

**Pathological Clinical Concepts Diagnosis  
Techniques**

Code: 103015  
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	FB	2	1

### Contact

Name: Roser Belmonte Martinez  
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### Use of Languages

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

### Teachers

Miguel Angel Rubio Perez

### External teachers

Ferran Escalada Recto  
Marta Tejero Sanchez

### Prerequisites

Students taking this subject should know basics of Biochemistry, Physiology and Human Anatomy in order to interpret the concepts of diseases that are susceptible to physiotherapy treatment.

### Objectives and Contextualisation

The basic objectives are that students are able:

- To understand the most prevalent physiological and functional changes of the organs and systems in order to understand the basic concepts of medical and surgical diseases.
- To recognize and interpret the symptoms and the alarm signs derived from illnesses in the field of knowledge involved in physiotherapy.

### Competences

- Analyse and synthesise.
- Develop independent learning strategies
- Display knowledge of the morphology, physiology, pathology and conduct of both healthy and sick people, in the natural and social environment.

## Learning Outcomes

1. Analyse and synthesise.
2. Develop independent learning strategies
3. Explain the physiopathology of the principal diseases that can be treated by physiotherapy and identify the symptoms that appear during the process.

## Content

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### UNIT 1

General Pathology, concept and relationship with other disciplines. The sick human being. Concepts of health and illness. Concepts of nosology, nosothagia, pathocronia, etiology, pathogenesis, semiology, physiopathology, semiotics.

### UNIT 2

The living, mechanical, physical and chemical agents as a cause of illness. Endogenous factors of the disease: general principles of genetics. Types of genetic diseases. Constitution and illness. Immunological mechanisms of the disease.

### UNIT 3

Cell injury and cell death. Aging: physiological and pathological aspects.

### UNIT 4

General symptoms. Pathophysiology of pain, definition, type and general semiology. Fever: concept, causes and mechanisms. Febrile syndrome. Inflammation: concept, causes, types, mediators and clinical manifestations. Edema: concept, pathogenesis and semiology.

### UNIT 5

Anatomical and functional aspects of the respiratory system. Ventilation control mechanisms. Ventilation disorders. Disorders of obstructive and restrictive ventilation. Diffusion disorders. Alveolar-capillary exchange disorders. Perfusion disorders and their relationship of ventilation / perfusion.

### UNIT 6

Hypoxia. Types of hypoxia. Hypoxia compensation mechanisms. Consequences of hypoxia. Concept and physiopathology of cyanosis. Types of cyanosis: central or arterial and peripheral or venous. Hypercapnia: concept, mechanisms, causes and consequences.

### UNIT 7

Pathophysiology of dyspnea and respiratory rhythm disorders. Concept, evaluation and mechanisms of dyspnea. Dyspnea more frequent causes and clinical implications.

### UNIT 8

Main symptoms of the respiratory system pathology. Mechanisms and causes, semiology meaning of cough, sneeze, expectoration and hemoptysis. Thoracic pain. Clubbing and asterixi.

### UNIT 9

Pathophysiology of pulmonary circulation. Thromboembolism and pulmonary infarction. Pulmonary hypertension: concept, mechanisms, causes and consequences. Pulmonary edema: concept, mechanisms, causes and consequences.

#### UNIT 10

Respiratory system syndromes. Respiratory insufficiency: concept and pathophysiologic classification. Respiratory insufficiency with and without hypercapnia. Etiopathogenic classification.

#### UNIT 11

Pathophysiology of main pulmonary syndromes: emphysema, atelectasis, condensation, fibrosis and cavitation. Aerial hyperactivity syndrome. Bronchitis. Bronchial asthma. Chronic obstructive pulmonary disease (COPD).

#### UNIT 12

Physical examination of the respiratory system. Other diagnostic procedures: radiology, and pulmonary function tests.

#### UNIT 13

Anatomical and functional basis of the cardiovascular system. The heart cycle. Heart output: influential factors. Mechanisms of compensation for heart failure: Hypertrophy. Tachycardia Increased contractility.

#### UNIT 14

Pathophysiology of cardiac rhythm and heart rate disorders. Mechanisms and causes of arrhythmias. Pathophysiology of blood pressure. Hypertension: mechanisms, causes and consequences. Hypotension: mechanisms, causes and consequences.

#### UNIT 15

Chronic widespread circulatory insufficiency syndrome: congestive heart failure. Acute generalized circulatory insufficiency syndrome: shock and syncope.

#### UNIT 16

Localized circulatory insufficiency syndrome: coronary insufficiency. Circulatory insufficiency of limbs.

#### UNIT 17

Physical examination of the circulatory system. Diagnostic tests: electrocardiography, echocardiography, cardiopulmonary exercise testing.

#### UNIT 18

Anatomic and functional basis of the nervous system. Pathophysiology of the cerebrospinal fluid. Meningeal syndrome. Endocraneal hypertension syndrome.

#### UNIT 19

Pathophysiology of consciousness. The sleep. The coma. Pathophysiology of the vegetative nervous System.

#### UNIT 20

Pathophysiology of the peripheral nervous system. Main disorders of the peripheral nervous system.

#### UNIT 21

Pathophysiology of the neuromuscular junction. Muscle and neuromuscular junction disorders. Signs and symptoms of muscular pathology: weakness, fatigue, muscle atrophy, sarcopenia. Myasthenia and myopathy syndromes.

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#### UNIT 22

General pathology of neoplasms. Carcinogenesis and neoplasm invasion. Cancer syndrome Paraneoplastic syndrome

#### UNIT 23

Main cancer types: breast, prostate, colon, lung.

#### UNIT 24

Urinary semiology: dysuria, polaquiuria, urinary retention. Pathophysiology of the urinary tract.

#### UNIT 25

Anatomical and functional basis of urinary continence. Pathophysiology of urinary incontinence. Clinical classification and evaluation of urinary incontinence. Child urinary incontinence: enuresis.

#### UNIT 26

Pathophysiology of red blood cells (erythrocytes). Anemic syndrome and polycythemic syndrome.

#### UNIT 27

Pathophysiology of white blood cells (leukocytes) and lymphocytes. Leukemia Myeloproliferative syndromes.

#### UNIT 28

Pathophysiology of hemostasis. Hemorrhagic diathesis. Thrombotic diathesis.

#### UNIT 29

Anatomic and functional basis of the digestive system. General pathophysiology of digestive motility, digestion and absorption of the digestive tract. Diarrhea. Constipation.

#### UNIT 30

Main symptoms of the digestive system: pain, dysphagia, nail biting, heartburn, ptyalism, sialorrhea, vomiting, regurgitation. Hematemesis and melena. Gastrointestinal bleeding.

#### UNIT 31

Hepatocellular failure syndrome. Portal hypertension syndrome.

#### UNIT 32

Jaundice and cholestasis. Pathophysiology of the extrahepatic bile duct and pancreas. Physical examination of the digestive system. Diagnostic tests.

#### UNIT 33

Pathophysiology of the endocrine system. Pathophysiology of the hypothalamus pituitary axis. Pathophysiology of growth and development.

#### UNIT 34

Physiopathology of glucide metabolism. Diabetes.

#### UNIT 35

Complications of diabetes.

#### UNIT 36

Pathophysiology of lipid metabolism. Dyslipidemia. Pathophysiology of the metabolism of proteins. Obesity and malnutrition

#### UNIT 37

Pathophysiology of bone tissue. Congenital bone diseases. Acquired bone diseases: nutrition, metabolism, osteoporosis, Paget's disease.

#### UNIT 38

Pathophysiology of the joints. Inflammatory and degenerative disorders: arthritis and arthrosis.

#### UNIT 39

Complementary explorations of the locomotive system: radiology, computerized tomography, magnetic resonance, ultrasound.

### Methodology

The subject contains theory, classroom practices and self study.

### Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
CLASSROOM PRACTICES	6	0.24	1, 2, 3
THEORY	39	1.56	1, 2, 3
Type: Autonomous			
PREPARATION OF WRITTEN WORKS	30	1.2	1, 2, 3
READING ARTICLES / REPORTS OF INTEREST	13	0.52	1, 2, 3
SELF-STUDY	60	2.4	1, 2, 3

### Assessment

Tipology	Duration	Description of the evaluation tests	Evaluation criteria	% of final Grade
Written exam 1	30 minutes		Each question correctly answered adds 1 point. Each question erroneously answered subtracts 0.33 points.	40%

		Objective test of item selection. Test of 25 questions, with 4 options per question, of which 1 is correct.	Unanswered questions will not score.  If the student does not present the test, it will be considered non-evaluable.  Minimum grade to pass: 50% of the possible score.	
Written exam 2	30 minutes	Objective test of item selection. Test of 25 questions, with 4 options per question, of which 1 is correct.	Each question correctly answered adds 1 point. Each question erroneously answered subtracts 0.33 points. Unanswered questions will not score.  If the student does not present the test, it will be considered non-evaluable.  Minimum grade to pass: 50% of the possible score.	40%
Case studies and problem solving		Case studies and problem solving that the students will answer in writing and they will work in classroom practices.		15%
Attendance and active participation		From attendance and attitude during classroom theory and practices.	Attendance	5%
Recovery written exam	60 minutes	For students who have not passed exams 1 and 2.  Objective test of item selection. Test of 50 questions, with 4 options per question, of which 1 is correct.	Each question correctly answered adds 1 point. Each question erroneously answered subtracts 0.33 points. Unanswered questions will not score.  If the student does not present the test, it will be considered non-evaluable.	80%
Final grade		5 % Attendance and participation  15% Case studies and problem solving  40% Exam 1  40% Exam 2	It is essential to pass exams 1 and 2, or the recovery exam to pass the subject.  Minimum grade to pass the subject: 50% of the score possible.	

\*The dates of the evaluations and exams will be according to calendar

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
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Written evaluation 1: Objective tests multiple choice questions	40%	0.5	0.02	1, 2, 3
Attendance and active participation in classroom practices	5%	0	0	1
Evaluation through case studies and problem solving	15%	1	0.04	1, 2, 3
Written evaluation 2: Objective tests multiple choice questions	40%	0.5	0.02	1, 2, 3

## Bibliography

[Laso Guzman, F. J., "Patologia general introduccion a la medicina clinica", Barcelona Elsevier Masson 2015](#)

[Castro del Pozo, S. de, "Manual de patologia general etiologia, fisiopatologia, semiologia, sindromes", Barcelona \[etc.\] Elsevier Masson 2013](#)

Robbins Basic Pathology, 8th Edition By Vinay Kumar, MBBS, MD, FRCPATH, Abul K. Abbas, MBBS, Nelson Fausto, MD and Richard Mitchell, MD, PhD

[Harrison, Tinsley Randolph 1900- / Fauci, Anthony S., "Harrison's principles of internal medicine", New York \[etc.\] McGraw-Hill Medical \[2015\]](#)

[Farreras Valentí, Pedro / Domarus, A. von / Rozman, Ciril, "Medicina interna", Madrid \[etc.\] Elsevier 2012](#)