

 escoles universitàries <b>gimbernat</b> i Tomàs Cerdà <small>ADSCRITA A LA UPB</small>	<b>PHYSIOTHERAPY (EHEA DEGREE)</b> <b>COURSE CATALOGUE</b>	<b>EUIF GIMBERNAT</b> Fisioteràpia
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## GENERAL INFORMATION

Course unit		<b>PHYSIOLOGY III</b>			
ECTS	6.00	Type of course unit	Basic education	Academic year	2017-2018
Delivered		<b>SEMESTRALLY</b>		Term / year	<b>1 / 2</b>
Lecturers		<b>Mr Pere Mestre Roca</b> <b>Dr. Ishar Dalmau</b> <b>Ms Gemma Tribó Alcobé</b>			
Language of instruction		<b>CATALAN / SPANISH</b>			
Admission requirements		<b>ANATOMY - II</b>			

## THE COURSE UNIT WITHIN THE CURRICULUM

### Course contents: Physiology

1. This course unit aims to consolidate the functional bases of the central nervous system and of the physiological and/or physiopathological changes associated with tissue lesions and adaptation, cell proliferation and differentiation, immune responses, inflammation, infection and pain, adaptation to stress, body temperature regulation, asepsis, ageing, and pregnancy.
2. The knowledge of neurophysiology and of the physiological and physiopathological changes in the human body is essential within the degree since it provides a solid base for the clinical field in the profession.

## COMPETENCES

Specific competences	<b>E1.</b> Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.
Transversal competences	<b>T1.</b> Analyse and summarise.  <b>T5.</b> Problem solving.
Generic competences	<b>G2.</b> Develop strategies of autonomous learning.

## LEARNING OBJECTIVES

**E1.** Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.

### Learning outcomes:

**E1.7.** Identify the physiological and structural changes that can occur due to a lesion and/or disease in the different tracts and systems.

**Learning objectives:**

- E1.7.1.** Enumerate the main factors that characterise the physiopathology of the clinical entities studied.
- E1.7.2.** Explain the processes and define the physiopathological concepts included in the contents of the unit.
- E1.7.3.** Integrate physiopathological knowledge into the most representative clinical histories.
- E1.7.4.** Apply physiopathological concepts to the evidence-based medical practice.

**E1.9.** Explain the functioning of the human body in good health in order to have a solid basis to understand the processes that lead to disease.

**Learning objectives:**

- E1.9.1.** Describe the main functional characteristics of the central nervous system in good health and deduce the possible alterations and their consequences.
- E1.9.2.** Explain the specific neurophysiological mechanisms that may explain how and why the studied processes take place.
- E1.9.3.** Integrate the theoretical knowledge acquired into some of the most representative clinical examinations.
- E1.9.4.** Put the neurophysiological concepts into evidence-based medical practice.

**T1. Analyse and summarise**

**Learning objectives:**

- T1.1.** Find the main ideas in a text or presentation.
- T1.2.** Draw conclusions from a scientific article.

**T5. Problem solving**

**Learning objectives:**

- T5.1.** Decide the most appropriate intervention in the most common out-of-hospital medical emergencies.

**Generic competence:**

**G2. Develop strategies of autonomous learning.**

This is a competence that is developed by working competence "T1. Analyse and summarise" and "T5. Problem solving".

## CONTINGUTS

### **NEUROPHYSIOLOGY**

- 1. Functional structure of the nervous system**
- 2. Neuronal electrical activity**
- 3. Synaptic transmission**
- 4. Neuromuscular transmission**
- 5. Neuronal circuits and reflex activity**
- 6. Sensory information processing**
- 7. Taste and smell**
- 8. Sight**
- 9. Hearing**
- 10. Sense of balance**
- 11. Somatic sensitivity**
- 12. Control of posture and movement**

### **NEUROPHYSIOLOGY PRACTICALS**

#### **Reflex activity**

After assimilating the functional bases of monosynaptic and polysynaptic neural circuits, as well as their differential characteristics, the student will be able to integrate this knowledge into the physical examination of reflex activity, by observing the effects of the processes previously studied from a theoretical perspective. The student will practice different manoeuvres to induce physiological variations in the response of some easily-examined reflexes, and then the student will have to explain the neurophysiological correlates of the results obtained. The student will also be asked about the foreseeable results of the examination in relation to a given pathology. This practical will be held in two two-hour sessions.

#### **Reflex activity I**

1. Monosynaptic reflex arcs
2. Examination of myotatic reflexes and identification of the neural circuits involved
3. Physiological variations in the responses to the patellar reflex
4. Dialogue/debate over the neurophysiological correlates of the results obtained

#### **Reflex activity II**

1. Polysynaptic reflex arcs
2. Examination of polysynaptic somatic reflexes and identification of the neural circuits involved
3. Examination of visceral reflexes and identification of the neural circuits involved
4. Proposal for a clinical examination

#### **Functional examination of hearing**

After assimilating the physics of sound stimuli and how this stimulus reaches the sensory receptors in the organ of Corti, the student will assess their classmates' hearing capacity by means of acumetry tests. In the last thirty minutes the students will work in groups to discuss the results of the three acumetry tests carried out in a patient suffering from a specific type of hypoacusia. Each group will present their conclusions in public. This practical will be held in a two-hour session.

1. Physical nature of the sound stimulus
2. Air conduction testing

3. Bone conduction testing: the Weber test
4. The Rinne test
5. Proposal for a clinical examination

#### **BASICS OF PHYSIOPATHOLOGY AND PHYSIOLOGICAL CHANGES**

- 1. Tissular lesion and adaptation**
- 2. Alterations in cell growth and replication**
- 3. Immune system and immune response**
- 4. Infection**
- 5. Inflammation and pain**
- 6. Stress and adaptation**
- 7. Temperature and fever regulation**
- 8. Asepsis**
- 9. Age-related physiological changes**
- 10. Physiological changes related to pregnancy**

#### PRACTICE SESSIONS

Practice sessions consist of a theoretical explanation given by the teacher about the aim and contents of that specific session. The students will do the practical activity under the teacher's supervision.

##### **Practical 1**

##### **How to give an oral presentation**

This practical focuses on the methodology used to make an oral presentation and on formal aspects emphasising:

- The importance of communication
- The outline of a presentation
- Giving a presentation
- Verbal communication
- Non-verbal communication
- Situations to be overcome

The practical will be based on a scientific study that will be previously chosen.

##### **Practical 2**

##### **Presentation and discussion of a scientific paper**

This practical will deal with the selection and discussion of contents to be presented, and drawing conclusions. The following will be worked:

- The outline of the presentation
- Contents to be presented
- Discussing selected graphs, tables, diagrams, etc
- Power point, as a presentation tool
- Drawing conclusions from the data presented

The same scientific article used in practical 1 will be worked.

##### **Practice sessions 1 and 2 will be done in three sessions**

##### **Practical 3**

##### **First-aid basic actions**

This practical focuses on the knowledge and actions necessary in the most common out-of-hospital

emergencies:

1. Burns
2. Poisoning: Smoke, medicaments, food,...
3. Drowning
4. Electric shocks
5. Blows and injuries
6. Animal bites

The students, based on the theoretical explanation provided, will work in groups and role-play different situations based on the problems presented.

## TEACHING METHOD

### **DIRECTED ACTIVITIES**

- **Theoretical lessons** that will provide the students with the contents of the course unit. These will be presented in a systematic way so that the students can also gain a global perspective of the different concepts presented. The lessons will offer visual and computer-based support.

Estimated time: 48 hours

- **Practical lessons** where the teacher will present, either with the help of a model or with the help of audiovisual material, different techniques. The lessons will offer visual and computer-based support. The theoretical knowledge previously learnt will be put into practice, when examining the patient and carrying out a functional assessment. These lessons will also help the students get the necessary tools to make an oral presentation and to discuss scientific papers. The students will be provided with basic first-aid knowledge.

Estimated time: 4.5 hours

### **SUPERVISED ACTIVITIES**

- **Practical activity:** the students will work under the supervision of the teacher. There will be a dialogue/debate with the participants about the resolution of some questions/problems or about the practical application of theoretical concepts. When the teacher considers it necessary, the students will have to fill in a form for this practical activity so that the teacher can assess them individually.

Estimated time: 7.5 hours

### **AUTONOMOUS ACTIVITIES**

- **Information search and treatment** that will complement the teacher's explanations.

Estimated time: 15 hours

- **Autonomous work** of individual study to prepare exams, organise notes/materials; tutorials: individually or in groups.

Estimated time: 73 hours

## ASSESSMENT METHOD

- The knowledge acquired in each section the unit is divided into will be assessed through written tests, which will amount to 70% of the total mark.
- The practicals will account for 30% of the final mark. Attendance, attitude, and motivation will be taken into account.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Attendance at 100% of practical classes (justified absences will allow the student to miss up to 20% of all the practical classes).
- Get a minimum final mark of 5.

Rules concerning internal practical lessons:

Please, check the school's Rules of Internal Practical lessons.

Final evaluation period: from 08/01/2018 to 22/01/2018.

Resit examination period: from 24/01/2018 to 02/02/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

**MATERIAL/BASIC RECOMMENDED AND REQUIRED READINGS**

Books					
Author	Year	Title	City	Publisher	Description/ comment
Argente, Horacio A. Álvarez, Marcelo E.	2004	SEMILOGÍA MÉDICA: fisiopatología, semiotecnia y propedéutica: enseñanza basada en el paciente	Madrid	Médica Panamericana	1ª edició ISBN: 978- 950-06- 0072-9
Ganong, William F.	2006	FISIOLOGÍA MÉDICA	México	Manual Moderno	20ª edició ISBN: 978- 970-729- 230-7
Guyton, Arthur C. Hall, John E	2007	TRATADO DE FISIOLOGÍA MÉDICA	Madrid	Elsevier	11ª edició ISBN: 978- 84-8174- 926-7
McPhee, Stephen J. Ganong, William F.	2007	FISIOPATOLOGÍA MÉDICA: Una introducción a la medicina clínica	México	Manual Moderno	5ª edició ISBN: 978- 970-729- 245-1
Pocock, Gillian Richards, Christopher D.	2005	FISIOLOGÍA HUMANA: La base de la medicina	Barcelona	Masson	2ª edició ISBN: 978- 84-458- 1479-6
Porth, Carol Mattson	2006	FISIOPATOLOGÍA: salud-enfermedad un enfoque conceptual	Madrid	Médica Panamericana	7ª edició ISBN: 978- 84-7903- 932-5
Purves, Dale Augustine, George J. Fitzpatrick, David Hall, William C.	2006	NEUROCIENCIA	Madrid	Panamericana	3ª edició ISBN: 978- 84-7903- 989-9
Silbernagl, Stefan Despopoulos, Agamenon	2008	FISIOLOGÍA : TEXTO Y ATLAS	Madrid	Panamericana	7ª edició ISBN: 978- 84-7903- 444-3

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## GENERAL INFORMATION

Course unit		<b>HUMAN PATHOLOGY – I</b>			
ECTS	6.00	Type of course unit	Basic education	Academic year	2017-2018
Delivered		<b>SEMESTRALLY</b>		Term / year	<b>1 / 2</b>
Lecturers		Ms Montserrat Trallero i Gracia Mr Jordi Huguet Mr José Manuel Marín Dr. Mariano Yuguero			
Language of instruction		<b>CATALAN / SPANISH</b>			
Admission requirements		ANATOMY – I ANATOMY – II PHYSIOLOGY – I PHYSIOLOGY - II			

## THE COURSE UNIT WITHIN THE CURRICULUM

- Contents: Human pathology.
- This course unit aims to consolidate the bases of assessment and treatment of pathological processes that affect man from a medical, surgical, and pharmacological perspective.
- The knowledge of human pathology is basic within the degree and the profession. Identifying diseases or pathological processes allows us to evaluate and treat them. Physiotherapy is part of the treatment methods available.

## COMPETENCES

Specific competences	<b>E1.</b> Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.
Transversal competences	<b>T1.</b> Analyse and summarise.
Generic competences	<b>G2.</b> Develop strategies of autonomous learning.

## LEARNING OBJECTIVES

**E1.** Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.

**Learning outcomes:**

**E1.17.** Explain the physiopathology of the main diseases that can be treated with physiotherapy, identifying their manifestations along the pathological process.

**Learning objectives:**

**E1.17.1.** Define medical pathology and explain its role within medicine and physiotherapy.

**E1.17.2.** Define endocrine and metabolic diseases.

- E1.17.3.** Describe the physiopathology and signs of musculoskeletal pain.
- E1.17.4.** Describe the physiopathology and signs of lymphoedema.
- E1.17.5.** Describe the physiopathology and signs of the immobility syndrome.
- E1.17.6.** Define cardiorespiratory diseases.
- E1.17.7.** Describe haematological diseases.
- E1.17.8.** Identify the main symptoms and signs that require medical consultation.
- E1.17.9.** Interpret the main values in medical tests.
- E1.17.10.** Define surgical and traumatological science and explain its role within medicine.
- E1.17.11.** Describe the general traumatic entities of the skin, connective and supporting tissue.
- E1.17.12.** Describe the different stages in traumatic repair processes of the skin, connective and supporting tissue.
- E1.17.13.** Define the osseous and articular traumatic entities of the limbs.
- E1.17.14.** Describe the physiopathology and signs of burns.
- E1.17.15.** Describe the physiopathology and signs of the main osseous and articular traumatic lesions of the limbs.
- E1.17.16.** Define rheumatological science and explain its role within medicine.
- E1.17.17.** Identify the different types of joints according to their functional structure.
- E1.17.18.** Describe the structure and composition of connective and supporting tissue.
- E1.17.19.** Distinguish the different articular reaction patterns and rheumatological syndromes.
- E1.17.20** Name the different rheumatological entities and place them within their corresponding reaction patterns and syndromes.
- E1.17.21.** Describe the physiopathology and signs of the main diseases and syndromes in rheumatology.
- E1.17.22.** Relate the different signs and symptoms to the corresponding reaction patterns, diseases, and syndromes in rheumatology.
- E1.17.23.** Describe the development of a medicine and distinguish the different stages in this development.
- E1.17.24.** Explain the main concepts of pharmacokinetics and pharmacodynamics.
- E1.17.25.** Enumerate the different types of adverse reactions to medicaments and their causes.
- E1.17.26.** Describe the most common drug interactions.
- E1.17.27.** Explain the pharmacology of the central nervous system and describe the most commonly used drugs in the treatment of common diseases.
- E1.17.28.** Explain the pharmacology of pain and analgesic therapy.
- E1.17.29.** Describe the main characteristics of performance-enhancing drugs in sport.

**E1.18.** Enumerate the medico-surgical treatments, particularly their physiotherapeutic and orthopaedic aspects, given for the main diseases susceptible of physiotherapy treatment.

**Learning objectives:**

- E1.18.1.** Enumerate medical treatments for the main diseases.
- E1.18.2.** Enumerate indications and contraindications of the physiotherapy treatments for the main syndromes and diseases.
- E1.18.3.** Describe basic procedures and techniques of a surgical treatment.
- E1.18.4.** Describe current basic burn treatments.
- E1.18.5.** Describe current basic treatments of traumatic processes of bones and articulations
- E1.18.6.** Describe current specific treatments of traumatic processes of the limbs.
- E1.18.7.** Enumerate medical treatments of the main rheumatological diseases and syndromes.
- E1.18.8.** Enumerate the main surgical treatments of rheumatological diseases and syndromes.
- E1.18.9.** Enumerate indications and contraindications of the physiotherapy treatments for the main rheumatological syndromes and diseases.
- E1.18.10.** Explain the adverse effects of the different most commonly used pharmacological treatments.
- E1.18.11.** Define the bases of pharmacology and therapeutics.
- E1.18.12.** Understand the mechanisms of action, administration, and elimination of those drugs used in the treatment of the main diseases.

**T1.** Analyse and summarise.

**Learning objectives:**

- T1.1.** Interpret the patient's signs and symptoms and decide if referral to a doctor is needed.
- T1.2.** Identify basic traumatic lesions of bones and articulations in radiological tests.
- T1.3.** Summarise the signs and symptoms of traumatic patients by means of diagnostic orientations.
- T1.4.** Identify basic pharmacological interactions and the most common adverse effects in the data specifications of a given medication.

**Generic competence:**

**G2.** Develop strategies of autonomous learning.

This is a competence that is developed by working competence "T1. Analyse and summarise".

**CONTENTS**

1. MEDICAL PATHOLOGY
  - 1.1. Theory of disease and disability
  - 1.2. Overview of endocrine and metabolic signs and symptoms to refer the patient to a doctor.
  - 1.3. Systemic causes of musculoskeletal pain. Principles for patient referral
  - 1.4. Immobility syndrome
  - 1.5. Lymphoedema: signs and symptoms
  - 1.6. Haematological signs and symptoms. Principles for patient referral
  - 1.7. Cardiopulmonary signs and symptoms. Principles for patient referral
  - 1.8. Clinical interpretation of laboratory tests
2. SURGICAL AND TRAUMATOLOGICAL PATHOLOGY
  - 2.1. Surgical semiology. The value of signs, symptoms, and complementary study tests. Tissue lesions: infections, tumours, degenerative processes, and traumatisms.
  - 2.2. Types of traumatisms: open, closed, depending on the causal agent, implying one or several tissues. Contusions, skin injuries. Bases of surgical treatment. Tissue-oriented treatment. Surgical operations.
  - 2.3. Burns, pathological changes, and clinical manifestations. Burn treatment. Introduction to plastic surgery.
  - 2.4. Concept of fracture. Types of fractures. Open, closed, articular, non-articular, pathological. Bone repair, fracture callus. Polytraumatisms.
  - 2.5. Fracture complications, pseudoarthrosis and compartment syndrome. Basics of fracture treatment. Reduction, stabilization, and rehabilitation.
  - 2.6. Upper limb fractures. Scapulohumeral luxation.
  - 2.7. Lower limb fractures. Meniscal and ligament lesions of the knee.
  - 2.8. Arthroplasty. Indications. Types. Arthroplasty stability and complications. Upper limb arthroplasty. Lower limb, hip and knee arthroplasty.
3. RHEUMATOLOGICAL PATHOLOGIES
  - 3.1. Introduction
  - 3.2. Degenerative pathologies of the limbs
  - 3.3. Degenerative pathologies of the spine
  - 3.4. Extra-articular or soft tissue pathologies
  - 3.5. Bone pathology
  - 3.6. Inflammatory rheumatisms
  - 3.7. Microcrystal deposit arthropathies
  - 3.8. Arthritis related to infectious processes
  - 3.9. Arthritis in the course of other diseases

**TEACHING METHOD**

**DIRECTED ACTIVITIES**

- Theoretical lessons that will provide the student with the theoretical bases on which the different medical, surgical, and pharmacological actions in the diagnostic process and treatment of human pathology are based. The lessons will offer visual and computer-based support.  
Estimated time: 46,55 hours

### SUPERVISED ACTIVITIES

#### **Medical pathology**

There will be two 2.5-hour sessions in small groups:

- In the first session we will work on a clinical case. The students will have to identify the patient's signs and symptoms and think about the appropriate physiotherapy goals.
- In the second session we will work on a topic previously proposed that will have been developed along the course unit.

Estimated time: 5 hours

#### **Surgical and traumatological pathology**

Tutorials in small groups about clinical cases of traumatic lesions of big articulations, organised into:

1. presentation by the teacher
2. paper discussion and authorisation
3. paper discussion and authorisation
4. presentation and discussion
5. conclusion and evaluation

The papers will be part of the student's practical assessment.

Estimated time: 5 hours

#### **Pharmacology**

There will be two 2.5-hour sessions:

- In the first one, the bases and guidelines on the group paper will be established.
- In the second session, there will be a general overview of the main theoretical concepts and some of them will be expanded in order to consolidate the knowledge.

Estimated time: 5 hours

### AUTONOMOUS ACTIVITIES

- Information search and treatment and paper writing:

#### **Medical pathology**

The students will work in groups and develop a topic of medical pathology. There will be a tutorial to monitor the progress of the paper.

#### **Traumatology**

2 papers on some specific contents of the course unit before the exams. The papers will be done in group or individually, presented individually and corrected at random.

1 group paper on the tutorial process, presented in group.

#### **Pharmacology**

The pharmacology paper will be about a previously selected drug. Taking the information available in the data specifications of the Agencia Espanyola del Medicament and with appropriate bibliography the paper will include:

- The pharmacokinetic and pharmacodynamic parameters of the drug
- Its interactions
- Its most common adverse effects

Estimated time: 30 hours

- **Autonomous work** of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.

Estimated time: 56.25 hours

## ASSESSMENT METHOD

The assessment method will include:

- The knowledge acquired in each section the unit is divided into will be assessed through written tests, which will amount to 60% of the final mark.
- The papers will account for the remaining 40%.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Attendance at 100% of practical classes (justified absences will allow the student to miss up to 20% of all the practical classes).
- Get a minimum final mark of 5.

Rules concerning internal practical lessons:

Please, check the school's Rules of Internal Practical lessons.

Final evaluation period: from 08/01/2018 to 22/01/2018.

Resit examination period: from 24/01/2018 to 02/02/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

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MATERIAL / BASIC RECOMMENDED AND REQUIRED READINGS					
Books					
<b>MEDICAL PATHOLOGY</b>					
Author	Year	Title	City	Publisher	Description/comment
De Castro del Pozo,S	2000	Manual de patología general	Barcelona	Masson SA	
C.C.Goodman T.K.Zinder	2006	Patología médica para fisioterapeutas	Aravaca	Interamericana	
James T.S Meadows,BScPT	2000	Diagnóstico diferencial en fisioterapia	Madrid	Interamericana	
<b>SURGICAL AND TRAUMATOLOGICAL PATHOLOGY</b>					
Author	Year	Title	City	Publisher	Description/comment
Heim, U. i Baltensweiler, J	1998	Guía de Traumatología	Stuttgart	Thieme	
Brunicardi, F. Charles	2006	Swartz. Principios de Cirugía. Vol 1	Mexico	McGrawHill.	
McRae, R	2000	Ortopedia y fracturas. Exploración y tratamiento		Marbán, SL	
Greene, W. B	2001	Essentials. American Academy of Orthopaedic Surgeons. Bases para el tratamiento de las afecciones musculoesqueléticas	Argentina	: Panamericana	
Hoppenfeld, S. i Murthy, V.L.	2002	Tratamiento y rehabilitación de las fracturas.	Madrid	Marban, SL	
Bucholz, R. i Heckman, J. D.	2003	Fracturas en el adulto, Rockwood & Green's. 5ª edició.	Madrid	Marban, SL.	
Porter, S	2008	Tidy's Physiotherapy. 14a edició	Xina	Elsevier	
<b>PHARMACOLOGY</b>					
Author	Year	Title	City	Publisher	Description/comment
Florez J, Armijo JA, Mediavilla	2008	Farmacología Humana	Barcelona	Elsevier Masson	
Page, Curtis, Sutter, Walker, Hoffman	1998	Farmacología Integrada	Madrid	Harcourt	
Goodman & Gilman	2003	Las bases farmacológicas de la terapéutica	Mexico	Mc Graw-Hill Interamericana	
Betés, Duran, Mestres, Nogués,	2008	Farmacología para Fisioterapeutas	Madrid	Panamericana	
<b>RHEUMATOLOGICAL PATHOLOGY</b>					
Author	Year	Title	City	Publisher	Description/comment
Farreras Rozman	2008	Medicina Interna	Madrid	Elsevier	
Harrison	2008	Principios de medicina interna	México	Mc Graw Hill- Interamericana	

Web pages			
The Journal of Bone and Joint Surgery	Revista de mes prestigi de trauma i ortopèdia	<a href="http://www.ejbis.org/">http://www.ejbis.org/</a>	
Aofoundation	Pagina de trauma. Classificació i procediments. Vídeos	<a href="http://www.aofoundation.org">http://www.aofoundation.org</a>	
GIMBERTRAUMA	Pagina de la classe	<a href="http://gimbertrauma.blogspot.com/">http://gimbertrauma.blogspot.com/</a>	
Orthopedic Surgery and Sports Medicine at the University of Washington	Ortopedia de l'adult	<a href="http://www.orthop.washington.edu/">http://www.orthop.washington.edu/</a>	
Sociedad Española de Reumatología	Lloc oficial de la societat. Conté actualitzacions i criteris en reumatologia	<a href="http://www.ser.es/">http://www.ser.es/</a>	
Agencia española de medicamentos y productos		<a href="http://www.aemps.es">http://www.aemps.es</a>	

sanitarios			
European Medicines Agency		<a href="http://www.emea.europa.es">www.emea.europa.es</a>	
US Food and Drug Administration		<a href="http://www.accessdata.fda.gov">www.accessdata.fda.gov</a>	

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## GENERAL INFORMATION

Course unit		<b>PHYSIOTHERAPY ASSESSMENT OF THE LOCOMOTOR SYSTEM</b>				
ECTS	6.00	Type of subject	Compulsory	Academic year	2017-2018	
Delivered		<b>SEMESTRALLY</b>		Term /year	1 / 2	
Lecturers		<b>Dr Enric Sirvent</b> <b>Mr Vicenç Punçola</b> <b>Mr Pedro Rubio</b> <b>Mr Ricard Montané</b> <b>Mr Richard Maast</b> <b>Mr Francesc Novell</b>				
Language of instruction		<b>CATALAN / SPANISH</b>				
Admission requirements						

## THE COURSE UNIT WITHIN THE CURRICULUM

- Course contents: Physiotherapy of the locomotor system.
- This course aims to consolidate the bases of the assessment of the locomotor system based on the elaboration of the physiotherapy diagnostic procedure and on functional diagnostic hypotheses.
- The knowledge of the assessment of the locomotor system is fundamental within the degree and the profession since the diagnostic procedure constitutes the base on which treatment goals are organised. On the other hand, physiotherapy diagnostic registers are indispensable, under the current provisions of law, for the physiotherapy practice.

## COMPETENCES

Specific competences	<p><b>E1.</b> Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.</p> <p><b>E5.</b> Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.</p> <p><b>E7.</b> Assess the patient's functional state, taking into account physical, psychological, and social aspects.</p> <p><b>E8.</b> Determine the physiotherapy diagnosis according to established norms and using internationally recognised validation instruments.</p>
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Transversal competences	<p><b>T1.</b> Analyse and summarize.</p> <p><b>T3.</b> Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing.</p> <p><b>T5.</b> Problem solving.</p> <p><b>T9.</b> Develop critical thinking.</p>
Generic competences	<p><b>G1.</b> Develop critical thinking and reasoning and know how to effectively express it both in the student's own languages and in a third language.</p>

## LEARNING OBJECTIVES

**E1.** Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.

**Learning outcomes:**

**E1.21.** Describe and analyse human movement.

**Learning objectives:**

**E1.21.1.** Describe and link body statics with body dynamics.

**E1.21.2.** Recognise the alterations of articular movement and connect them with bone alterations and deformities of the upper and lower limb.

**E1.21.3.** Describe muscle chains.

**E1.21.4.** Describe the physics, type of test, and indications of conventional X-rays, CAT, Ultrasound scans, MIR, and nuclear medicine.

**E1.21.5.** Describe the most common diagnostic imaging techniques used in the study of the locomotor system.

**E1.21.6.** Recognise the main alterations in diagnostic imaging of pathologies of the locomotor system.

**E5.** Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, extra-hospital, primary and community health care environments.

**Learning outcomes:**

**E5.1.** Solve clinical cases susceptible of physiotherapy treatment in the field of disorders of the musculoskeletal system.

**Learning objectives:**

**E5.1.1.** Identify the local lesions and malfunctions in the upper and lower limb

**E5.1.2.** Relate local malfunctions of the locomotor system to the possibility of global body alterations.

**E7.** Assess the patient's functional state, taking into account physical, psychological, and social aspects.

**Learning outcomes:**

**E7.4.** Describe and apply adequate physiotherapy assessment procedures in order to determine the level of affection of the locomotor system and its possible functional consequences.

**Learning objectives:**

**E7.4.1.** Analyse the position of three regions (cephalic, thoracic, and abdominal) in the three planes.

**E7.4.2.** Recognise postural alterations of the locomotor system.

**E7.4.3.** Determine muscular and articular impairments of the locomotor system using visual observation and end feel.

**E8.** Determine the physiotherapy diagnosis according to established norms and using internationally recognised validation instruments.

**Learning outcomes:**

**E8.3.** Establish physiotherapy diagnostic hypotheses through clinical cases of impairments of the musculoskeletal system.

**Learning objectives:**

**E8.3.1.** Identify local, regional, or global physical alterations and describe the impairments in the capacity of the locomotor system to formulate diagnostic hypotheses

**E8.3.2.** Use validated measuring instruments: goniometer, plumb-bob, and dynamometer.

**E8.3.3.** Relate the use of functional scales and consensual, internationally validated pain scales to the functional impairments of every individual and their impact on the locomotor system.

**E8.3.4.** Identify gait impairment and in specific activities of the upper limbs to formulate functional diagnostic hypotheses.

**T1.** Analyse and summarize.

**Learning objectives:**

**T1.1.** Follow an organised approach and a logical sequence to examine the locomotor system.

**T1.2.** Interrelate different pathological findings, resulting from an examination, in order to determine if they are the cause or consequence of functional alterations, discriminating significant ones.

**T1.3.** Write and present a report based on the local and postural analysis of the locomotor system.

**T5.** Problem solving.

**Learning objectives:**

**T5.1.** Formulate explanatory hypotheses that allow us to connect three parameters: impairments in structure and function; activity limitations and participation restrictions; and environmental contextual factors.

**T9.** Develop critical thinking.

**Learning objectives:**

**T9.1.** Qualify the information obtained from texts that analyse the locomotor system, identifying contradictory or insufficient aspects.

**T9.2.** Recognise those aspects described in evidence-based texts that are not relevant for a given case (unitary) when analysing impairments of the locomotor system.

**T9.3.** Revise, in the bibliography, those questions that may bring about critical elements in the practical physiotherapy examination of the locomotor system.

**Generic competence:**

**G1.** Develop critical thinking and reasoning and know how to effectively express it both in the student's own languages and in a third language.

**Learning objectives:**

**G1.1.** Write a diagnostic report on some clinical cases of impairments of the locomotor system.

**G1.2.** Publicly present a diagnostic report based on the analysis of local, regional, global, and radiological data on impairments of the locomotor system.

## COURSE CONTENTS

### 1. PHYSIOTHERAPY DIAGNOSIS

- 1.1. General aspects of a physiotherapy diagnosis
- 1.2. Examination of the musculoskeletal system
- 1.3. Physiotherapy diagnosis of pain in the locomotor system

### 2. ASSESSMENT OF THE LOCOMOTOR SYSTEM

- 2.1. UPPER LIMBS
- 2.2. LOWER LIMBS
- 2.3. STATICS – MUSCLE CHAINS

### 3. DIAGNOSTIC IMAGING

- 3.1. Conventional X-rays. Concepts and physical bases.
- 3.2. CAT. Concepts and physical bases.
- 3.3. Ultrasounds. Concepts and physical bases.
- 3.4. MIR. Concepts and physical bases.
- 3.5. Nuclear medicine. Concepts and indications.
- 3.6. Osteoarticular system

## TEACHING METHOD

### DIRECTED ACTIVITIES

- **Theoretical lessons** that will provide the student with the bases of a physiotherapy diagnostic process and radiological alterations in the impairments of the locomotor system. The lessons will offer visual and computer-based support.

Estimated time: 60 hours

- **Presentation and resolution of clinical cases.** Different clinical cases will be presented on which the student will make a physiotherapy diagnostic report and give a case presentation on pathologies affecting the locomotor system.

Estimated time: 6 hours

### AUTONOMOUS ACTIVITIES

- **Information search and treatment and paper writing.** The students will work in small groups following a list previously made. Based on some clinical cases presented by the teacher, which deal with impairments of the locomotor system and their impact on human posture, they will have to find the recommended bibliography of reference to write three papers: one on a case affecting the upper limb, one on a case affecting the lower limb, and one on posture alterations from the perspective of muscle chains. According to the information they get, they will write a report and make a public presentation. When writing the report, two aspects will be emphasised: a) qualify the information stressing those questions that may bring critical elements in the physiotherapy action (in reference to the general objectives) derived from the established hypothesis; b) the observations related to pain, local mobility, posture alterations, and abilities and dysfunctions derived from that specific case. The methodology for the papers will be indicated by the teacher in each of the parts.

Estimated time: 20 hours

- **Autonomous work** of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.

Estimated time: 61.5 hours

## ASSESSMENT METHOD

The assessment method will include:

- The **knowledge acquired** in each section the unit is divided into will be assessed through written tests, which will amount to 70% of the total mark.
- **The clinical cases presented** will amount to 30%. The papers will be assessed according to the following criteria:
  - A) In a session with all the students a paper, from the three each group of 10 students will have prepared, will be chosen at random, which will be publicly presented.
  - B) The paper will be presented within the time given. The teachers of the unit (upper limbs, lower limbs, and statics and muscle chains) will attend the presentation.
  - C) The mark for the paper will be based on: 1) the marks given internally to each individual participant in the group by each member; 2) the average mark of the evaluation form filled in by the other groups (9). In the form the following items will be quantified using a 1-to-5 scale: *introduction, case presentation, local measures, global alterations, segments and body regions, proposed diagnostic hypothesis, and time distribution*; 3) the teachers' joint mark that will be given after the presentation.

The student must get a minimum mark of 5 in all the sections to pass the unit.

Final evaluation period: from 08/01/2018 to 22/01/2018.

Resit examination period: from 24/01/2018 to 02/02/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

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## MATERIAL / BASIC RECOMMENDED AND REQUIRED READINGS

Books					
Author	Year	Title	City	Publisher	Description/comment
Ballester J	2000	Desalineaciones torsionales de las extremidades inferiores. Implicaciones clinicopatológicas	Barcelona	Ed Masson,	Obra de referència
Boschetnen-Morrin J. and col	1998	The hand Fundamentals of Therapy	Butterworth Heinemann	Oxford, ed	Obra de consulta
Brand, A. Hollister	1999	Clinical mechanics of the hand	St Louis	Mosby	Obra de referència
Bricot B.	1996	La reprogrammation posturale globale	Montpellier	Sauramps medical	Obra de referència
Buckup,K	2003	Pruebas clínicas para patología ósea, articular y muscular	Barcelona	Masson	Obra de consulta
Busquet L	2000	Les chaînes musculaires Tome I	París	Frison-Roche	Obra de referència
Busquet L.	2002	Les chaînes musculaires Tome II	París	Frison-Roche	Obra de referència
Cleland J.: Netter	2006	Exploración clínica en ortopedia	Barcelona	Masson	Obra de consulta
Drebrunner, Hepp	1996	Diagnóstico en ortopédia	Barcelona	Iatros	Obra de consulta
Gerard A. Malanga	2005	Musculoskeletal Physical Examination: An Evidence-Based Approach		Elsevier Health Sciences	Obra de referencia
Hoppenfeld S	1979	Exploración física de la columna y extremidades	Mexico	Manual moderno	Obra de consulta
Jurado A. Medina I	2006	Manual de pruebas diagnósticas. Traumatología y Ortopedia	Barcelona	Paido Tribo	Obra de consulta
Hunter Mackin Callahan	1995	Rehabilitation of the hand : Surgery and Therapy	St Louis,	Mosby	Obra de referencia
Konin JG	2004	Test especiales para el examen en ortopedia	Barcelona	Paido Tribo	Obra de referencia
Miralles R, Miralles I	2006	Biomecánica de los tejidos y de las articulaciones	Barcelona	Masson	Obra de referencia
Miralles R, Miralles I	2006.	Biomecánica de las	Barcelona	Masson	Obra de

		patologías del aparato locomotor			referencia
Myers T	2008	Anatomy trains	New York	Churchill Livingstone	Obra de consulta
Richter P. Hebgen E.	2007	Puntos gatillo y cadenas musculares funcionales en osteopatía y terapia manual	Barcelona	Paidotribo	Obra de referencia
Root M, Orien W, Weed J, Hughes R.	1991	Exploración Biomecánica del Pie	Madrid	Ortocen	Obra de referencia
Rueda M	2004	Podología. Los desequilibrios del Pie	Barcelona	Paidotribo	Obra de consulta
Stanley BG	1992	Concepts in Hand Rehabilitation	St Louis	Contemporary Perspectives in Rehabilitation	Obra de consulta
Tubiana R.	1996	Examination of the hand	London	Martin Dunitz.	Obra de referencia
Viel E	1999	Diagnóstico fisioterápico	Barcelona	Masson	Obra de referencia

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## GENERAL INFORMATION

Course unit		<b>PHYSIOTHERAPY IN CLINICAL SPECIALITIES IN THE LOCOMOTOR SYSTEM – I</b>					
ECTS	6.00	Type of course unit	Compulsory	Academic year	2017-2018		
Delivered	<b>SEMESTRALLY</b>		Term / year	<b>1 / 2</b>			
Lecturers	<b>Mr Lluís Auguet</b> <b>Mr Ricard Tutsaus</b> <b>Ms Georgina Pardina</b> <b>Ms Anabel Casanovas</b> <b>Mr Sergio Gómez</b>						
Language of instruction	<b>CATALAN / SPANISH</b>						
Admission requirements							

## THE COURSE UNIT WITHIN THE CURRICULUM

- Course contents: Physiotherapy of the locomotor system.
- This course aims to consolidate the bases of the different physiotherapy treatments of lesions and different pathologies of the locomotor system in the field of manual therapy, thermotherapy, electrotherapy, hydrotherapy, and vibrotherapy.
- The knowledge of different techniques of manual therapy, as well as the appropriate use of thermotherapy, electrotherapy, hydrotherapy, and vibrotherapy, is indispensable within the degree in physiotherapy.

## COMPETENCES

Specific competences	<p><b>E1.</b> Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.</p> <p><b>E3.</b> Demonstrate knowledge of the physiotherapy methods, procedures, and actions that lead to clinical therapeutics.</p> <p><b>E9.</b> Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.</p>
Transversal competences	<b>T1.</b> Analyse and summarise.
Generic competences	<b>G2.</b> Develop strategies of autonomous learning.

## LEARNING OBJECTIVES

**E1.** Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.

**Learning outcomes:**

**E1.21.** Describe and analyse human movement.

**Learning objectives:**

**E1.21.1.** Relate impairments of the locomotor system to biomechanical normality in the lower limbs and vertebral column.

**E3.** Demonstrate knowledge of the physiotherapy methods, procedures, and actions that lead to clinical therapeutics.

**Learning outcomes:**

**E3.2.** Identify the physiological and structural changes caused by a physiotherapy intervention for impairments of the locomotor system.

**Learning objectives:**

**E3.2.1.** Describe how the different types of manoeuvres of manual therapy and physical agents may modify tissues.

**E3.3.** Apply the physiotherapy methods, procedures, and actions in the different clinical specialities that treat impairments of the locomotor system.

**Learning objectives:**

**E3.3.1.** Describe the theoretical bases of myotendinous stretching, muscle toning methods and the biomechanical bases of manual therapy. .

**E3.3.2.** Apply the different re-education methods used in the treatment of different musculoskeletal pathologies affecting the lower limbs and vertebral column.

**E9.** Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.

**Learning outcomes:**

**E9.4.** Define the general and specific objectives for the application of the physiotherapy treatment of impairments of the locomotor system.

**Learning objectives:**

**E9.4.1.** Identify the priority objectives in the treatment of the main impairments in the different anatomical structures affected, using different therapeutic methods: manual therapy, thermotherapy, electrotherapy, and hydrotherapy.

**E9.5.** Describe those circumstances that determine the priorities to be taken in the physiotherapy treatment of impairments of the locomotor system.

**Learning objectives:**

**E9.5.1.** Identify the characteristics of the different impairments of the locomotor system that may decide in favour of a given treatment with some physical agents.

**E9.6.** Enumerate the different types of material and instruments used in the physiotherapy treatment of impairments of the locomotor system.

**Learning objectives:**

**E9.6.1.** Use the different equipment in electrotherapy, thermotherapy, hydrotherapy, and vibrotherapy for the treatment of impairments of the locomotor system.

**T1.** Analyse and summarise.

**Learning objectives:**

**T1.1.** Prepare content bibliography cards.

**Generic competence:**

**G2.** Develop strategies of autonomous learning.

This is a competence that is developed by working competence "T1. Analyse and summarise".

**CONTENTS**

**1. ELECTROTHERAPY/THERMOTHERAPY/VIBROTHERAPY/HYDROTHERAPY**  
THEORETICAL PART

- 1.1. General aspects of electrotherapy.
- 1.2. Vibrotherapy
- 1.3. Thermotherapy
- 1.4. Cryotherapy.
- 1.5. Hydrotherapy

PRACTICAL PART.

- 1. Galvanic current. Iontophoresis
- 2. Träbert's currents
- 3. Diadynamic currents
- 4. Stimulating currents: Faradic
- 5. Stimulating currents: Exponential
- 6. TENS
- 7. Interferential currents
- 8. Thermotherapy (high frequency)

**2. MUSCLE THERAPY (+ MUSCLE POTENTIATION + MYOTENDINOUS STRETCHING)**

- 2.1 Manual therapy of the pelvic region
- 2.2 Manual therapy of the lumbar region
- 2.3 Manual therapy of the thoracic region.
- 2.4 Manual therapy of the cervical region.
- 2.5 Manual therapy of the foot.
- 2.6 Manual therapy of the knee.
- 2.7 Manual therapy of the hip joint.
- 2.8 Muscle potentiation.
- 2.9 Myotendinous stretching

**3. MASSAGE**

- 3.1 Massage techniques for the cervical muscles.
- 3.2 Massage techniques for the dorsal muscles.
- 3.3 Massage techniques for the lumbar and gluteal muscles.
- 3.4 General techniques for the vertebral column.
- 3.5 Massage techniques for the upper limb.
- 3.6 Massage techniques for the lower limb.

## TEACHING METHOD

### **DIRECTED ACTIVITIES**

- **Theoretical lessons** that will provide the student with the necessary knowledge in order to understand and be able to apply the different treatment techniques given to the patient. The lessons will offer visual and computer-based support.

Estimated time: 19 hours.

- **Practical lessons** where the teacher will present, with the help of a model, different techniques. The lessons will offer visual and computer-based support..

Estimated time: 20 hours.

### **SUPERVISED ACTIVITIES**

- **Practical activities**, under the supervision of the teacher, to apply the different techniques presented.

Estimated time: 25.5 hours.

### **AUTONOMOUS ACTIVITIES**

- **Searching** articles on a proposed topic.

Estimated time: 10 hours.

- **Paper writing:** elaborate a content card based on one of the articles found in the search. The rest of articles will be referenced.

Estimated time: 5 hours.

- **Autonomous work** of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.

Estimated time: 68,25 hours.

## ASSESSMENT METHOD

The assessment method will include:

- The knowledge acquired in each section the unit is divided into will be assessed through written tests, which will amount to 25% of the total mark.
- Assessment of manual skills when applying the different techniques as well as when adapting a specific techniques/manoeuvre to a given situation, through oral practical tests that account for 65% of the total mark.
- Papers and clinical cases with 10% of the total mark.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Attendance at 100% of practical classes (justified absences will allow the student to miss up to 20% of all the practical classes).
- Get a minimum final mark of 5.

Rules concerning internal practical lessons:

Please, check the school's Rules of Internal Practical lessons.

Final evaluation period: from 08/01/2018 to 22/01/2018.

Resit examination period: from 24/01/2018 to 02/02/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

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## MATERIAL/BASIC RECOMMENDED AND REQUIRED READINGS

Books. Manual therapy (limbs)					
Author	Year	Title	City	Publisher	Description/comment
Tixa, Serge. Ebenegger, Bernard	2004	Atlas de Técnicas osteopáticas de las extremidades: diagnóstico, causas, cuadro clínico, reducciones.	Barcelona	Masson	
Tixa, Serge	2006	Atlas de Anatomía palpatoria (tomo 1º)	Barcelona	Masson	Zona edició.
Tixa, Serge	2006	Atlas de anatomía palpatoria (tomo 2º)	Barcelona	Masson	Zona edició.
Books. Manual Therapy					
Author	Year	Title	City	Publisher	Description/comment
Tixa, Serge. Ebenegger, Bernard	2008	Atlas de técnicas articulares osteopáticas (T 3): raquis cervical, torácico, lumbar y coxis	Barcelona	Masson	
Tixa, Serge. Ebenegger, Bernard	2006	Atlas de técnicas osteopáticas (T 2); pelvis y charnela lumbosacra	Barcelona	Masson	
Books. Electrotherapy / Thermotherapy / Vibrotherapy / Hydrotherapy					
Author	Year	Title	City	Publisher	Description/comment
Aramburu, C. Muñoz, E. Igual, C		Electroterapia, Termoterapia e hidroterapia	Madrid	Síntesis	
Kant, J		Principios y práctica de La electroterapia	Barcelona	Jims	
Rodriguez, M		Electroterapia en fisioterapia	Madrid	Médica Panamericana	
A.Hüter-Becker, H.Schewe, W.Heipertz		Terapia Física	Barcelona	Ed. Paidotribo	
J. Plaja		Analgesia por medios físicos	Madrid	Mc Graw Hill	
Books. Massage					
Author	Year	Title	City	Publisher	Description/comment
Canamasas Ibañez, S.	1993	Técnicas manuales: masoterapia.	Barcelona	Masson/Saveat Medicina	
Vázquez Gallego J	2000	El masaje terapéutico y deportivo	Madrid	Mandala	7ena edició
Andreewicz Biriukov A	2003	El masaje deportivo	Barcelona	Paidotribo.	4a edició
Schwope F.	1997	El masaje en el deporte	Barcelona	Hispano Europea	

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Boigey M	1998	Manual de masaje	Barcelona	Toray-Masson	5ena edició
Benjamin, Patricia J., Lamp, Scott P	1998	El masaje en el deporte	Barcelona	Bellaterra.	

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## GENERAL INFORMATION

Course unit		PRACTICUM - I			
ECTS	6.00	Type of course unit	Compulsory	Academic year	2017-2018
Delivered		<b>SEMESTRALLY</b>		Term / year	<b>1 / 2</b>
Lecturers		Ms Yolanda Sánchez Ms Melania Masó Nuñez Ms Laia Sánchez Lloansi			
Language of instruction		<b>CATALAN</b>			
Admission requirements		BASIC PHYSIOTHERAPY OF THE LOCOMOTOR SYSTEM – I BASIC PHYSIOTHERAPY OF THE LOCOMOTOR SYSTEM – II			

## THE COURSE UNIT WITHIN THE CURRICULUM

- Contents: Guided training.
- This course unit aims to consolidate the bases of basic physiotherapy of the locomotor system and integrate all the knowledge, abilities, skills, attitudes, and values acquired in all the subjects done so far, under the guidance of qualified physiotherapists. All those professional competences necessary to prepare the student to give effective physiotherapy care and comprehensive care to patients/users will be developed.

## COMPETENCES

Specific competences	<p><b>E4.</b> Demonstrate knowledge of the physiotherapy methods, procedures, and actions that contribute to health promotion and maintenance.</p> <p><b>E5.</b> Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.</p> <p><b>E6.</b> Write and fill in physiotherapy registers.</p> <p><b>E7.</b> Assess the patient's functional state, taking into account physical, psychological, and social aspects.</p> <p><b>E8.</b> Make the physiotherapy diagnosis according to established norms and internationally recognised validation instruments.</p> <p><b>E9.</b> Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.</p> <p><b>E12.</b> Write discharge reports when the objectives have been achieved.</p>
Transversal competences	<p><b>T3.</b> Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing.</p> <p><b>T5.</b> Problem solving.</p>

	<p><b>T7.</b> Team work.</p> <p><b>T12.</b> Identify and deal with changes easily.</p>
Generic competences	<p><b>G2.</b> Develop strategies of autonomous learning.</p>

## LEARNING OBJECTIVES

**E4.** Demonstrate knowledge of the physiotherapy methods, procedures, and actions that contribute to health promotion and maintenance.

**Learning outcomes:**

**E4.1.** Design, teach, and advise about the different prevention methods for functional impairments and particularly those related to postural hygiene, mobility loss, and algid acute stages.

**Learning objectives:**

**E4.1.1.** Recommend prevention guidelines for patients with mild affections of the locomotor system.

**E5.** Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.

**Learning outcomes:**

**E5.5.** Solve clinical cases susceptible of physiotherapy treatment in any clinical specialty.

**Learning objectives:**

**E5.5.1.** Effectively apply the different physiotherapy techniques to patients with mild impairments of the locomotor system.

**E6.** Write and fill in physiotherapy registers.

**Learning outcomes:**

**E6.3.** Record all the steps taken from the moment the patient/user is admitted to the moment he/she is discharged in an adequate and effective way according to each clinical specialty.

**Learning objectives:**

**E6.3.1.** Interpret physiotherapy records of patients with mild impairments of the locomotor system

**E7.** Assess the patient's functional state, taking into account physical, psychological, and social aspects.

**Learning outcomes:**

**E7.12.** Follow the adequate physiotherapy validation procedures in order to determine the level of affection and its possible functional impact for the patients/users the student takes care of during the training.

**Learning objectives:**

**E7.12.1.** Use appropriately the specific assessment tools on patients with mild impairments of the locomotor system.

**E8.** Make the physiotherapy diagnosis according to established norms and internationally recognised validation instruments.

**Learning outcomes:**

**E8.9.** Establish a physiotherapy diagnostic hypothesis.

**Learning objectives:**

**E8.9.1.** Identify the deficiencies, limitations in everyday activities, participation restrictions, and contextual factors of patients with mild impairments of the locomotor system

**E9.** Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.

**Learning outcomes:**

**E9.17.** Define the general and specific objectives for the application of the physiotherapy treatment.

**Learning objectives:**

**E9.17.1.** Propose the treatment objectives of mild impairments of the locomotor system.

**E9.18.** Establish treatment priorities according to the problems detected.

**Learning objectives:**

**E9.18.1.** Classify the short-term and long-term goals for patients with mild impairments of the locomotor system.

**E9.20.** Anticipate the necessary material and equipment.

**Learning objectives:**

**E9.20.1.** Anticipate the necessary material and equipment for the treatment of mild impairments of the locomotor system.

**E12.** Write discharge reports when the objectives have been achieved.

**Learning outcomes:**

**E12.2.** Make a physiotherapy report that includes all the necessary information so that it is a valid communication tool for users and/or professionals.

**Learning objectives:**

**E12.2.1.** Interpret discharge reports of patients with mild impairments of the locomotor system.

**T3.** Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing.

**Learning objectives:**

**T3.1.** Use well-structured information.

**T3.2.** Use patient-friendly language.

**T5.** Problem solving.

**Learning objectives:**

**T5.1.** Find the adequate tools for the problem to be solved.

**T5.2.** Show initiative when facing difficulties.

**T7.** Team work.

**Learning objectives:**

**T7.1.** Fit into the physiotherapy team.

**T12.** Identify and deal with changes easily.

**Learning objectives:**

**T12.1.** be able to flexibly interpret your environment.

**Generic competence:**

**G2.** Develop strategies of autonomous learning.

This competence is developed by working competences "**T3.** Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing", "**T5.** Problem solving", "**T7.** Team work", and "**T12.** Identify and deal with changes easily".

## CONTENTS

The Practicum aims to integrate all the knowledge, abilities, skills, attitudes, and values acquired in all the subjects done so far, under the guidance of qualified physiotherapists. All those professional competences necessary to prepare the student to give effective physiotherapy care and comprehensive care to patients/users will be developed.

## TEACHING METHOD

### **TRAINING**

- The student will assess the patients, make the physiotherapy diagnosis, create a plan of action and apply it, and evaluate the results.  
Estimated time: 105 hours.

### **INFORMATIVE SESSIONS**

- The student will be informed about how to do the different training activities.  
Estimated time: 7,5 hours.

### **PAPER WRITING**

- Write a report of the training.  
Estimated time: 30 hours.

### **SELF-EVALUATION**

- Write a self-evaluation report.  
Estimated time: 4,5 hours.

### **EVALUATION BY THE CENTRE AND TUTOR**

- Fill in an evaluation form about the centre and tutor.  
Estimated time: 3 hours.

## ASSESSMENT METHOD

The practicum commission will assess:

- The report given by the tutor, which will account for 60% of the final mark.
- The self-evaluation form, which will account for 1% of the final mark.
- The practicum report, which will account for 39% of the final mark.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Get a minimum final mark of 5.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

**MATERIAL/ BASIC RECOMMENDED AND REQUIRED READINGS**

Web pages			
Title	Description	URL	
EscalaFisioterapia.pdf	Escala de valoració i qüestionaris més emprats a Fisioteràpia	Intranet de l'assignatura	

## GENERAL INFORMATION

Course unit		<b>HUMAN PATHOLOGY - II</b>						
ECTS	6.00	Type of course unit	<b>Basic education</b>	Academic year	<b>2017-2018</b>			
Delivered		<b>SEMESTRALLY</b>	Term / year	<b>2 / 2</b>				
Lecturers		<b>Dr. Josep Lluís Heredia Budó</b> <b>Dr. José Álvarez Sabín</b> <b>Mr. Richard Maast</b> <b>Mr. Francesc Novell</b> <b>Dr. Judith Lleberia</b> <b>Mr. Josep Pubill</b>						
Language of instruction		<b>CATALAN /SPANISH</b>						
Admission requirements		ANATOMY – I ANATOMY – II FISIOLOGIA – I PHYSIOLOGY – II						

## THE COURSE UNIT WITHIN THE CURRICULUM

- Course contents: Human pathology.
- This course unit, together with “Human pathology I”, aims to provide the student with the necessary knowledge of aetiology, epidemiology, pathogeny, anatomical pathology, prognosis, evolution, diagnosis, and treatment of the main pathological processes which can be treated with physiotherapy in the field of traumatology, rheumatology, neurology, cardiology, pneumology, and urogynecology. The course unit also aims to provide the student with the basic knowledge of diagnostic imaging applied to the pathologies of the respiratory system, central nervous system, gastrointestinal tract, vascular system and urinary system.
- The knowledge of different pathological processes is fundamental within the physiotherapy curriculum in order to make a diagnosis and to design, give and assess the appropriate physiotherapy treatment.

## COMPETENCES

Specific competences	<b>E1.</b> Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.
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## LEARNING OBJECTIVES

**E1.** Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.

**Learning outcomes:**

**E1.17.** Explain the physiopathology of the main diseases that can be treated with physiotherapy, identifying their manifestations along the pathological process.

**Learning objectives:**

**E1.17.1.** Define neurology.

**E1.17.2.** Explain medical action in neurology.

**E1.17.3.** Describe neurological examinations and their alterations.

**E1.17.4.** Describe complementary tests in neurology.

**E1.17.5.** Enumerate the main pathological processes in neurology.

**E1.17.6.** Explain the classification of the different pathological processes in neurology.

**E1.17.7.** Review the anatomy and physiology of the anatomical structures related to pathological processes in neurology.

**E1.17.8.** Explain the descriptive epidemiology (incidence and prevalence of the different pathological processes in neurology).

**E1.17.9.** Enumerate the risk factors (analytical epidemiology) that predispose to neurological pathologies.

**E1.17.10.** Describe the aetiology of the different pathological processes in neurology.

**E1.17.11.** Explain the pathogeny of the different pathological processes in neurology.

**E1.17.12.** Describe the pathological anatomy of the different pathological processes in neurology

**E1.17.13.** Describe the clinical features of the different pathological processes in neurology.

**E1.17.14.** Explain the prognosis of the different pathological processes in neurology.

**E1.17.15.** Explain the evolution of the different pathological processes in neurology.

**E1.17.16.** Enumerate the complementary tests that are done in the different pathological processes in neurology.

**E1.17.17.** Explain how the diagnosis of the different pathological processes in neurology is made.

**E1.17.18.** Describe the differential diagnosis of the main pathological processes in neurology.

**E1.17.19.** Explain pulmonary physiology.

**E1.17.20.** Explain pulmonary physiopathology.

**E1.17.21.** Describe functional respiratory tests.

**E1.17.22.** Describe the different techniques used in pneumology and thoracic surgery.

**E1.17.23.** Describe the symptoms and signs in respiratory pathologies.

**E1.17.24.** Describe the main pathological respiratory processes.

**E1.17.25.** Explain the physiopathology of heart failure and myocardial ischaemia.

**E1.17.26.** Describe the pathological processes and urogynecological dysfunctions that can be treated with physiotherapy.

**E1.17.27.** Explain the classification, epidemiology, aetiology, pathogeny, risk factors, anatomical pathology, clinical features, prognosis, evolution, complementary tests, and diagnosis of urinary incontinence.

**E1.17.28.** Explain the epidemiology, aetiology, pathogeny, risk factors, anatomical pathology, clinical features, prognosis, evolution, complementary tests, and diagnosis of constipation, bowel incontinence, wind incontinence, and faecal urgency.

**E1.17.29.** Explain the epidemiology, aetiology, pathogeny, risk factors, anatomical pathology, clinical features, prognosis, evolution, complementary tests, and diagnosis of the main sexual dysfunctions.

**E1.17.30.** Describe the different diagnostic imaging techniques used in the study of pathologies of the respiratory system, central nervous system, gastrointestinal tract, vascular system, and urinary system.

**E1.17.31.** Describe the different diagnostic imaging techniques used in the field of obstetrics and gynaecology.

**E1.17.32.** Explain the radiologic semiology of the respiratory system, central nervous system, digestive system, vascular system, and urinary system.

**E1.17.33.** Explain the radiologic semiology in obstetrics and gynaecology.

**E1.17.34.** Describe the concept, physical foundations, types of studies, and indications of angiography.

**E1.17.35.** Describe the different diagnostic imaging techniques used in the study of pathologies of the respiratory system, central nervous system, digestive system, vascular system, and urinary system.

**E1.17.36.** Describe the different diagnostic imaging techniques used in the field of obstetrics and gynaecology.

**E1.17.37.** Explain the radiologic semiology of the respiratory system, central nervous system, digestive system, vascular system, and urinary system.

**E1.17.38.** Explain the radiologic semiology in obstetrics and gynaecology.

**E1.18.** Enumerate the medico-surgical treatments, particularly their physiotherapeutic and orthopaedic aspects, given for the main diseases that can be treated with physiotherapy.

**Learning objectives:**

**E1.18.1.** Describe the different therapeutic, medical, and surgical options in the different pathological processes in neurology that can be treated with physiotherapy.

**E1.18.2.** Explain the treatment for the different cardiac and respiratory pathologies that can be treated with physiotherapy.

**E1.18.3.** Explain the treatment of urinary incontinence, constipation, bowel incontinence, wind incontinence, faecal urgency, and the main sexual dysfunctions

## CONTENTS

### **1. NEUROLOGICAL PATHOLOGY**

- 1.1. Neurology as a medical specialty
- 1.2. Pathology of the spinal cord
- 1.3. Movement disorders (i)
- 1.4. Vestibular syndrome
- 1.5. Cerebellar syndrome and hereditary ataxias
- 1.6. Myelin diseases
- 1.7. Dementias
- 1.8. Strokes
- 1.9. Motor neuron diseases
- 1.10. Peripheral neuropathies
- 1.11. Muscle diseases: myopathies
- 1.12. Neuromuscular Junction Diseases
- 1.13. Brain tumours
- 1.14. Traumatic brain injury

### **2. CARDIAC AND RESPIRATORY PATHOLOGY**

- 2.1. Pulmonary physiology
- 2.2. Pulmonary physiopathology
- 2.3. Respiratory functional tests
- 2.4. Techniques in pneumology and thoracic surgery
- 2.5. Symptoms and signs in respiratory pathologies
- 2.6. Diseases presenting obstructive alterations.
- 2.7. Diseases presenting restrictive alterations
- 2.8. Vascular diseases
- 2.9. Lung cancer
- 2.10. Surgical risks, postsurgical respiratory complications and complications derived from thoracic traumatism
- 2.11. Respiratory infections
- 2.12. Chronic and acute respiratory failure
- 2.13. Oxygen therapy
- 2.14. Heart failure
- 2.15. Myocardial ischaemia

### **3. UROGYNECOLOGICAL PATHOLOGY**

- 3.1. Urogynecological pathological processes and dysfunctions that can be treated with physiotherapy
- 3.2. Urinary incontinence
- 3.3. Coloproctology
- 3.4. Sexual dysfunctions

### **4. DIAGNOSTIC IMAGING**

- 4.1. Respiratory system
- 4.2. Central nervous system
- 4.3. Digestive system
- 4.4. Vascular system
- 4.5. Obstetrics and gynaecology
- 4.6. Urinary system

## TEACHING METHOD

### DIRECTED ACTIVITIES

- **ICT-supported theoretical lessons** that will provide the student with the theoretical bases of the main pathological processes in the fields of neurology, cardiology, pneumology, and urogynecology as well as their medical and surgical treatments. The lessons will also include the main diagnostic imaging techniques applied to pathologies of the respiratory system, central nervous system, digestive system, vascular system, and urinary system.

Estimated time: 58.5 hours

### AUTONOMOUS ACTIVITIES

- **Autonomous work** of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.

Estimated time: 89.5 hours

TYPE OF ACTIVITY	ACTIVITY	LEARNING OUTCOMES	TIME OF INDIVIDUAL STUDY
Directed activities	Theoretical lessons	E1.17, E1.18	58.5
Autonomous activities	Autonomous work	E1.17, E1.18	89.5
<b>TOTAL NUMBER OF HOURS</b>			<b>148</b>

## ASSESSMENT METHOD

The unit will assess the knowledge learnt in each section the course is divided into by means of written tests.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Get a minimum final mark of 5.

Final evaluation period: from 04/06/2018 to 18/06/2018.

Resit examination period: from 19/06/2018 to 29/06/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

ASSESSMENT ACTIVITIES	PERCENTAGE FINAL MARK	LEARNING OUTCOMES	TIME NEEDED BY THE STUDENT
Written tests	100%	E1.17, E1.18	2
<b>TOTAL NUMBER OF HOURS</b>			<b>2</b>

## MATERIAL / BASIC RECOMMENDED AND REQUIRED READINGS

BOOKS					
Author/s	Year	Title	Edition	City	Publisher
<b>NEUROLOGICAL PATHOLOGY</b>					
Codina Puiggrós, A.	1994	Tratado de neurología.		Madrid.	Editorial Libro del Año
Pascual Gómez, J.	2008	Tratado de Neurología Clínica			Ars Médica
Zarzanz, J. J.	2008	Neurología.		Madrid	Elsevier España.
<b>UROGYNAECOLOGICAL PATHOLOGY</b>					
J. Salinas, M. Rapariz	1997	Tratado de reeducación en urogineproctología		Madrid	Salinas-Rapariz eds
P. Abrams, L. Cardozo, S. Khoury, A. Wein	2009	Incontinence		Paris	Editions 21
J. Laycock, J. Haslam	2007	Therapeutic management of incontinence and pelvic pain, pelvic organ disorders		London	Springer Ed
A. Montoto Marques	2005	Lesión medular y vejiga neurógena		Barcelona	Ars Medica
P.E. Papa Petros	2006	Suelo pélvico en la mujer. Funcion, disfuncion y tratamiento según la teoria integral		Barcelona	Mayo Eds
J. Moreno Sierra	2007	Atlas de incontinencia urinaria y suelo pélvico		Madrid	Ene Eds

## MATERIAL / COMPLEMENTARY INFORMATION

BOOKS					
Author/s	Year	Title	Edition	City	Publisher
<b>NEUROLOGICAL PATHOLOGY</b>					
Adams, R. D., Victor, M.	2011	Principios de neurología.		Mexico	Ed. McGraw-Hill Interamericana
Harrison.	2010	Principios de medicina interna.			McGraw-Hill
<b>CARDIAC AND RESPIRATORY PATHOLOGY</b>					
Netter,F.H.	2000	Sistema Respiratorio		Barcelona	Masson
Gold, W.,Nadel J., Nader, J.	2003	Atlas de técnicas en Neumología		Madrid	Elsevier
Albert, R., Spiro, S. Jett, J.	2001	Tratado de Neumología		Madrid	Harcourt
Fauci, A.	2008	Harrison, Principios de Medicina Interna		México	Macgraw-Hill
<b>UROGYNECOLOGICAL PATHOLOGY</b>					
D. Wise, R. Anderson	2003	A headache in the pelvis: a new understanding and treatment for prostatitis and chronic pelvic pain syndromes		USA	Ed National Center for Pelvic Pain Research

## GENERAL INFORMATION

Course unit		<b>PHYSIOTHERAPY IN CLINICAL SPECIALITIES IN THE LOCOMOTOR SYSTEM – II</b>					
ECTS	6.00	Type of subject	Compulsory	Academic year	2017-2018		
Delivered	<b>SEMESTRALLY</b>		Term / year	<b>2 / 2</b>			
Lecturers	<b>Mr Pedro Rubio</b> <b>Ms Vanessa Bayo Tallón</b> <b>Ms Esther Bergel</b> <b>Ms María Borrego</b> <b>Ms Begoña Capilla</b> <b>Ms Melania Masó</b> <b>Ms Georgina Pardina</b> <b>Mr Vicenç Punçola</b> <b>Dr Enric Sirvent</b> <b>Mr Ricard Tutusaus</b> <b>Mr José Miguel Aguililla</b>						
Language of instruction	<b>CATALAN / SPANISH</b>						
Admission requirements							

## THE COURSE UNIT WITHIN THE CURRICULUM

- Course contents: Physiotherapy of the locomotor system.
- This course aims to consolidate the bases of the physiotherapy treatment of the locomotor system of the limbs.
- The knowledge of the physiotherapy treatment of the limbs is fundamental within the degree and the profession.

## COMPETENCES

Specific competences	<p><b>E1.</b> Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.</p> <p><b>E3.</b> Demonstrate knowledge of the physiotherapy methods, procedures, and actions that lead to clinical therapeutics.</p> <p><b>E5.</b> Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.</p> <p><b>E8.</b> Determine the physiotherapy diagnosis according to established norms and using internationally recognised validation instruments.</p>
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	<p><b>E9.</b> Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.</p> <p><b>E17.</b> Participate in the making of health care protocols of scientific evidence-based physiotherapy, promoting professional activities that foster research in physiotherapy.</p> <p><b>E20.</b> Apply the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated criteria.</p>
Transversal competences	<p><b>T2.</b> Organizing and planning.</p> <p><b>T5.</b> Problem solving.</p>
Generic competences	<p><b>G2.</b> Develop strategies of autonomous learning.</p>

## LEARNING OBJECTIVES

**E1.** Demonstrate knowledge of the morphology, physiology, pathology, and conduct of both healthy and ill people in their natural and social environment.

**Learning outcomes:**

**E1.21.** Describe and analyse human movement.

**Learning objectives:**

**E1.21.1.** Relate impairments of the limbs to biomechanical normality.

**E3.** Demonstrate knowledge of the physiotherapy methods, procedures, and actions that lead to clinical therapeutics.

**Learning outcomes:**

**E3.2.** Identify the physiological and structural changes caused by a physiotherapy intervention for impairments of the locomotor system.

**Learning objectives:**

**E3.2.1.** Describe how the different types of manoeuvres of manual therapy for the limbs may modify tissues.

**E3.2.2.** Describe how the different types of active techniques for the limbs may modify tissues.

**E3.2.3.** Describe the natural development of different pathologies of the limbs.

**E3.2.4.** Describe the best therapeutic orientation for the appropriate tissue evolution of the limbs.

**E3.3.** Apply the physiotherapy methods, procedures, and actions in the different clinical specialities that treat impairments of the locomotor system.

**Learning objectives:**

**E3.3.1.** Apply the different re-education methods used in the different pathologies of the limbs.

**E3.3.2.** Describe the best therapeutic orientation for limb pathologies.

**E3.4.** Apply specific physiotherapy intervention methods in order to promote a healthy lifestyle, in relation to the locomotor system, by means of health education.

**Learning objectives:**

**E3.4.1.** Explain the recommendations for a good lifestyle for the patients affected by limb impairments.

**E5.** Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.

**Learning outcomes:**

**E5.1.** Solve clinical cases susceptible of physiotherapy treatment in the field of disorders of the musculoskeletal system.

**Learning objectives:**

**E5.1.1.** Suggest the most adequate treatments for the proposed medical cases of limb pathologies.

**E8.** Determine the physiotherapy diagnosis according to established norms and using internationally recognised validation instruments.

**Learning outcomes:**

**E8.3.** Establish physiotherapy diagnostic hypotheses through clinical cases of impairments of the musculoskeletal system.

**Learning objectives:**

**E8.3.1.** Make an initial physiotherapy diagnosis in order to design the subsequent therapeutic plan.

**E9.** Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.

**Learning outcomes:**

**E9.4.** Define the general and specific objectives for the application of the physiotherapy treatment of impairments of the locomotor system.

**Learning objectives:**

**E9.4.1.** Identify the priority objectives in the treatment of the main impairments of the locomotor system in the limbs.

**E9.5.** Describe those circumstances that determine the priorities to be taken in the physiotherapy treatment of impairments of the locomotor system.

**Learning objectives:**

**E9.5.1.** Identify the priorities that need to be solved when treating impairments of the locomotor system regarding:

- Mobility alterations.
- Factors that favour the perpetuation of the disease or the appearance of new ones.
- Pain.
- Level of precocity of the condition.

**E9.6.** Enumerate the different types of material and instruments used in the physiotherapy treatment of impairments of the locomotor system.

**Learning objectives:**

**E9.6.1.** Use:

- Mechanotherapy.
- Proprioceptive material.
- Tissue mobilization material.

**E17.** Participate in the making of health care protocols of scientific evidence-based physiotherapy, promoting professional activities that foster research in physiotherapy.

**Learning outcomes:**

**E17.1.** Describe and analyse the health care protocols of evidence-based physiotherapy in conditions of the musculoskeletal system..

**Learning objectives:**

- E17.1.1.** Search published articles and bibliography of evidence-based limb physiotherapy.  
**E17.1.2.** Analyse the different established and consensual protocols on limb physiotherapy.

**E20.** Apply the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated criteria.

**Learning outcomes:**

- E20.3.** Describe the guides to good clinical practice applied to impairments of the locomotor system.

**Learning objectives:**

- E20.3.1.** Describe the consensual algorithms in limb physiotherapy.  
**E20.3.2.** Name and identify existing guides to good clinical practice applied to the pathologies mentioned.

**T2.** Organizing and planning.

**Learning objectives:**

- T2.1.** Suggest the treatment for the proposed clinical cases according to logical clinical algorithms and reasoning.

**T5.** Problem solving.

**Learning objectives:**

- T5.1.** Propose possible solutions to problems raised as clinical cases of real patients.

**G2.** Develop strategies of autonomous learning.

This is a competence that is developed by working competence "T2. Organizing and planning" and "T5. Problem solving".

## COURSE CONTENTS

### **1. UPPER LIMB PHYSIOTHERAPY**

#### **1.1 CONTENTS OF THE THEORETICAL LESSONS**

- 1.1.1 THEORETICAL FOUNDATIONS OF THE REEDUCATION OF SHOULDER PAIN.
- 1.1.2 THEORETICAL FOUNDATIONS OF THE REEDUCATION OF A STIFF SHOULDER.
- 1.1.3 THEORETICAL FOUNDATIONS OF THE REEDUCATION OF THE ELBOW.
- 1.1.4 THEORETICAL FOUNDATIONS OF THE REEDUCATION OF THE HAND. METHODOLOGY OF THERAPEUTIC ORGANIZATION.

#### **1.2 CONTENTS OF THE PRACTICAL LESSONS**

- 1.2.1 PRACTICAL SEMINAR ON REEDUCATION TECHNIQUES FOR SHOULDER PAIN AND THE ELBOW.
- 1.2.2 PRACTICAL SEMINAR ON BASIC TECHNIQUES FOR A SEMI-RIGID SHOULDER.
- 1.2.3 PRACTICAL SEMINAR ON REEDUCATION TECHNIQUES FOR A STIFF SHOULDER.
- 1.2.4 MUSCLE TREATMENT TECHNIQUES FOR LATERAL EPICONDYLITIS, MEDIAL EPICONDYLITIS, AND INTRINSIC MUSCLES OF THE HAND.
- 1.2.5 TENDON GLIDING TECHNIQUES FOR FLEXOR MUSCLES ON THE ANTERIOR ASPECT OF THE WRIST, EXTENSORS ON THE POSTERIOR ASPECT OF THE WRIST, AND EXTENSORS ON THE POSTERIOR ASPECT OF THE FINGER.
- 1.2.6 ELASTIFICATION TECHNIQUES FOR THE ANTERIOR WRIST CAPSULE, COLLATERAL LIGAMENTS OF THE METACARPOPHALANGEAL ARTICULATIONS, AND ANTERIOR LIGAMENTS OF PROXIMAL INTERPHALANGEAL ARTICULATIONS.
- 1.2.7 ARTICULAR GLIDING TECHNIQUES OF THE DISTAL RADIOULNAR (DRU) JOINT AND TRAPEZIOMETACARPAL (TMC) JOINT, RECENTERING TECHNIQUES FOR THE RADIOCARPAL AND MIDCARPAL JOINTS, UNBLOCKING TECHNIQUES FOR THE METACARPOPHALANGEAL AND INTERPHALANGEAL ARTICULATIONS.
- 1.2.8 PNF TECHNIQUES APPLIED TO THE PIVOT ELBOW WITH DISTAL FACILITATION.
- 1.2.9 TECHNIQUES OF ELECTROACTIVE WORK.

### **2. LOWER LIMB PHYSIOTHERAPY**

#### **2.1 THEORETICAL CONTENTS:**

- 2.1.1 ALTERATIONS IN MORPHOLOGY AND POSITION OF THE HINDFOOT AND MIDFOOT.
- 2.1.2 LOWER LIMB TENDINOPATHIES: PATELLAR LIGAMENT, ACHILLES, AND POSTERIOR TIBIAL TENDON.
- 2.1.3 FEMOROACETABULAR CONFLICT.
- 2.1.4 ANTERIOR KNEE PAIN.
- 2.1.5 KNEE LIGAMENT LESIONS.

#### **2.2 PRACTICAL CONTENTS:**

- 2.2.1 MANUAL THERAPY TECHNIQUES IN THE TREATMENT OF THE LOWER LIMB PATHOLOGIES COVERED IN THE THEORETICAL LESSONS.

#### **2.3 PAPER PRESENTATION AND COMMENTARY ON SOME CLINICAL CASES.**

### 3. MANUAL THERAPY- PROPRIOCEPTION.

- 3.1 PROPRIOCEPTIVE REEDUCATION.
- 3.2 PROPRIOCEPTION IN TRAUMATIC LESIONS OF THE FOOT.
- 3.3 PROPRIOCEPTION IN TRAUMATIC LESIONS OF THE KNEE.
- 3.4 PROPRIOCEPTION IN LESIONS OF THE SHOULDER GIRDLE.
- 3.5 GLOBAL MOBILIZATIONS OF THE SHOULDER GIRDLE.
- 3.6 STRETCHING THE SHOULDER GIRDLE MUSCLES.
- 3.7 EXAMINATION AND TREATMENT OF THE FIRST RIB.
- 3.8 EXAMINATION AND TREATMENT OF THE SCAPULOHUMERAL JOINT.
- 3.9 EXAMINATION AND TREATMENT OF THE STERNOCOSTOCLAVICULAR JOINT.
- 3.10 EXAMINATION AND TREATMENT OF THE ACROMIOCLAVICULAR JOINT.
- 3.11 MOBILIZATIONS OF THE STERNOCOSTAL JOINT.
- 3.12 EXAMINATION AND TREATMENT OF THE CLAVICLE.
- 3.13 EXAMINATION OF ELBOW MOBILITY.
- 3.14 GLOBAL ELBOW MOBILIZATIONS
- 3.15 EXAMINATION AND TREATMENT OF THE HEAD OF THE RADIUS.
- 3.16 MOBILIZATIONS OF THE CARPUS.

### TEACHING METHOD

#### DIRECTED ACTIVITIES

- **Theoretical lessons** that will provide the student with the basic theoretical knowledge of limb physiotherapy. The lessons will offer visual and computer-based support.

Estimated time: 17.5 hours.

- **Practical lessons** where the teacher will present, with the help of a model, different techniques. The lessons will offer visual and computer-based support.

Estimated time: 17 hours.

- **Presentation and resolution of clinical cases.** Different clinical cases will be presented on which the student will propose a suitable physiotherapy treatment and justify the order and type of treatment that has been chosen.

Estimated time: 4 hours.

#### SUPERVISED ACTIVITIES

- **Practical activities**, under the supervision of the teacher, to apply the different techniques presented.

Estimated time: 27 hours.

#### AUTONOMOUS ACTIVITIES

- **Bibliographical search** of some proposed topics, critical revision of the methodology of the articles, and write a summary of the contents.

Estimated time: 10 hours.

- **Paper writing:** write a paper, in group, on the critical evaluation of some current documentation, which will have been chosen by the students themselves.

Estimated time: 10 hours.

- **Autonomous work** of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.

Estimated time: 61.75 hours.

#### ASSESSMENT METHOD

The assessment method will include:

- The knowledge acquired in each section the unit is divided into will be assessed through written tests, which will amount to 35% of the total mark.
- Assessment of the manual skills necessary to apply a specific technique and of the adequacy of the technique/manoeuvre used in a given situation, through oral practical tests that account for 45% of the total mark.
- Papers and clinical cases with 20% of the total mark.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Attendance at 100% of practical classes (justified absences will allow the student to miss up to 20% of all the practical classes).
- Get a minimum final mark of 5.

Rules concerning internal practical lessons:

Please, check the school's Rules of Internal Practical lessons.

Final evaluation period: from 04/06/2018 to 18/06/2018.

Resit examination period: from 19/06/2018 to 29/06/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

**MATERIAL / BASIC RECOMMENDED AND REQUIRED READINGS**

Books					
Author	Year	Title	City	Publisher	Description/comment
Barbara G. Stanley	1992	Concepts in Hand Rehabilitation		Contemporary Perspectives in Rehabilitation	
Hunter Mackin Callahan	1995	Rehabilitation of the hand: Surgery and Therapy	St Louis	Mosby	
Judith Boschetnen-Morrin and col	1998	The hand Fundamentals of Therapy	Oxford	Butterworth Heinemann	
Martinez JL	2.006	Lesiones en el hombro y fisioterapia	Madrid	Aran	
Neiger, Genot et al	1.988	Kinesioterapia principios	Buenos Aires	Panamericana	
Nuñez Samper M, Llanos Alcazar	1997	Biomecánica, medicina y cirugía del pie	Barcelona	Masson	
Pérez Sainz	2.004	Fisioterapia del complejo articular del hombro	Barcelona	Masson	
Puigdollers JM	2.000	El hombro doloroso	Barcelona	Laboratorios Dr Andreu	
Rockwood Ch	2006	Hombro	Barcelona	Marban	
Travell J. G, Simons	1983.	Myofascial Pain and Dysfunction. The Trigger Point Manual.	Baltimore	Williams and Wilkins	
Vilar, Sureda	2005	Fisioterapia del aparato locomotor	Barcelona	McGraw Hill	
Voss D.E., Ionta M.K., Myers B.J	1987	Facilitación Neuromuscular Propioceptiva	Argentina	Editorial Médica Panamericana	

Articles						
Author	Title	Publication	Volume	Year	Pages	Description/comment
		American Journal of hand therapy				
		British Journal of Hand Therapy				
Sirvent E. Huguet J	Resultados y principios de reeducación en la ruptura del manguito de rotadores no quirúrgico	Fisioterapia	Vol 17	1995	81-89	

 escoles universitàries <b>gimbernat</b> i Tomàs Cerdà <small>ADSCRITA A LA UPB</small>	<b>PHYSIOTHERAPY (EHEA DEGREE)</b> <b>COURSE CATALOGUE</b>	<b>EUIF GIMBERNAT</b> Fisioteràpia
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## GENERAL INFORMATION

Course unit		PHYSIOTHERAPY IN NEUROLOGY I					
ECTS	6.00	Type of subject	Compulsory	Academic year	2017-2018		
Delivered	SEMESTRALLY		Term / year	2 / 2			
Lecturers	<b>Ms Marta Fernández Lobera</b> <b>Ms Vanessa Bayo</b> <b>Ms Èlia González</b> <b>Ms Lluïsa Porte Carrera</b> <b>Mr Isidro Redondo</b> <b>Dr Enric Sirvent Ribalda</b>						
Language of instruction	<b>CATALAN / SPANISH</b>						
Admission requirements							

## THE COURSE UNIT WITHIN THE CURRICULUM

- Course contents: Physiotherapy in neurology.
- This course unit aims to provide the student with the theoretical knowledge and practical skills to carry out assessments and give scientific evidence-based treatments in the field of neurological physiotherapy.
- The knowledge of this area of physiotherapy is indispensable within the degree and the profession since the increasing incidence of vascular and neurodegenerative pathologies makes that a higher percentage of the population need this specialty.

## COMPETENCES

Specific competences	<p><b>E3.</b> Demonstrate knowledge of the physiotherapy methods, procedures, and actions that lead to clinical therapeutics.</p> <p><b>E5.</b> Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.</p> <p><b>E7.</b> Assess the patient's functional state, taking into account physical, psychological, and social aspects.</p> <p><b>E8.</b> Determine the physiotherapy diagnosis according to established norms and using internationally recognised validation instruments.</p> <p><b>E9.</b> Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.</p>
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	<p><b>E17.</b> Participate in the making of health care protocols of scientific evidence-based physiotherapy, promoting professional activities that foster research in physiotherapy.</p> <p><b>E20.</b> Apply the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated criteria.</p>
Transversal competences	<p><b>T6.</b> Take the most adequate decisions in a specific situation.</p> <p><b>T7.</b> Team work.</p>
Generic competences	<p><b>G1.</b> Develop critical thinking and reasoning and know how to effectively express it both in the student's own languages and in a third language.</p> <p><b>G2.</b> Develop strategies of autonomous learning.</p>

## LEARNING OBJECTIVES

**E3.** Demonstrate knowledge of the physiotherapy methods, procedures, and actions that lead to clinical therapeutics.

**Learning outcomes:**

**E3.6.** Identify the physiological and structural changes that can happen as a consequence of a physiotherapy intervention for neurological conditions.

**Learning objectives:**

**E3.6.1.** Relate the different procedures in neurological physiotherapy to the neurophysiological mechanism involved.

**E3.6.2.** Differentiate hypertonia, from protective hypertonia and muscle shortening. Identify the changes brought about the application of adequate physiotherapy procedures in these alterations.

**E3.7.** Apply the physiotherapy methods, procedures, and actions in the therapeutics of neurological conditions.

**Learning objectives:**

**E3.7.1.** Apply physiotherapy procedures to increase muscle tone.

**E3.7.2.** Apply physiotherapy procedures to reduce muscle tone.

**E3.7.3.** Apply physiotherapy techniques and procedures to improve secondary adaptations to immobility.

**E3.7.4** Apply physiotherapy techniques to improve pathoneurodynamic, sensitivity, and autonomic nervous system alterations.

**E3.7.5** Apply physiotherapy techniques to improve motor control by means of perceptive processes.

**E3.7.6** Apply techniques in order to regain the functions of the lower limb, upper limb, and trunk.

**E3.7.7** Apply the basic patterns of Kabat's PNF (proprioceptive neuromuscular facilitation) method for upper and lower limbs.

**E5.** Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.

**Learning outcomes:**

**E5.2.** Solve clinical cases susceptible of physiotherapy treatment in the field of neurological conditions.

**Learning objectives:**

**E5.2.1.** Choose the most adequate physiotherapy actions or procedures to solve specific clinical cases in the field of neurological physiotherapy.

**E5.2.2.** Develop empathetic abilities when dealing with people with neurological conditions.

**E7.** Assess the patient's functional state, taking into account physical, psychological, and social aspects.

**Learning outcomes:**

**E7.5.** Describe the bases of the assessment of the nervous system.

**Learning objectives:**

**E7.5.1.** Develop a physiotherapy case history focused on promoting observation skills.

**E7.5.2** Develop specific abilities to carry out the assessment of alterations of muscle tone, sensitivity, balance, and gait in patients suffering from a neurological condition.

**E7.5.3.** Interpret the terminology of neurological conditions in hospital discharge reports.

**E7.6.** Apply the adequate physiotherapy assessment procedures, with the aim of determining the level of affection of the nervous system and its possible functional repercussion.

**E7.6.1.** Detect the alterations in the structure and function, limitations in activity and restrictions in the participation of the sufferers of neurological conditions.

**E7.6.2.** Objectively measure the results derived from the application of different procedures in neurological physiotherapy.

**E7.6.3.** Choose the most appropriate assessment tools to measure a given condition within the framework of a clinical case presented in class.

**E8.** Determine the physiotherapy diagnosis according to established norms and using internationally recognised validation instruments.

**Learning outcomes:**

**E8.5.** Design a physiotherapy diagnostic hypothesis from some clinical cases related to neurological conditions.

**E8.5.1.** Proper use of the different standardised evaluation scales in neurological physiotherapy.

**E8.5.2.** Formulate a diagnostic hypothesis from the deficits detected (motor, sensory, and cognitive) in a physiotherapy examination.

**E9.** Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.

**Learning outcomes:**

**E9.8.** Define the generic and specific goals to be applied for the physiotherapy treatment of neurological conditions.

**Learning objectives:**

**E9.8.1.** Plan the short-term and long-term treatment goals given a diagnostic hypothesis.

**E9.9.** Describe the circumstances that determine the priorities for action in the physiotherapy treatment of neurological conditions.

**Learning objectives:**

**E9.9.1.** Plan the short-term and long-term treatment goals according to the patient's personal and family situation and his/her current and future environment.

**E9.9.2** Identify the priorities that need to be solved in order to achieve functional independence based on regaining quality movements.

**E9.10.** List the different types of material and equipment to be used in the physiotherapy treatment of neurological conditions.

**Learning objectives:**

**E9.10.1.** Choose the most appropriate material for the rehabilitation of different neurological conditions.

**E9.10.2.** Consider the individualised cognitive tools for each patient based on the identification of the problem, elaboration of a hypothesis, and its verification.

**E17.** Participate in the making of health care protocols of scientific evidence-based physiotherapy, promoting professional activities that foster research in physiotherapy.

**Learning outcomes:**

**E17.2.** Describe and analyse the health care protocols of evidence-based physiotherapy in conditions of the nervous system.

**Learning objectives:**

**E17.2.1.** List the different health care protocols of evidence-based physiotherapy in conditions of the nervous system.

**E20.** Apply the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated criteria.

**Learning outcomes:**

**E20.5.** Describe the guides to good clinical practice applied to neurological conditions.

**Learning objectives:**

**E20.5.1.** Name and identify the guides to good clinical practice applied to neurological conditions.

**T6.** Take the most adequate decisions in a specific situation.

**Learning objectives:**

**T6.1.** Justify the decisions taken.

**T7.** Team work.

**Learning objectives:**

**T7.1.** Develop the appropriate conditions to work in teams when defending a clinical case.

**T7.2.** Take account of other people's point of view when discussing a video about neurorehabilitation.

**Generic competence:**

**G1.** Develop critical thinking and reasoning and know how to effectively express it both in the student's own languages and in a third language.

**Learning objectives:**

**G1.1.** Use the basic terminology and grammatical structures in medical English when presenting Journal Club articles.

**G1.2.** Practice active reading strategies in English when reading articles and reference works in the field of neurological physiotherapy.

**G1.3.** Practice basic active oral comprehension strategies in English by means of watching audiovisual material in this language.

**G2.** Develop strategies of autonomous learning.

This is a competence that is developed by working competence "**T7. Team work**".

## CONTENTS

In this course unit we will study the necessary procedures to identify and give the most appropriate physiotherapy treatment of conditions of the nervous system, as well as their prevention. We will also develop the mechanisms and tools to make a physiotherapy diagnosis of neurological conditions and the evaluation systems for the efficiency, use, and scientific validation of physiotherapy processes, as well as the use of guides to good clinical practice in conditions of the nervous system.

We will study the analytical, functional and global examination and assessment of conditions of the nervous system. We will teach the manual and instrumental methods and procedures of neurological rehabilitation techniques.

We will study physiotherapy applied to disorders of muscle tone and movement, cerebrovascular pathologies, demyelinating and motor neuron diseases, medullary pathology, peripheral neuropathies, neuromuscular diseases, epilepsy, dementia and tumours. We will also deal with sensibility and sensory disturbances, balance and coordination disorders, cognitive, behavioural disorders and disorders of consciousness. We will review all the basic application techniques that are used in the field of neurological physiotherapy.

### 1. PHYSIOTHERAPY OF THE CENTRAL NERVOUS SYSTEM – I

- 1.1 Applied neurophysiology and neuroanatomy.
- 1.2 Alterations secondary to lesions of the CNS.
- 1.3 Physiotherapy assessment in neurology. Standardised evaluation scales.

1.4 Procedures and actions in neurological physiotherapy.

1.5 Neurological physiotherapy in hemiplegia:

1.6 Neurological physiotherapy in cerebellar syndrome:

1.7 Pusher patients, characteristics and treatment.

### 2. PHYSIOTHERAPY OF THE PERIPHERAL NERVOUS SYSTEM.

2.1. Structure of peripheral nerves

2.2. Physiotherapy assessment. Development stages. General concepts of the treatment.

2.3. Techniques of peripheral nerve repair

2.4. Radial nerve paralysis

2.5. Median nerve paralysis

2.6. Ulnar nerve paralysis

2.7. Brachial plexus lesions

2.8. Common peroneal nerve paralysis

2.9. Tibial nerve paralysis

2.10. Polyradiculoneuritis or Guillain-Barré syndrome

2.11. Polyneuritis

### 3. THE PERFETTI METHOD – I

3.1. Concept of organization of normal movement: the connoisseur.

3.2. Theories of neurological rehabilitation:

3.3. Deficits in neurological patients: spasticity

3.4. Deficits in neurological patients:

3.5. Difficulties of the hemiplegic patient: the heminegligent patient.

3.6. Technical aids and adaptations in neurological physiotherapy: at home and for the patient.

3.7. Exercise classification depending on spasticity level

3.8. Functional systems of the upper limb.

3.9. Functional system of the trunk: the middle line

3.10. Requirements to do the exercises in supine position o sitting.

### 4. KABAT METHOD

4.1 Introduction to proprioceptive neuromuscular facilitation.

4.2 Kabat diagonal movements of upper and lower limbs.

## TEACHING METHOD

### **DIRECTED ACTIVITIES**

- **ICT-supported master classes** will provide the student with the theoretical bases on assessment methods and basic treatment techniques in neurological physiotherapy.  
Estimated time: 32,5 hours.
- **Practical lessons** where the teacher will present, with the help of a model, the different techniques, relating them to clinical cases. The lessons will offer visual and computer-based support.  
Estimated time: 9,5 hours.
- **Journal Club:** Review and critical analysis of an article on current physiotherapy trends that will be worked in groups in class, according to the criteria established by the teacher in charge.  
Estimated time: 3 hours.
- **Presentation and resolution of clinical cases.** Different clinical cases will be presented for which the student will have to put the theoretical knowledge into rehabilitation practice.  
Estimated time: 1.5 hours.

### **SUPERVISED ACTIVITIES**

- **Practical activities**, under the supervision of the teacher, to apply the different techniques presented.  
Estimated time: 21 hours.
- **Group work** Analysis of a clinical case in group and defend it in an oral presentation  
Estimated time: 9 hours.

### **AUTONOMOUS ACTIVITIES**

- Prepare a presentation on a scientific article, based on a critical analysis, which will be presented at the Journal Club.  
Estimated time: 15 hours.
- Complete a questionnaire about a chapter of a book on neuroscience.  
Estimated time: 5 hours.
- **Autonomous work** of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.  
Estimated time: 54 hours.

## ASSESSMENT METHOD

The unit will be assessed by means of:

- The knowledge related to every block the unit is divided into will be assessed through some written tests, which will amount to 40% of the total mark.
- The manual skills when applying the different techniques as well as when adapting a specific technique/manoeuvre to a given situation will be assessed through oral practical tests that account for 40% of the total mark.
- Group work (resolution of a clinical case) that accounts for 10% of the total mark.
- Paper on a work of the bibliography with 5% of the total mark.
- The Journal Club amounts to 5% of the total mark.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- It is compulsory to hand in and pass all the papers, fulfilling the criteria established by the teacher.
- Attendance at 100% of practical classes (justified absences will allow the student to miss up to 20% of all the practical classes).
- Get a minimum final mark of 5.

Rules concerning internal practical lessons:

Please, check the school's Rules of Internal Practical lessons.

Final evaluation period: from 04/06/2018 to 18/06/2018.

Resit examination period: from 19/06/2018 to 29/06/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

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## MATERIAL/BASIC RECOMMENDED AND REQUIRED READINGS

Books						
Author	Year	Title	City	Publisher	Description/ Comment	
<b>PHYSIOTHERAPY IN NEUROLOGY</b>						
Butler, D	2002	Movilización del sistema nervioso	Barcelona	Paidotribo	Obra de consulta	
<b>PHYSIOTHERAPY IN NEUROLOGY</b>						
Carr J, Shepherd R	2004	Rehabilitación de pacientes en el ictus	Madrid	Elsevier	Obra de consulta	
<b>PHYSIOTHERAPY PNS</b>						
Dike, E	1981	Thérapie Manuelle des zones réflexes du tissu conjunctif	Francia	Librairie Maloine S.A.	Obra de consulta	
<b>PHYSIOTHERAPY IN NEUROLOGY, THE PERFETTI METHOD</b>						
Kandel E, Schwartz J, Jessell T	2001	Principios de neurociencia	Madrid	McGraw-Hill Interamericana	Obra de referència	
<b>PHYSIOTHERAPY PNS</b>						
Laso, F	1990	Directrices para el diagnóstico diferencial	Madrid	Ediciones Doyma	Obra de consulta	
<b>PHYSIOTHERAPY PNS</b>						
Netter, F		The Ciba Collection of medical illustrations	USA	CIBA	Obra de consulta	
<b>PHYSIOTHERAPY IN NEUROLOGY</b>						
Purves D et al	2001	Invitación a la neurociencia	Buenos Aires	Panamericana	Obra bàsica	
<b>THE PERFETTI METHOD</b>						
Perfetti, C	1999	El ejercicio Terapéutico Cognoscitivo para la reeducación motora del hemipléjico adulto	Barcelona	EDIKAMED	Obra de referència	
<b>THE PERFETTI METHOD</b>						
Perfetti, C	1992	Esercizi per una memoria riabilitativa	Italia	Idelson-Gnocchi	Obra de consulta	
<b>THE PERFETTI METHOD</b>						
Perfetti, C	1992	La logica dell'esercizio	Italia	Idelson-Gnocchi	Obra de consulta	
<b>THE PERFETTI METHOD</b>						
Ramachandram, V	1999	Fantasma en el cerebro	Madrid	Debate pensamiento	Obra de consulta	
<b>PHYSIOTHERAPY IN NEUROLOGY, PHYSIOTHERAPY PNS</b>						
Shacklock, M	2007	Neurodinámica clínica	Madrid	Elsevier	Obra de consulta	
<b>PHYSIOTHERAPY PNS</b>						
Sinmonet, J		Encyclopédie Médico-Chirurgicales	Madrid	Praxis Medica	Obra de consulta	
<b>PHYSIOTHERAPY IN NEUROLOGY</b>						
Stokes, M	2006	Fisioterapia en la rehabilitación neurologica	Madrid	Elsevier	Obra bàsica.	
<b>PHYSIOTHERAPY IN NEUROLOGY</b>						
Umphered D	2007	Neurological rehabilitation	St.Louis, Missouri	Elsevier	Obra de referència	
<b>KABAT METHOD</b>						
Voss D.E	1987	Facilitación Neuromuscular Propioceptiva	Buenos Aires	Panamerica-na	Obra de consulta.	

## GENERAL INFORMATION

Course unit		<b>LEGISLATION, PUBLIC HEALTH, HEALTH ADMINISTRATION AND ETHICS.</b>					
ECTS	6.00	Type of subject	Compulsory	Academic year	2017-2018		
Delivered		<b>SEMESTRALLY</b>	Term / year		<b>2 / 2</b>		
Lecturers		<b>Dr. Jordi Esquirol Caussa</b> <b>Mr. Jaume Pujadas Rosich</b>					
Language of instruction		<b>CATALAN / SPANISH</b>					
Admission requirements		-----					

## THE COURSE UNIT WITHIN THE CURRICULUM

- Course contents: Legislation, Public health, and Health administration.
- A health professional is a person who is committed to society and whose task goes beyond the benefit of a particular individual; the repercussions of any health action are included and affect the whole society. An important part of the knowledge of a health professional involves the knowledge of what surrounds him/her and the knowledge of how that society is organised.
- The knowledge of the history, legal framework, and organisation of the health system in which the professional has to work is basic in order to carry out his/her tasks consistently with the expectations that society has. Likewise, other concepts need to be well established and taken into account by any health professional: equality and dignity of all human beings, respect for a person's independence, justice, charity, non-maleficence.
- The student will be introduced to legal and ethical aspects and to the organisation of old and current health systems. With this course unit, the student will be able to understand the environment in which the health professional works, which involves current philosophical, historical, legal, and organisational aspects.
- With this course the student will learn about:
  - The history of health professions and their evolution up to the present time.
  - The concepts of person, human dignity, and the main concepts of current principalist bioethics, as well as codes of practice and the need for their existence and application.
  - The general concepts of ethics and legislation, reflecting on the principles and values underlying human behaviour and professional practice.
  - The rights of people from an ethical and legal perspective.
  - Concepts of professional ethics and codes of practice in the current legislative framework.
  - Bioethics: its principles and methodologies. Some ethical dilemmas occurring in our everyday practice will be analysed.
  - The legislative environment of the country and the legal aspects of our profession, by means of the rules that govern health professions.
  - The organization of health institutions and the public health department in our country. Comparing our health service with those of other nearby countries.
  - Social functions and how the public health service is organised in our country, its methods and working systems.

## COMPETENCES

Specific competences	<p><b>E14.</b> Take part in the areas of health promotion, prevention, protection, and recovery.</p> <p><b>E16.</b> Incorporate the ethical and legal principles of the profession into professional culture.</p> <p><b>E19.</b> Develop planning, management, and control activities in healthcare units providing physiotherapy care and their relationship with other health services.</p> <p><b>E20.</b> Apply the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated criteria</p>
Transversal competences	<p><b>T7.</b> Team work.</p> <p><b>T9.</b> Develop critical thinking.</p> <p><b>T10.</b> Identify, analyse and solve ethical problems in complex situations.</p> <p><b>T14.</b> Demonstrate sensitivity to environmental issues.</p>
Generic competences	<b>G3.</b> Respect diversity and plurality of ideas, people, and situations.

## OBJECTIUS FORMATIUS

**E14.** Take part in the areas of health promotion, prevention, protection, and recovery.

**Learning outcomes:**

**E14.3.** Describe the basic concepts of epidemiology.

**Learning objectives:**

**E14.3.1.** Define the concept of health promotion.

**E14.3.2.** Define the concept of health protection.

**E14.3.3.** Define the concept of disease prevention.

**E14.3.4.** Define the concept of health recovery and social reintegration.

**E14.4.** Explain the bases ruling health education.

**Learning outcomes:**

**E14.4.1.** Formulate the methodology for designing the actions on health education

**E14.5.** Explain the factors related to health and the problems related to physiotherapy in the fields of primary care, specialised care, and occupational health.

**Learning objectives:**

**E14.5.1.** Explain the determinants of health and their influence on human health.

**E14.5.2.** Interpret the concept of DALY and its importance in the estimation of burden of disease.

**E14.6.** Define the fundamental concepts of health.

**Learning objectives:**

**E14.6.1.** Define the concepts of health and disease.

**E14.6.2.** Define the concept of quality of life related to health.

**E14.6.3.** Identify the stages in the natural history of disease.

**E14.7.** Describe the role of the physiotherapist in the health system.

**Learning objectives:**

**E14.7.1.** Explain the role of the physiotherapist in primary health care.

**E14.7.2.** Explain the role of the physiotherapist in specialist health care.

**E14.8.** Promote healthy lifestyle habits through health education.

**Learning objectives:**

**E14.8.1.** Describe the usefulness of the actions on health education.

**E14.8.2.** Design health education campaigns for specific groups and communities.

**E16.** Incorporate the ethical and legal principles of the profession into professional culture.

**Learning outcomes:**

**E16.2.** Interpret and describe the ethical, legal, and professional conditions that make up physiotherapy practice.

**Learning objectives:**

**E16.2.1.** Define and enact health legislation in the field of physiotherapy.

**E16.2.2.** Assess civil and criminal responsibility in professional practice.

**E16.2.3.** Present the basic regulations in the prevention of environmental and occupational risks (safety at work).

**E16.3.** Explain professional ethics.

**Learning objectives:**

**E16.3.1.** Interpret the importance of professional ethics and the obligation of their observance.

**E16.4.** Describe the legal norms of the professional field in a socially changing context.

**Learning objectives:**

**E16.4.1.** Describe and distinguish basic legal concepts.

**E16.4.2.** Apply the specific norms for the promotion of personal autonomy.

**E16.4.3.** Use the current norms for the care of people in situation of dependence.

**E16.4.3.** Describe the specific tax system applicable to professional physiotherapists.

**E19.** Develop planning, management, and control activities in healthcare units providing physiotherapy care and their relationship with other health services.

**Learning outcomes:**

**E19.1.** Analyse the Spanish public health systems and those aspects related to the management of healthcare services, particularly those in which physiotherapy plays a part.

**Learning objectives:**

**E19.1.1.** Recognise the basic typology of the public healthcare systems in western countries.

**E19.1.2.** Describe the running of the public healthcare system in Spain.

**E19.1.3.** Recognise the characteristics of the Catalan healthcare system.

**E19.2.** Explain those aspects related to the management of healthcare services.

**Learning objectives:**

**E19.2.1.** Estimate the burden of disease in different populations.

**E19.2.2.** Estimate the disability adjusted life years (DALY) in a specific situation of poor health.

**E19.3.** Explain the management processes in a physiotherapy service or unit.

**Learning objectives:**

**E19.3.1.** Describe the internal organization of a physiotherapy centre, distinguishing health care personnel from clerical and support personnel.

**E19.3.2.** Explain the tax obligations of the staff in a physiotherapy centre.

**E19.3.3.** Analyse the application of tax obligation norms of physiotherapy centres.

**E20.** Apply the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated criteria.

**Learning outcomes:**

**E20.1.** Describe the management processes and explain the quality guarantee mechanisms in the practice of physiotherapy, according to recognised and validated quality criteria, indicators, and standards.

**Learning objectives:**

**E20.1.1.** Interpret the basic regulations of quality management and prevention of environmental and occupational risks (safety at work).

**T7.** Team work.

**Learning objectives:**

**T7.1.** Accept and comply with group rules, collaborate in the definition, organization, and distribution of group work.

**T9.** Develop critical thinking.

**Learning objectives:**

**T9.1.** Analyse the different legal consequences derived from professional behaviour in the field of criminal and civil liability.

**T10.** Identify, analyse and solve ethical problems in complex situations.

**Learning objectives:**

**T10.1.** identify, analyse, and propose solutions to some ethical problems presented in class.

**T14.** Demonstrate sensitivity to environmental issues.

**Learning objectives:**

**T14.1.** Propose improvements in aspects that have an impact on the environment in physiotherapy centres.

**G3.** Respect diversity and plurality of ideas, people, and situations

**Learning objectives:**

**G3.1.** Participate in sessions of bioethical debates respecting the other participants' turns to speak, diversity of ideas and conscience.

## CONTENTS

### Module I: Healthcare administration

1. 1.1. History of healthcare professions
2. Medicine and healthcare
3. Primary healthcare
4. The physiotherapist and team work

### Module II: Legislation

1. Basic legal concepts
2. Development of the right to the protection of health
3. The dependency law
4. Occupational health and environment in health centres
5. The law and the practice of physiotherapy

### Module III: Public health

1. Demography and structure of the population
2. Concepts of health, disease, and quality of life
3. Public health
4. Preventive medicine
5. Communication of health-related contents

### Module IV: Bioethics

1. Concepts of morals and ethics
2. Human rights and dignity
3. Principalist bioethics
4. Professional ethics: the codes of practice of health professions

## TEACHING METHOD

### **DIRECTED ACTIVITIES**

- ITC-supported theoretical lessons that will provide the student with the theoretical basis on which the theoretical knowledge of the subject is based.
- ITC- supported presentations, given by the teacher, on problems of ethical conflicts.
- Time: 52.5 hours.
- Distribution:
  - Directed activities Module I: 9 hours.
  - Directed activities Module II: 18 hours.
  - Directed activities Module III: 16.5 hours.
  - Directed activities Module IV: 9 hours

### **SUPERVISED ACTIVITIES**

- Problem solving in class: solving problems of ethical conflicts, as well as practical seminars on historical medical tools, which can be done individually or in group under the teacher's supervision.
- Time: 7.5 hours.
- Distribution:
  - Supervised activities Module I: 3 hours.
  - Supervised activities Module III: 1.5 hours.
  - Supervised activities Module IV: 3 hours.

### **AUTONOMOUS ACTIVITIES**

- Writing a paper in group on some topics derived from applied bioethics problems.
  - Time: 30 hours.
  - Distribution:
    - Autonomous activities Module I: 15 hours.
    - Autonomous activities Module IV: 15 hours.
- Autonomous work of individual study to prepare exams, organise notes/materials, tutorials: individually or in group.
- Time: 58 hours.

## ASSESSMENT METHOD

The assessment method will include:

1. The theoretical and practical knowledge will be assessed through written tests, which will amount to 70% of the final mark.
2. The papers will account for the remaining 30% and this percentage will be divided into:
  - 20%: the papers and activities of the practical lessons, which must be handed in at least two weeks before the day of the exam.
  - 10%: the continuous assessment exercises, oral presentations and exercises done in class.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Get a minimum final mark of 5.

Final evaluation period: from 04/06/2018 to 18/06/2018.

Resit examination period: from 19/06/2018 to 29/06/2018.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

 escoles universitàries <b>gimbernat</b> i Tomàs Cerdà <small>ADSCRITA A LA UMB</small>	<b>PHTHSIOTHERAPY (EHEA DEGREE)</b> <b>COURSE CATALOGUE</b>	<b>EUIF GIMBERNAT</b> Fisioteràpia
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## MATERIALS/BASIC RECOMMENDED AND REQUIRED READINGS

BOOKS					
Author	Year	Title	City	Publisher	Description/comment
Frutos J., Arroyo M.A.	2006	Salud Pública y Epidemiología.	Madrid	Ed. Díaz de Santos	
Piérola Gil G et al.	2002	Medicina Preventiva y Salud Pública. 10ª ed.	Barcelona	ed. Masson	
Diego Gracia	2008	Fundamentos de Bioética	Madrid	Ed. Triacastela	
D. Larios	2007	Marco jurídico de las profesiones sanitarias	Madrid	Ed. Lex Nova	
Latorre A.	2000	Introducción al derecho	Madrid	Alianza Editorial	

WEB PAGES			
Title	Description	URL	
Bioética en la web		<a href="http://www.bioeticaweb.com">http://www.bioeticaweb.com</a>	

## GENERAL INFORMATION

Course unit		<b>PRACTICUM - II</b>			
ECTS	6.00	Type of course unit	Compulsory	Academic year	2017-2018
Delivered		<b>SEMESTRALLY</b>		Term / year	<b>1 / 2</b>
Lecturers		Ms Yolanda Sánchez Retamero Ms Melania Masó Nuñez Ms Diana Muñoz Puñet			
Language of instruction		<b>CATALAN</b>			
Admission requirements		<b>BASIC PHYSIOTHERAPY OF THE LOCOMOTOR SYSTEM – I</b> <b>BASIC PHYSIOTHERAPY OF THE LOCOMOTOR SYSTEM – II</b>			

## THE COURSE UNIT WITHIN THE CURRICULUM

- Contents: Guided training.
- This course unit aims to consolidate the bases of basic physiotherapy of the locomotor system and integrate all the knowledge, abilities, skills, attitudes, and values acquired in all the subjects done so far, under the guidance of qualified physiotherapists. All those professional competences necessary to prepare the student to give effective physiotherapy care and comprehensive care to patients/users will be developed.

## COMPETENCES

Specific competences	<p><b>E4.</b> Demonstrate knowledge of the physiotherapy methods, procedures, and actions that contribute to health promotion and maintenance.</p> <p><b>E5.</b> Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.</p> <p><b>E6.</b> Write and fill in physiotherapy registers.</p> <p><b>E7.</b> Assess the patient's functional state, taking into account physical, psychological, and social aspects.</p> <p><b>E8.</b> Make the physiotherapy diagnosis according to the norms and the internationally recognised validation instruments.</p> <p><b>E9.</b> Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.</p> <p><b>E11.</b> Assess the evolution of the results obtained in the treatment in relation to the final goals.</p>
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	<b>E12.</b> Write discharge reports when the objectives have been achieved.
Transversal competences	<p><b>T3.</b> Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing.</p> <p><b>T5.</b> Problem solving.</p> <p><b>T7.</b> Team work.</p> <p><b>T11.</b> Show initiative and resourcefulness.</p> <p><b>T12.</b> Identify and deal with changes easily.</p>
Generic competences	<b>G2.</b> Develop strategies of autonomous learning.

## LEARNING OBJECTIVES

**E4.** Demonstrate knowledge of the physiotherapy methods, procedures, and actions that contribute to health promotion and maintenance.

**Learning outcomes:**

**E4.1.** Design, teach, and advise about the different prevention methods for functional impairments and particularly those related to postural hygiene, mobility loss, and algid acute stages.

**Learning objectives:**

**E4.1.1.** Recommend prevention guidelines for patients with mild affections of the locomotor system.

**E5.** Integrate, through clinical experience, ethical and professional values, the knowledge, skills, and attitudes characteristic in physiotherapy to solve specific clinical cases in hospital, out-of-hospital, primary and community health care environments.

**Learning outcomes:**

**E5.5.** Solve clinical cases susceptible of physiotherapy treatment in any clinical specialty.

**Learning objectives:**

**E5.5.1.** Effectively apply the different physiotherapy techniques to patients with mild impairments of the locomotor system.

**E5.5.2.** Solve a clinical case of a patient, from the centre where the student has his/her training, with a mild impairment of the locomotor system and write a monitoring report.

**E6.** Write and fill in physiotherapy registers.

**Learning outcomes:**

**E6.3.** Record all the steps taken from the moment the patient/user is admitted to the moment he/she is discharged in an adequate and effective way according to each clinical specialty.

**Learning objectives:**

**E6.3.1.** Interpret physiotherapy records of patients with mild impairments of the locomotor system

**E7.** Assess the patient's functional state, taking into account physical, psychological, and social aspects.

**Learning outcomes:**

**E7.12.** Follow the adequate physiotherapy validation procedures in order to determine the level of affection and its possible functional impact for the patients/users the student takes care of during the training.

**Learning objectives:**

**E7.12.1.** Use appropriately the specific assessment tools on patients with mild impairments of the locomotor system.

**E8.** Make the physiotherapy diagnosis according to the norms and the internationally recognised validation instruments.

**Learning outcomes:**

**E8.9.** Establish a physiotherapy diagnostic hypothesis.

**Learning objectives:**

**E8.9.1.** Identify the deficiencies, limitations in everyday activities, participation restrictions, and contextual factors of patients with mild impairments of the locomotor system

**E9.** Develop a physiotherapy intervention plan according to criteria of adequacy, validity, and efficiency.

**Learning outcomes:**

**E9.17.** Define the general and specific objectives for the application of the physiotherapy treatment.

**Learning objectives:**

**E9.17.1.** Propose the treatment objectives in mild impairments of the locomotor system.

**E9.18.** Establish treatment priorities according to the problems detected.

**Learning objectives:**

**E9.18.1.** Classify the short-term and long-term goals for patients with mild impairments of the locomotor system.

**E9.20.** Anticipate the necessary material and equipment.

**Learning objectives:**

**E9.20.1.** Anticipate the necessary material and equipment for the treatment of mild impairments of the locomotor system.

**E11.** Assess the evolution of the results obtained in the treatment in relation to the final goals.

**Learning outcomes:**

**E11.1.** Assess the results and their link with the final goals, through real cases in the different clinical specialties.

**Learning objectives:**

**E11.1.1.** Compare the results and the predetermined goals in the treatment of mild impairments of the locomotor system.

**E12.** Write discharge reports when the objectives have been achieved.

**Learning outcomes:**

**E12.2.** Make a physiotherapy report that includes all the necessary information so that it is a valid communication tool for users and/or professionals.

**Learning objectives:**

**E12.2.1.** Interpret discharge reports of patients with mild impairments of the locomotor system.

**T3.** Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing.

**Learning objectives:**

**T3.1.** Use well-structured information.

**T3.2.** Use patient-friendly language.

**T5.** Problem solving.

**Learning objectives:**

**T5.1.** Find the adequate tools for the problem to be solved.

**T7. Team work.**

**Learning objectives:**

- T7.1.** Fit into the physiotherapy team.

**T11. Show initiative and resourcefulness.**

**Learning objectives:**

- T11.1.** Show initiative when facing difficulties.

**T12. Identify and deal with changes easily.**

**Learning objectives:**

- T12.1.** be able to flexibly interpret your environment.

**Generic competence:**

**G2.** Develop strategies of autonomous learning.

This competence is developed by working competences “**T3.** Be able to communicate in a fluent, coherent, and adequate way according to the established norms, both orally and in writing”, “**T5.** Problem solving”, “**T7.** Team work” and “**T12.** Identify and deal with changes easily”.

## CONTENTS

The Practicum aims to integrate all the knowledge, abilities, skills, attitudes, and values acquired in all the subjects done so far, under the guidance of qualified physiotherapists. All those professional competences necessary to prepare the student to give effective physiotherapy care and comprehensive care to patients/users will be developed.

## TEACHING METHOD

**TRAINING**

- The student will assess the patients, make the physiotherapy diagnosis, create a plan of action and apply it, and evaluate the results.  
Estimated time: 105 hours.

**INFORMATIVE SESSIONS**

- The student will be informed about how to do the different training activities.  
Estimated time: 7,5 hours.

**PAPER WRITING**

- Write a monitoring report of one or several patients.  
Estimated time: 30 hours.

**SELF-EVALUATION**

- Write a self-evaluation report.  
Estimated time: 4,5 hours.

**EVALUATION BY THE CENTRE AND TUTOR**

- Fill in an evaluation form about the centre and tutor.  
Estimated time: 3 hours.

## ASSESSMENT METHOD

The practicum commission will assess:

- The report given by the tutor, which will account for 55% of the final mark.
- The self-evaluation form, which will account for 5% of the final mark.
- The practicum report, which will account for 10% of the final mark.
- The monitoring reports, which will account for 30% of the final mark.

In order to pass the course, the following conditions have to be met:

- Pass each section and part of the unit with a minimum mark of 5.
- Get a minimum final mark of 5.

Score review process: please, check the school's Assessment Norms (Chapter 10 and annex-I).

A student will be "non-assessed" when he/she has not undertaken the required assessment tasks or has not done a compulsory activity.

## MATERIAL/ BASIC RECOMMENDED AND REQUIRED READINGS

Web pages			
Title	Description	URL	
EscalexFisioterapia.pdf	Escala de valoració i qüestionaris més emprats a Fisioteràpia	Intranet de l'assignatura	