

**Physiotherapy in Neurology I**

Code: 102988  
ECTS Credits: 6

| Degree                | Type | Year | Semester |
|-----------------------|------|------|----------|
| 2500892 Physiotherapy | OB   | 2    | 1        |

**Contact**

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**Use of Languages**

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

**Teachers**

Sandra Alonso Marsol

**Prerequisites**

To have acquired the necessary knowledge of physiology and anatomy to interpret the basic concepts of diseases of the nervous system.

**Objectives and Contextualisation**

To recognize and interpret the main signs and symptoms of diseases of the nervous system that may have implications in the evaluation, prognosis and management of the physiotherapist.

**Competences**

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Apply quality-assurance mechanisms in physiotherapy practice, in accordance with the recognised and validated criteria.
- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- Display critical reasoning skills.
- 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.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Make the most correct decisions in given situations.
- Participate in drawing up physiotherapy protocols on the basis of scientific evidence, and promote professional activities that facilitate physiotherapy research.

- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Work in teams.

## Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Apply advanced evaluation procedures in physiotherapy in order to determine the degree of damage to the nervous system and possible functional repercussions.
3. Apply the basic physiotherapy methods, procedures and interventions to nervous system conditions.
4. Communicate using language that is not sexist.
5. Consider how gender stereotypes and roles impinge on the exercise of the profession.
6. Critically analyse the principles, values and procedures that govern the exercise of the profession.
7. Describe and analyse the evidence-based physiotherapy protocols for nervous system disorders.
8. Describe and analyse the quality-assurance mechanisms of physiotherapy in treatments for the nervous system.
9. Describe the bases for assessing nervous system conditions.
10. Design therapeutic exercises and activities for neurological diseases.
11. Display critical reasoning skills.
12. Establish diagnostic physiotherapy hypotheses through clinical cases with disorders of the nervous system.
13. Explain the explicit or implicit code of practice of one's own area of knowledge.
14. Identify situations in which a change or improvement is needed.
15. Identify the principal forms of sex- or gender-based inequality present in society.
16. Identify the social, economic and environmental implications of academic and professional activities within one's own area of knowledge.
17. Make the most correct decisions in given situations.
18. Propose new methods or well-founded alternative solutions.
19. Propose new ways to measure success or failure when implementing innovative proposals or ideas.
20. Propose projects and actions that incorporate the gender perspective.
21. Propose viable projects and actions to boost social, economic and environmental benefits.
22. Propose ways to evaluate projects and actions for improving sustainability.
23. Use physiotherapy to treat clinical cases involving neurological conditions.
24. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.
25. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.
26. Work in teams.

## Content

1. Anatomical and functional summary of the nervous system (Dra E. Duarte (ED))
2. Clinical history in neurology: anamnesis and main symptoms of the pathology of the nervous system (ED)
3. Cranial nerves: visual impairments, facial paralysis and swallowing disorders (Dra Anna Guillén)
4. Functional assessment scales in neurological rehabilitation (Dra Cindry Ramirez))
5. Neurological exam: mental state, sensitivity, and reflexes (ED)
6. Neurological exam: motor exploration, balance and gait (ED)
7. Complementary exams in neurological diagnosis: neuroimaging (Dr Jordi Jimenez (JJ))
8. Traumatic brain injury. Concept, clinical manifestations, evolution and global management (JJ)
9. Muscle tone disorders: spasticity (ED)
10. Neuropathic pain. Concept and global management (ED)
11. Vascular cerebral ischemic diseases. Concept, clinical manifestations, evolution and global management (JJ)
12. Hemorrhagic cerebral vascular diseases. Concept, clinical manifestations, evolution and global management (JJ)

13. Infantile Cerebral palsy. Spina bifida. Concept, clinical manifestations, evolution and management (ED)
14. Guillain-Barré syndrome. Concept, clinical manifestations, evolution and global management. (ED)
15. Parkinson's disease and other extrapyramidal disorders. Concept, clinical manifestations, evolution and global management. I (JJ)
16. Ataxic disorders (JJ)
17. Acute meningitis and encephalitis. (ED)
18. Communication and speech disorders: aphasia and dysarthria. Speech therapy (Dra Roser Boza)
19. Multiple sclerosis. Concept, clinical manifestations, evolution and global management. (JJ)
20. Amyotrophic lateral sclerosis and other motor neuron diseases. Concept, clinical manifestations, evolution and global management (JJ)
21. Psychiatric disorders: depression, bipolar disorder, anxiety and others (ED)
22. Pharmacology in neurology (ED)
23. Alzheimer's disease and other dementias (JJ)
24. Seizures and epilepsy (JJ)
25. Traumatic spinal cord injury. Concept, clinical manifestations, evolution and global management. (JJ)
26. Diseases of the spinal cord (JJ)
27. Nervous system tumors (JJ)
28. Craniofacial headaches and headaches (JJ)
29. Neurological rehabilitation: general principles. Multidisciplinary team. (ED)
30. Neurological rehabilitation: occupational therapy, cognitive therapy and social reintegration. (ED)

## Methodology

Teaching is based in theoretical and practical classes

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Activities

| Title                       | Hours | ECTS | Learning Outcomes |
|-----------------------------|-------|------|-------------------|
| Type: Directed              |       |      |                   |
| CLASSROOM PRACTICES (PAUL)  | 15    | 0.6  | 3, 2, 9, 23, 26   |
| THEORY                      | 30    | 1.2  | 3, 7, 9, 12, 23   |
| Type: Autonomous            |       |      |                   |
| SELF- STUDY                 | 64    | 2.56 | 7, 11             |
| WRITTEN EVALUATION (TOPICS) | 38    | 1.52 | 9, 23             |

## Assessment

1-Written evaluation (tests with multiple choice questions)

-Duration: 1 h

Description of the evaluation test:

Multi answer test with 30 questions, 4 options per question, one correct

Evaluation criteria:

Correct answers: 1

Wrong answers: -0.30

Blank answers: 0

Minimum mark to pass: 5 over 10

Schedule: 01 2022

Percentage on the final grade: 50%

Students must obtain at least a grade of at least 5 in the written evaluation to pass

2-Written evaluation (topics)

-Duration: continuous

Evaluation criteria. Students must submit a written work of c.500 words. Written works will be assessed on:

- . The coherence of the topics order
- . The content closely matches the proposed topic
- . The pertinent balance between the different parts of the work (relationship between the importance of the point to be treated and the space it occupies in the totality of the work)
- . The ability to synthesize:

- o Presents the main points of the work
- o Perform correct clinical reasoning
- o Express thoughts in order (from the simplest to the most complex)

- . The use of bibliographic sources:

- o Adaptation of the sources used with the subject matter
- o Use updated bibliographic sources
- o Bibliographic references are fully described (Vancouver norms or others)

Minimum mark to pass: 5 over 10

Schedule: Sept 2021 - January 2022

Percentage on the final grade: 25%

3-Practical evaluation

-Duration: 2 h

Evaluation criteria: to demonstrate the skills achieved in the neurological evaluation and the classroom practices.

Minimum mark to pass: 5 over 10

Schedule: Nov 2021

Percentage on the final grade: 20%

4- Attendance and active participation in class and seminars

Evaluation criteria: active participation, behavior and interest of the student in the theoretical classes and classroom practices. Only attendance at classroom practices will be taken into account in this section

Schedule: Sept 2021 - January 2022

Percentage on the final grade: 5%

When the final grade of the whole evaluation of the student is  $\geq 4$  and  $< 5$ , the student may request to make a THEORETICAL AND PRACTICAL REASSESSMENT EVALUATION. In this case, if the student pass it, the final grade will be 5.

It will be considered that the student is NOT EVALUABLE when he has not submitted to the written test, whose realization is essential to be evaluated.

## Assessment Activities

| Title                                                             | Weighting | Hours | ECTS | Learning Outcomes                                  |
|-------------------------------------------------------------------|-----------|-------|------|----------------------------------------------------|
| Attendance and active participation in class and seminars         | 5%        | 0     | 0    | 2, 4, 9, 12, 15, 17, 20, 11, 26, 5                 |
| PRACTICAL EVALUATION (skills achieved in neurological evaluation) | 20%       | 2     | 0.08 | 1, 3, 2, 9, 16, 14, 25, 17, 22, 18, 19, 21, 11, 23 |
| Written evaluation (test with multiple choice questions)          | 50%       | 1     | 0.04 | 6, 3, 2, 8, 7, 9, 10, 12, 13, 17, 11, 23, 26, 24   |
| Written evaluation (topics)                                       | 25%       | 0     | 0    | 2, 9, 16, 22, 21, 11, 23, 26                       |

## Bibliography

### Bibliografia específica

- Neurología Zarranz Imitizaldu, J.J.Madrid [etc.] : Elsevier science, DL 2002Bradley: Neurologia

### Bibliografia de consulta

- [Principles of neurologic rehabilitation](#) New York [etc.] : McGraw-Hill, 1997

- [Exploración neurológica fácil](#) Fuller, Geraint Barcelona [etc.] : Elsevier, cop. 2011

- [Neurología Clínica 4e 2v](#)Bradley. Editorial: Elsevier (Año: 2005)

- [Neurología para fisioterapeutas : Cash](#) Buenos Aires [etc.] : Médica panamericana, 1989

- De Jong's THE NEUROLOGIC EXAMINATION. William Campbell. Ed Wolters Kuwer / Lippincott Williams & Wilkins, 2013

### Recursos d'Internet

- Guia de pràctica clínica de l'ictus. Catalunya 2007 (web site). Barcelona: Agència d'Avaluació de Tecnologia i Recerca Mèdiques; 2007 (cited June 18, 2008). Available from: <http://www.gencat.net/salut/depsan/units/sanitat/html/ca/dir491/index.html>.

- Guidelines for adult stroke rehabilitation and recovery: [A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association](#). Winstein, Stein et al. Stroke. [Stroke.2017;48\(2\):e78](#)

## Software

No specific software is required