity GERIATRIC ASSESSMENT	Practical exercises Activity	
Weeks 17	PRESENTATION Activity GERIATRIC ASSESSMENT Activity 4: SIMULATED HOSPITAL	Activity	
Week 18	Tutoring/Revision KNOWLEDGE TEST 2ND	Assessable test	
Week 19	EXAM REVIEW (for students who request it)		
TOTAL			

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 reference works for the follow-up of the subject are:

- JOSÉ LUIS PÉREZ ARELLANO. Manual of General Pathology – Sisinio de Castro. 8th edition. Ed Elsevier España SL, Barcelona. 2019.
- F. JAVIER LASO GUZMÁN. Introduction to Clinical Medicine: Pathophysiology and Semiology. 4th edition. Ed Elsevier 2020.

Below is the recommended bibliography on which the topics corresponding to the Master Classes are based:

1. TEXTS

J. GARCIA-CONDE, General Pathology. Clinical Semiology and Physiopathology, Madrid, McGraw-Hill-Interamericana de España, 3rd edition 2015.

FLÓREZ J, ARMIJO JA, MEDIAVILLA A. Human pharmacology. Masson-Salvat, 6th edition. 2013.

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Màrius Duran Hortolà, Concepció Mestres Miralles, María Rosa Nogues Lloret. **Fundamentals of Pharmacology for Physiotherapists**. Ed. Panamericana. 2017. ISBN 9788491101871.

Seco Calvo, J. Respiratory system. Methods, clinical physiotherapy and respiratory conditions for physiotherapists. Ed. Panamericana 2018. ISBN 9788491102649

2. CLINICAL PRACTICE GUIDELINES – Multidisciplinary Documents.

Clinical Practice Guidelines for the Diagnosis and Treatment of Patients with Chronic Obstructive Pulmonary Disease (COPD) – Spanish COPD Guide (GesEPOC). 2017 version. GesEPOC Working Group. Archives of Bronconeumology, 2017. Vol 53. Extraordinary 1.

Spanish Guide for the Management of Asthma, version 4.3. 2018, GEMA Executive Committee. ISBN: 978-84-7989-886-1.

SEIMC Clinical Protocols. Upper respiratory infections. Arístegui J et al. Spanish Society of Infectious Diseases and Clinical Microbiology. 2000.

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Nosocomial viriasis. Hepatitis viruses, herpesviruses and influenza viruses. Martínez JA, Pumarola T. Infectious Diseases and Clinical Microbiology, 2013; 31(7):471–479.

Consensus document on the diagnosis, treatment and prevention of tuberculosis. González-Martín J et al. Infectious Diseases and Clinical Microbiology. 2010; 28(5): 297.e1–297.e20

National consensus on the diagnosis, risk stratification, and treatment of patients with pulmonary thromboembolism. Uresandi F. et al. Archives of Bronconeumology. 2013; 49(12):534–547

10. DIVERSITY AWARENESS UNIT

From the Diversity Awareness Unit (ODI) we offer support to our students throughout their university life to help them achieve their academic goals. Other pillars of our actions are the inclusion of students with specific educational support needs, universal accessibility on the different campuses of the university and the equalization of opportunities.

This Unit offers students:

1. Accompaniment and monitoring by providing personalized advice and 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 equity of opportunities for all students.
3. We offer students different extracurricular training resources to develop various skills that will enrich their personal and professional development.
4. Vocational guidance by providing tools and advice to students with vocational doubts or who believe that they have made a mistake in choosing a degree.

Students who need educational support can write to us at:

orientacioneducativa@universidadeuropea.es

11. STUDENT SATISFACTION SURVEYS

Your opinion matters!

The European University encourages you to participate in satisfaction surveys to detect strengths and areas for improvement in 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.