

Applied Neurological Physiopathology

Code: 102999
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Teachers

Xavier Buxo Masip

External teachers

Almudena Crespo Fresno
Edwin Roger Meza Murillo
Esther Toro Tamargo
Lluïsa Montesinos Magraner
Mar Meléndez Plumed
Maria LLuisa Torrent Bertran
Tània Puignou Santallusia

Prerequisites

Have theoretical knowledge and have acquired the basic practical abilities in the field of Neurological Physiotherapy which will allow the student the interpretation and evaluation of the deficits related to the nervous system pathology.

Knowledge of English that allows the student to carry out bibliographic research and critical reading of scientific papers

Objectives and Contextualisation

This subject intends to deepen into the physiopathology of stroke and related cerebrovascular diseases, traumatic brain injuries, spinal cord injuries, neurodegenerative diseases, Parkinson's disease and other common neurological conditions in healthcare practice.

Knowledge of the physiopathology of these neurological syndromes will allow the diagnosis of physiotherapy, planning, applying and evaluating physiotherapy treatment; necessary to exercise as a physiotherapist in the neurological field.

Have theoretical knowledge and have acquired the basic practical abilities in the field of Neurological Physiotherapy to facilitate the interpretation and assessment of the main signs and symptoms of the nervous system diseases.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- 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.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Solve problems.
- 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 physiotherapy methods and techniques to neurological pathologies..
3. Communicate using language that is not sexist.
4. Consider how gender stereotypes and roles impinge on the exercise of the profession.
5. Critically analyse the principles, values and procedures that govern the exercise of the profession.
6. Define the general and specific objectives of advanced physiotherapy treatment in neurological pathologies.
7. Describe and apply advanced evaluation procedures in physiotherapy in order to determine the degree of damage to the nervous system and possible functional repercussions.
8. Describe the circumstances that condition priorities in advanced physiotherapy treatment for neurological pathologies.
9. Display critical reasoning skills.
10. Enumerate the different types of material and equipment used in advanced physiotherapy treatment for neurological pathologies.
11. Enumerate the medico-surgical treatments, mainly in the area of physiotherapy and orthopaedics, that are used in neurological diseases.
12. Establish a diagnostic physiotherapy hypothesis based on complex clinical cases in neurological pathologies.
13. Explain in detail the physiopathology of neurological diseases and identify the symptoms that appear during the process.
14. Explain the explicit or implicit code of practice of one's own area of knowledge.
15. Identify situations in which a change or improvement is needed.
16. Identify the principal forms of sex- or gender-based inequality present in society.
17. Identify the social, economic and environmental implications of academic and professional activities within one's own area of knowledge.
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. Solve complex clinical cases in the field of neurology.
24. Solve problems.
25. 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.
26. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.
27. Work in teams.

Content

1-Stroke and other cerebrovascular diseases: ischemic and hemorrhagic- (Dra Susana Rodríguez: 31863srg@gmail.com/ Dr Xavier Buxó Massip: xavierbux@gmail.com).

2-Traumatic brain injuries- (Dra Susana Rodríguez 31863srg@gmail.com/ Dr Xavier Buxó Massip: xavierbux@gmail.com).

3-Dysphagia (Tània Puignou Santallusia: taniaps@blanquerna.url.edu).

4- Facial Palsy (María Lluïsa Torrent Bertran: mltorrent@vhebron.net

5-Traumatic spinal cord injury and other spinal injuries. Neurogenic Bladder- (Dra Lluïsa Montesinos Magraner: lmontesi@vhebron.net).

6-Demyelinating Diseases: Multiple Sclerosis- (Dr Roger Meza: rmeza@cem-cat.org).

7-Parkinson's disease and other extrapyramidal syndromes- (Dra Susana Rodríguez 31863srg@gmail.com).

8-Motoneuron diseases: Amyotrophic lateral sclerosis - (Dra Susana Rodríguez 31863srg@gmail.com).

9-Peripheral compression neuropathies - (Dr. Almudena Crespo Fresno: almu365@hotmail.com).

10-Defects of the neural tube: Mielomeningocele- (Dra Mar Meléndez Plumed: mmelende@vhebron.net).

11-Childhood Cerebral Palsy- (Dr. Esther Toro Tamargo: etoro@vhebron.net).

12-Muscle tone disorders: Spasticity- (Dra Susana Rodríguez 31863srg@gmail.com/ Dr Xavier Buxó Massip: xavierbux@gmail.com).

13-New technologies in Neuro-rehabilitation- (Dra Susana Rodríguez: 31863srg@gmail.com).

Methodology

Teaching is based on master classes with bibliography support recommended by the teacher.

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			
ADVANCED CLINICAL SKILL ACTIVITIES (ACSA)	10	0.4	23, 6, 7, 11, 12, 13
CLINICAL CASE SEMINARS (CCS)	6	0.24	23, 2, 6, 7, 8, 10, 12
SPECIALIZED SEMINARS (SS)	5	0.2	23, 2, 6, 7, 8, 10, 12

THEORY (TE)	20	0.8	23, 2, 6, 7, 8, 10, 11, 12, 13
Type: Supervised			
PRESENTATION OF WORK	5	0.2	11, 13, 24, 27
TUTORIAL	5	0.2	24
Type: Autonomous			
PERSONAL STUDY	74	2.96	23, 2, 6, 7, 8, 10, 11, 12, 13
PRESENTATION OF WORK	17	0.68	23, 2, 6, 7, 8, 10, 11, 12, 13
READING ARTICLES	8	0.32	

Assessment

Mid-term exams

There will be 2 mid-term exams that will be:

First mid-term exam

- WRITTEN EVALUATION: (25% of the final grade) Objective essay with restricted questions.
- WRITTEN EVALUATION: (25% of the final grade) through objective tests of selection of items of choice multiple.

Second mid-term exam

- WRITTEN EVALUATION: (25% of the final grade) through objective tests of selection of items of choice multiple.

To pass a minimum score of 5 out of 10 is required in each of the evaluations.

The students who do not get a score of 5 in one or more evaluations should perform a recovery test in the final examen pertaining the evaluation(s) didn't pass.

- DELIVERY OF REPORTS / WORKS WRITTEN (25% of the final grade). Each student will have to complete 1 written work in which the content will be assessed in relation to the proposed topic, the realization of critical reasoning, the resolution of problems based on scientific evidence and the use of updated citations. To pass the continuous assessment, you will need to obtain a mark minimum of 5 out of 10.

The evaluation of the Erasmus students will be carried out in the same way as that of the students. If they want to they may request to submit the report / work in English.

Any student will be considered non-evaluable if he does not do one of the following: Written evaluations or not delivered report

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery of reports: Written report	25%	0	0	5, 1, 23, 3, 6, 8, 10, 12, 13, 14, 17, 16, 15, 26, 22, 18, 19, 20, 21, 9, 27, 4, 25
Written evaluation through objective tests of selection of multiple choice items	50%	0	0	5, 1, 23, 2, 3, 6, 7, 8, 10, 11, 12, 13, 14, 17, 16, 15, 26, 22, 18, 19, 20, 21, 24, 4, 25

Written evaluation: objective essay: restricted questions	25%	0	0	5, 1, 23, 3, 12, 14, 17, 16, 15, 26, 22, 18, 19, 20, 21, 9, 24, 4, 25
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Bibliography

- Codina Puiggros. Tratado de Neurología. Madrid: Editorial Libro del Año; 1996.
- DeLisa. Physical Medicine and Rehabilitation. Principles and Practice. Philadelphia: Lippincott Williams & Wilkins; 2010.
- Maria Stokes. Physical Management in Neurological Rehabilitation. London: Elsevier Mosby; 2004.
- Stein. Stroke Recovery & Rehabilitation. Stein. New York: Demos Medical Publishing; 2009.

Software

No specific software is required