

1. OVERVIEW

Subject area	Medical Pathology and Pharmacology 2
Degree	Bachelor's Degree in Physiotherapy
School/Faculty	Faculty of Health
Year	2nd
ECTS	6 ECTS
Type	Compulsory
Language(s)	Spanish
Delivery Mode	On campus
Semester	2nd

2. INTRODUCTION

Ethiology is the science that allows us to understand the causes of diseases, how they can manifest (signs and symptoms), and what diagnostic or complementary monitoring tests are available to assess their progression and possible complications, with the aim of reducing or alleviating them.

Pharmacology, on the other hand, is an essential health science, not only for pharmacists but also for physicians, nurses, physiotherapists, and other healthcare professionals whose work involves medications and/or patients. The goal of pharmacology is to study the effects and properties of drugs on the organism.

The Medical Pathology and Pharmacology course aims to introduce physiotherapy students to the knowledge of diseases and their pharmacological approaches, as it will be a key tool for the proper development of their professional activities.

3. SKILLS AND LEARNING OUTCOMES

Basic and General skills (CB / CG, by the acronym in Spanish):

- CC 1- That students have demonstrated knowledge and understanding in an area of study that is at the core of general secondary education, and is usually at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.
- CC 2- 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 development and defence of arguments and the resolution of problems within their area of study.
- CC 3 - students have the ability to gather and interpret relevant data (usually within their area of study) to make judgements that include reflection on relevant social, scientific or ethical issues.

- CC 4- Students are able to convey information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CC 5- Students have developed those learning skills necessary to undertake further study with a high degree of autonomy.
- CG7 - Design a physiotherapy intervention plan on the basis of suitability, validity and efficiency.
- CG8 - Execute, manage and coordinate the physiotherapy intervention plan using your own therapeutic tools according to the user's individual circumstances.

Cross-Curricular skills

- CT10 - Initiative and entrepreneurial spirit: Ability to undertake difficult or risky actions with resolve. Ability to anticipate problems, propose improvements and persevere to ensure they are implemented. Willingness to take on and carry out tasks.
- CT11 – Planning and time management: Ability to set objectives and choose the right means to fulfil them through efficient use of time and resources.
- CT14 - Innovation/Creativity: Ability to propose and invent new, original solutions that contribute towards improving problem situations, including ideas from other contexts.
- CT16 - Decision making: Ability to choose between different options or methods to effectively solve varied situations or problems.
- CT7 - Awareness of ethical values: Ability to think and act in line with universal principles based on the value of a person, contributing to their development and involving commitment to certain social values.

Specific Skills:

- CE11 - Learn about the pathophysiology of disease and identify manifestations that appear throughout the process. Be aware of the relevant medical and surgical treatments, predominantly from a physiotherapeutic and orthopaedic approach.
- CE22 - Determine the status of a patient/user through a physiotherapy care assessment, planning the intervention measures to be taken and evaluating their effectiveness, in a cooperative work environment with other health sciences professionals.

Learning Outcomes

- Understanding of the key concepts related to medical pathology.
- Understanding of the core aspects of pharmacology.
- Ability to use theoretical knowledge for resolving practical case studies.
- Ability to recognise important information, find and correlate relevant data related to the core aspects of the subject matter.

The following table shows the relationship between the competencies developed during the course and the learning outcomes pursued:

SKILLS	LEARNING OUTCOMES
CB1, CB2, CB3, CB4, CB5. CG7, CG8. CT11, CT16, CT7. CE11, CE22.	RA1
CB1, CB2, CB3, CB4, CB5. CG7, CG8. CT11, CT16, CT7. CE11, CE22.	RA2
CB3, CB4. CG7, CG8. CT10, CT11, CT14, CT16, CT7. CE11, CE22.	RA3
CB3, CB4. CG7, CG8. CT10, CT11, CT14, CT16, CT7. CE11, CE22.	RA4

4. CONTENTS

Throughout the course of Medical Pathology and Pharmacology II, the following topics will be addressed:

Medical Pathology:

- Basic foundations of health and disease.
- General Pathophysiology and Clinical Semiology.
- Clinical manifestations, diagnosis, and treatment of diseases of various organs and systems.
- Major geriatric syndromes.

Pharmacology:

- General concepts of pharmacology.
- Anti-inflammatories and modulators of rheumatic diseases.
- Pharmacology of other organs and systems.

To this end, the course of Medical Pathology and Pharmacology II is structured as follows:

UNIT 1: PATHOLOGY AND PHARMACOTHERAPY OF CARDIOVASCULAR ALTERATIONS

1. Topic 1: Cardiovascular alterations.
2. Topic 2: Pathology and pharmacotherapy of disorders of heart rate and rhythm.
3. Topic 3: Pathology and pharmacotherapy of atherogenesis and coronary disorders.
4. Topic 4: Pathology and pharmacotherapy of blood pressure alterations and circulatory insufficiency.

UNIT 2: PATHOLOGY AND PHARMACOTHERAPY OF RENAL ALTERATIONS

5. Topic 5: Pathology and pharmacotherapy of renal disorders.
6. Topic 6: Pathology and pharmacotherapy of acid-base balance alterations.

UNIT 3: PATHOLOGY AND PHARMACOTHERAPY OF RESPIRATORY SYSTEM DISORDERS

7. Topic 7: Respiratory system. Pathophysiology and Clinical Semiology.
8. Topic 8: Obstructive pulmonary pathophysiology: Asthma and COPD.
9. Topic 9: Restrictive pulmonary pathophysiology.
10. Topic 10: Infectious and allergic pulmonary alterations.

UNIT 4: PATHOLOGY AND PHARMACOTHERAPY OF BONE ALTERATIONS

11. Topic 11: The bone. Pathology and pharmacotherapy of osteoarthritis and rheumatoid arthritis.
12. Topic 12: Pathology and pharmacotherapy of osteoporosis.

UNIT 5: PATHOLOGY AND PHARMACOTHERAPY OF DIGESTIVE ALTERATIONS

13. Topic 13: Digestive system. Pathology and pharmacotherapy of secretion alterations; intestinal disorders and other digestive disorders.
14. Topic 14: Pathology and pharmacotherapy of liver and extrahepatic bile duct alterations.
15. Topic 15: Pathology and pharmacotherapy of exocrine and endocrine pancreas alterations.

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Master Class
- Cooperative Learning
- Case method
- Autonomous learning

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Campus-based mode:

Learning activity	Number of hours
Tutorials	15 h
Online seminars	10 h
Knowledge tests	2 h
Oral presentations	4 h
Case study analysis	8 h
Master Class	44 h
Problem-solving scenarios	12 h
Self learning	50 h
Scientific papers	5 h
TOTAL	150 h

7. ASSESSMENT

The assessment systems, plus their weighting in the final grade for the subject area, are as follows:

On Campus:

Assessment system	WEIGHT
Knowledge Test and Case/Problem. Digital Experience	45% 10%
Oral Presentation and Group Work.	25%
Learning Portfolio. Workshops	20%

On the Virtual Campus, when you open the subject area, you can see all the details of your assessable tasks and the deadlines and assessment procedures for each task.

8. BIBLIOGRAPHY

The works of reference for following up this subject area are:

Pathology

- Arellano, J. L. (2019). Manual de Patología General. Sisinio De Castro. Elsevier.
- J. L. Jameson, A. S. Fauci, D. L. Kasper, S. L. Hauser, D L. Longo y J. Loscalzo (2012). Harrison: Principios de Medicina Interna (20ª ed), México, McGraw-Hill/Interamericana.
- Porth C (2008). Fisiopatología. Salud-enfermedad: un enfoque conceptual (7ª ed), Editorial Médica Panamericana.
- Tortora G (2013) Principios de anatomía y fisiología (13a Ed) Panamericana. 2013
- Pastrana Delgado J. (2013). Fisiopatología y Patología General Básicas para ciencias de la salud (1a ed), Elsevier.

Pharmacology

- Betes, Duran, Mestres, Nogues (2008). Farmacología para fisioterapeutas. Editorial Médica Panamericana. (Optativo Edición 2017)
- Flórez J (2008). Farmacología Humana (6ª ed), Masson. (Optativo Edición 2014).
- Goodman y Gilman's (2012). Las Bases Farmacológicas de la Terapéutica. Editorial McGraw-Hill Interamericana. (Optativo Edición 2018).