

**Physiotherapeutic Treatment in Neurology**

Code: 102998  
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	4	0

**Contact**

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**Use of languages**

Principal working language: spanish (spa)  
Some groups entirely in English: Yes  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: Yes

**Teachers**

Georgina Martinez Fernandez  
Bernat Planas Pascual

**Prerequisites**

The students must have knowledge of the anatomy and physiology of the nervous system in order to be able to detect illnesses and the corresponding therapeutical measures.

It's recommended having passed the physiotherapy assignment in neurology I and II.

**Objectives and Contextualisation**

This subject aims to establish the basis of the physiotherapeutic treatment in advanced neurology,

as well as to deepen the complementary techniques applied in neurorehabilitation.

Knowing and properly applying the different techniques of advanced neurological physiotherapy in real patients

is essential to prepare the student adequately to cope with the later development of his professional career

in the field of neurological pathologies.

## **Skills**

- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
- Develop independent learning strategies
- Display critical reasoning skills.
- Display knowledge of the morphology, physiology, pathology and conduct of both healthy and sick people, in the natural and social environment.
- Display knowledge of the physiotherapy methods, procedures and interventions in clinical therapeutics.
- Evaluate the functional state of the patient, considering the physical, psychological and social aspects.
- Integrate, through clinical experience, the ethical and professional values, knowledge, skills and attitudes of physiotherapy, in order to resolve specific clinical cases in the hospital and non-hospital environments, and primary and community care.
- Make a physiotherapy diagnosis applying internationally recognised norms and validation instruments.
- Solve problems.
- Work in teams.

## **Learning outcomes**

1. Apply advanced physiotherapy methods and techniques to neurological pathologies..
2. Define the general and specific objectives of advanced physiotherapy treatment in neurological pathologies.
3. Describe and apply advanced evaluation procedures in physiotherapy in order to determine the degree of damage to the nervous system and possible functional repercussions.
4. Describe the circumstances that condition priorities in advanced physiotherapy treatment for neurological pathologies.
5. Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
6. Develop independent learning strategies
7. Display critical reasoning skills.
8. Enumerate the different types of material and equipment used in advanced physiotherapy treatment for neurological pathologies.
9. Enumerate the medico-surgical treatments, mainly in the area of physiotherapy and orthopaedics, that are used in neurological diseases.
10. Establish a diagnostic physiotherapy hypothesis based on complex clinical cases in neurological pathologies.
11. Explain in detail the physiopathology of neurological diseases and identify the symptoms that appear during the process.
12. Solve complex clinical cases in the field of neurology.
13. Solve problems.
14. Work in teams.

## Content

### THEORETICAL-PRACTICAL CONTENT:

All contents will be taught by Carina Salgueiro and the assistant professor.

The teacher Bernat Planas and Georgina Martinez will make a specific collaboration in this subject.

- Treatment of postural control and balance.
- Scientific basis of motor control and motor learning.
- Early intervention and neurological critical patient.
- Stability (core stability) and mobility in neurological patients.
- Approach to the lower limb.
- Correction of walking patterns.
- Treatment and functional approach of the upper limb.
- Treatment of sensory disorders and neuropathic pain.
- Other approaches: virtual reality, mirror therapy, techniques of mobilization of the nervous system in patients with central injury, whole body vibration (WBV) in neurological patients.

## Methodology

There are theoretical and practical classes.

## Activities

Title	Hours	ECTS	Learning outcomes
<b>Type: Directed</b>			
PRACTICAL LABORATORY WORK	30	1.2	12, 1, 7, 13, 14
THEORY	11	0.44	12, 1, 2, 3, 6, 5, 11, 7, 13, 14
<b>Type: Supervised</b>			
WORK PRESENTATIONS	1	0.04	12, 1, 2, 3, 4, 8, 9, 10, 11, 7, 14
<b>Type: Autonomous</b>			
SELF STUDY	78	3.12	12, 1, 2, 4, 6, 5, 8, 7

## Evaluation

### EVALUATION SYSTEM:

Theoretical exam:

Test: 30 questions with 4 possible options out of which only one is correct. Each correct answer is worth 1 point and for each wrong answer 0,25 points are deducted.

Written part: 2 topics/questions to elaborate.

The student needs to achieve at least a 5 to pass.

### Final exam classification [NE] (30% of the final classification)

Practical exam:

The practical exam consists of both an oral and a practical examination, and shall determine (a) the students' manual ability to apply the different techniques and (b) the adaption of the chosen technique in the provided context.

### Practical exam classification [NP] (50% of the final classification)

Written assignment:

### Classification of the assignment [NT] (20% of the final classification)

All available exams have to be passed to pass the whole course.

$$([NE] \cdot 0,30) + ([NP] \cdot 0,50) + ([NT] \cdot 0,20) = \text{FINAL CLASSIFICATION}$$

In case of failing only one of the exams, the student may take an retest.

In case of not providing the necessary evaluation requirements, that means by not submitting and presenting the work and/or not attending the final exam of the class, the whole course will be evaluated as "failed".

For students of exchange programs the same evaluation criteria apply as regularfor UAB students.

## Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Practical exam.	50%	1	0.04	12, 1, 2, 3, 4, 5, 8, 10, 13
Theoretical exam.	30%	2	0.08	12, 1, 2, 3, 4, 5, 8, 9, 10, 11, 7
Written assignment.	20%	1	0.04	2, 3, 4, 6, 5, 8, 9, 11, 7, 13, 14

## Bibliography

- Bisbe, M., Santoyo, C., Segarra, V. Fisioterapia en neurología. Procedimientos para restablecer la capacidad funcional. Madrid: Panamericana, 2012

- Burke-Doe A. Jobst E. Physical therapy case files: neurological rehabilitation. New York: McGraw-Hill; 2014
- Cano, R., Collado, S. Neurorrehabilitación. Métodos específicos de valoración y tratamiento. Madrid: Panamericana, 2012
- Carr J, Shepherd R. Neurological rehabilitation: optimizing motor performance. 2nd ed. Edimburgh: Churchill Livingstone; 2010
- Paeth B. Experiencias con el Concepto Bobath: fundamentos, tratamiento y casos. 2nd ed. Madrid: Editorial Médica Panamericana; 2007
- Purves D. Neurociencia . 5ª ed. Madrid: Editorial Médica Panamericana; 2016
- Raine S, Meadows L, Lynch-Ellerington M. Bobath Concept Theory and Clinical Practice in Neurological Rehabilitation. Oxford: Wiley-Blackwell;2009
- Shacklok, M. Neurodinámica clínica. Madrid: Elsevier, 2007
- Spicher, C. Handbook of somatosensory rehabilitation. Montpellier: Sauramps Medicals, 2008
- Stokes, M. Fisioterapia en la rehabilitación neurológica. 2ª ed. Madrid: Elsevier, 2006
- Shumway-Cook A, Woollacott MH. Motor Control: Translating Research into Clinical Practice. 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2016
- Umphred DA. Neurological rehabilitation. Elsevier. Saint Louis, 2007