



Information about the subject

Degree: Bachelor of Science Degree in Physiotherapy

Faculty: Faculty of Medicine and Health Sciences

Code: 240203 **Name:** Physiotherapy of the Nervous System

Credits: 6,00 **ECTS Year:** 2 **Semester:** 2

Module: MODULE 2: SPECIFIC

Subject Matter: Specific Methods of Intervention in Physical Therapy **Type:** Compulsory

Field of knowledge: Health Sciences

Department: -

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

MODULE 2: SPECIFIC

Subject Matter	ECTS	Subject	ECTS	Year/semester
Fundamentals of Physical Therapy	6,00	Fundamentals of Physiotherapy	6,00	1/1
Assessment in Physiotherapy	6,00	Assessment in Physiotherapy	6,00	1/2
General Procedures for Intervention in Physiotherapy	12,00	General Procedures of Intervention I	6,00	2/1
		General Procedures of Intervention II	6,00	2/2
Physiotherapy in clinical specialties	6,00	Medical-Surgical Conditions and their Treatments	6,00	2/2
Specific Methods of Intervention in Physical Therapy	30,00	Cardiocirculatory and Respiratory Physiotherapy	6,00	3/1
		Physiotherapy of the Locomotive System I	6,00	2/2
		Physiotherapy of the Locomotive system II	6,00	3/1
		Physiotherapy of the Nervous System	6,00	2/2
		Sports Physiotherapy	6,00	3/1
Kinesitherapy	6,00	Kinesitherapy	6,00	2/1
Legislation, Public Health and Health Administration	12,00	Community Physiotherapy and Public Health	6,00	3/1



Legislation, Public
Health and Health
Administration

Social Morality. Ethics

6,00

4/1

Recommended knowledge

Have adequate knowledge about:

- Neuroanatomy and Neurophysiology
- Assessment in Physiotherapy

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 Knows the foundations of the different pathologies of the Nervous System, as well as the multidisciplinary work in them.
- R2 Distinguishes the different hierarchies and priorities in the health care of patients.
- R3 Knows and distinguishes the different physical and emotional components of the patients, and their relationship with the health-disease process.
- R4 Knows and applies techniques and procedures of assistance and conservative treatment, in diseases of the nervous system.
- R5 Knows and applies techniques and procedures for physiotherapeutic assessment and diagnosis, in diseases of the nervous system.
- R6 Looks for bibliographic information from different sources and knows how to analyze it with a critical and constructive spirit.
- R7 Argues with rational criteria from the work.
- R8 The student is able to write a comprehensible text, organized on topics related to physiotherapy and to work in groups.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students demonstrate knowledge and understanding in an area of study that is at the core of general secondary education, and is often at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.		X		
CB2	Students know how to apply their knowledge to their work or vocation in a professional way and possess the skills usually demonstrated by developing and defending arguments and solving problems within their area of study.			X	
CB3	Students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific or ethical issues.		X		
CB4	Students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences.			X	
CB5	Students develop those learning skills necessary to undertake further studies with a high degree of autonomy.			X	
SPECIFIC		Weighting			
		1	2	3	4
CE1	Students learn human anatomy and physiology, highlighting the dynamic relations between structure and function, especially of the locomotive system and the nervous and cardio-respiratory systems.		X		
CE2	Students identify the physiological and structural changes that can occur as a result of the application of physiotherapy.			X	
CE8	The psychological and social factors that influence the health/disease status of the individual, family and community.		X		



CE9	Students assimilate theories of communication and interpersonal skills.	X		
CE12	The general aspects of pathology of endogenous and exogenous etiology related to physiotherapy of all devices and systems with their medical, surgical, physiotherapeutic and orthopedic treatments.		X	
CE13	The structural, physiological, functional and behavioral changes that occur as a result of the intervention of physiotherapy.			X
CE14	Students identify the theoretical bases of Physiotherapy as a science and profession. The models of action in Physiotherapy. The theoretical bases of the assessments, tests and functional verifications: knowledge of their modalities and techniques as well as the scientific evaluation of their utility and effectiveness. The diagnosis of Physiotherapy. Methodology of the research applied to Physiotherapy.			X
CE15	General physiotherapeutic procedures: Kinesitherapy, Massage and Massage Therapy, Electrotherapy, Magnetic Therapy, Ergotherapy, Hydrotherapy, Balneotherapy, Climatotherapy, Thalassotherapy; Thermotherapy, Cryotherapy, Vibrotherapy, Phototherapy, Pressotherapy, and the derivatives of other physical agents	X		
CE16	Physiotherapeutic Procedures based on specific Methods and Techniques of physiotherapeutic actions to be applied in the different pathologies of all the apparatuses and systems, and in all the specialties of Medicine and Surgery, as well as in the promotion and conservation of the health, and in the prevention of the disease.			X
CE21	Students give proof of the criteria and indicators that guarantee the quality in the provision of the physiotherapy service, through the use of good clinical practice guidelines and professional standards.		X	
CE28	Students prepare and systematically fill in the complete Physiotherapy Clinical History, where all the steps followed from the reception of the patient/user to the report at the discharge of Physiotherapy are properly and efficiently recorded.			X
CE29	Students assess the functional state of the patient/user, considering the physical, psychological and social aspects.			X
CE30	Students determine the Physiotherapy Diagnosis according to the internationally recognized standards and international validation instruments. This competency includes prioritizing the needs of the patient/user to attend with priority to those that most compromise the recovery process.		X	



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TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Decision-making		X		
CT2	Problem solving.		X		



CT3	Capacity for organization and planning.	x		
CT4	Analysis and synthesis capacity.		x	
CT5	Oral and written communication in the native language.		x	
CT6	Information management capacity.	x		
CT9	Ethical commitment.	x		
CT10	Teamwork.		x	
CT11	Interpersonal relationship skills.	x		
CT13	Critical Reasoning	x		
CT16	Motivation for quality	x		
CT17	Adaptation to new situations.	x		
CT18	Creativity	x		
CT19	Autonomous learning			x
CT21	Leadership.	x		



Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R7, R8	20,00%	OPEN QUESTIONS: Written exam in which theoretical knowledge and the student's ability to relate, integrate and express it coherently in written language are evaluated. It allows the following generic or transversal skills to be assessed: 4 Capacity for analysis and synthesis. 3 Capacity for organisation and planning. 5 Oral and written communication in the native language. 8 Knowledge of a foreign language. 2 Problem-solving 19 Autonomous learning.
R1, R2, R3, R4, R5	30,00%	TEST TYPE: Multiple choice test with one correct answer out of five possible ones. It allows the student to know in greater detail the contents acquired by him/her. It allows the following generic or transversal competences to be assessed: 2 Problem solving 1 Decision making 13 Critical thinking
R4, R5, R7	10,00%	PRACTICES: Oral test in which the student is asked to solve practical exercises, clinical cases or problems about the knowledge of the different subjects. It assesses the following generic or transversal competences: 4 Analysis and synthesis capacity. 3 Capacity for organisation and planning. 7 IT Knowledge. 6 Information management skills. 2 Problem-solving 1 Decision-making. 13 Critical thinking. 19 Self-directed learning.



R6, R8	10,00%	WORKS: The student, individually or in a group, elaborates a revision or research topic and presents it, in writing, for the evaluation by the teacher. The following generic or transversal competences are valued: 4 Capacity for analysis and synthesis. 3 Capacity for organisation and planning. 7 Computer skills. 6 Information management skills. 10 Teamwork. 14 Working in an international context. 11 Interpersonal skills. 13 Critical thinking. 19 Autonomous learning. 18 Creativity. 21 Leadership. 20 Initiative and entrepreneurship. 16 Motivation for Quality. 70 Maintaining an attitude of learning and improvement. 72 Knowing one's own skills and limitations.
R4, R5, R7	30,00%	PRACTICAL EXAM: The student is faced with a test in which s/he must demonstrate through practical application the acquisition of certain knowledge. For example, histological or anatomopathological diagnosis, image interpretation or diagnostic tests. This test evaluates the following generic or transversal skills: 13 Critical reasoning. 19 Autonomous learning.

Observations

MINIMUM REQUIREMENTS:

Note: It is essential to pass the 2 tests with a 5 (theoretical, practical) and have submitted the directed work, to be able to do an average.

Evaluation criteria

a) First call:

1. Theoretical evaluation: = (A + B) The result of the examination will be the sum of the parts

Evaluation of test questions (30% of the final grade): It will consist of 30-40 multiple-choice questions. Evaluation open questions (20% of the final grade): a clinical case will be formulated.

The minimum grade to pass the theoretical evaluation will be 5 out of 10. This evaluation must be approved in order to be evaluated in the practical part.

Practical assessment Practical exam (40% of the final grade): the demonstration of 1-2 practical maneuvers from all the views will be requested during the practical sessions of the subject. The practical evaluation will be carried out at the end of the semester through a practical exam. The minimum grade to pass the practical evaluation will be 5 out of 10.

Only if the student passes the written test can they access the practical test.

The practical test will be evaluated by means of a rubric (which will be explained on the first day of class and they will have access to it on the platform), which includes the following sections:

“Selection of the technique (1 points), argumentation of the technique (2 points), application of the



technique (3 points), technical language (2 points) and time spent developing the technique (2 points) ”

Group work and exhibition (10% of the final grade): They may be reading articles, individual or group work. The works delivered after the deadline will not be suitable.

b) 2nd Call.

Both the written test and the practical tests have the same structure and percentage.

MENTION OF DISTINCTION:

According to Article 22 of the Regulations governing the Evaluation and Qualification of UCV Courses, the mention of "Distinction of Honor" may be awarded by the professor responsible for the course to students who have obtained, at least, the qualification of 9 over 10 ("Sobresaliente"). The number of "Distinction of Honor" mentions that may be awarded may not exceed five percent of the number of students included in the same official record, unless this number is lower than 20, in which case only one "Distinction of Honor" may be awarded.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- | | |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M1 | Master class Problem solving Exposition of contents by the teacher. Explanation of knowledge and skills |
| M2 | Case resolution: Analysis of sample realities - real or simulated - that allow the student to connect theory with practice, to learn from models of reality or to reflect on the processes used in the cases presented. |
| M4 | Personalized attention. Period of instruction and/or guidance by a tutor with the aim of analyzing with the student their work, activities and their evolution in learning the subjects. |
| M5 | Set of tests carried out to know the degree of acquisition of knowledge and skills of the student. |
| M11 | Oral presentation |
| M12 | Group work: Group work sessions supervised by the teacher. Knowledge construction through student interaction and activity. |
| M14 | Group work to search, discuss and filter information about the subjects |
| M15 | Seminar, supervised monographic sessions with shared participation |



M16 Student's study: Individual preparation of readings, essays, problem solving, seminars.

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theoretical lessons M1, M11	R1, R2, R3, R4, R5, R6, R7, R8	32,00	1,28
Practice lessons M2, M12, M15	R2, R4, R5, R7	14,00	0,56
Seminar M15	R1, R2, R3, R4, R5, R7	6,00	0,24
Office Hours M4	R1, R2, R3, R4, R5, R6, R7	5,00	0,20
Assessment M5, M11	R1, R2, R3, R4, R5, R6, R7	3,00	0,12
TOTAL		60,00	2,40

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Autonomous work M16	R1, R2, R3, R4, R5	70,00	2,80
Group work M14	R6, R7	20,00	0,80
TOTAL		90,00	3,60



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
DIDACTIC UNIT I: GENERAL AND ANATOMOPHYSIOLOGICAL RECORD	Unit1. Introduction to neurological physiotherapy. Unit 2.Neuroanatomy and functional neurophysiology applied
DIDACTIC UNIT II: ASSESSMENT AND EVALUATION OF THE NEUROLOGICAL PATIENT	Unit 3 Neurological assessment.Unit 4 Complementary examinations and general evaluation of the neurological patient. CIFUnit 5 Assessment of movement and gait.Unit 6. Motor ControlUnit 7. Motor Learning
DIDACTIC UNIT III: PHYSIOTHERAPY IN LARGE NEUROLOGICAL SYNDROMES AND BRAIN INJURIES.	Unit 8. Fundamentals of physiotherapy in patients with acquired brain damage: head trauma.UNIT 9. ACV. Fundamentals of physiotherapy in the patient with cerebrovascular accident. Hemiplegia Evaluation and treatment.UNIT 10. Fundamentals of physiotherapy in extrapyramidal and cerebellar disorders. Basal ganglia diseases. Parkinson's disease Koreas Athetosis DystoniaUNIT 11. Fundamentals of physiotherapy in patients with multiple sclerosis. Specific problems. Clinical picture and clinical forms. Initial balance. Deformity prevention. Muscle enhancement Fight against hypertonia.UNIT 12. Fundamentals of physiotherapy in patients with E.L.AUNIT 13. Fundamentals of physiotherapy in traumatic spinal cord injuries. Physiotherapy and spinal cord injury: History, therapeutic possibilities. Phases and effects of spinal cord injury. Problems in the bedding period. Surgical indications. Subacute phase: sitting, standing, walking
DIDACTIC UNIT IV: INTRODUCTION TO PHYSIOTHERAPY IN CHILDHOOD NEUROLOGICAL INJURIES.	UNIT 14. Fundamentals of physiotherapy in patients with P.C.I.UNIT 15. Fundamentals of physiotherapy in patients with BIFFINE SPINE and hydrocephalusUNIT 16. Rare diseases and congenital syndromes that present with neurological alterations(differential diagnosis in pregnancy: Down, Patau and Edwards)



DIDACTIC UNIT V: INTRODUCTION TO THE TECHNIQUES IN PHYSIOTHERAPY OF THE NERVOUS SYSTEM

DIDACTIC UNIT VI: PHYSIOTHERAPY IN PERIPHERAL INJURIES.

DIDACTIC UNIT VII.- PRACTICES

UNIT 15. Fundamentals and technique of the Bobath treatment method. UNIT 16. Fundamentals and technique of the treatment method of H. Kabat or Proprioceptive Neuromuscular Facilitation. UNIT 17. Fundamentals and techniques in neurological physiotherapy: Petö or Conductive Education method, Vojta or Reflex Locomotion method, Perfetti method. UNIT 18. Restrictive hand therapy, motor imaging, mirror therapy. UNIT 19. Therapeutic exercise in neurological patients

UNIT 20. Fundamentals of physiotherapy in patients with PERIPHERAL NERVOUS PATHOLOGY. UNIT 21. Fundamentals of physiotherapy in patients with polyneuropathies

1. Evaluation of the neurological patient.
2. Neuromotor analysis of movement.
3. Fundamentals of the KABAT method
4. Motor control, balance and gait.
5. Therapeutic Exercise in neurological patient.
6. Motor imagery, mirror therapy.
7. Neuromuscular Bandage in neurological pathology



Temporary organization of learning:

Block of content	Number of sessions	Hours
DIDACTIC UNIT I: GENERAL AND ANATOMOPHYSIOLOGICAL RECORD	1,00	2,00
DIDACTIC UNIT II: ASSESSMENT AND EVALUATION OF THE NEUROLOGICAL PATIENT	7,00	14,00
DIDACTIC UNIT III: PHYSIOTHERAPY IN LARGE NEUROLOGICAL SYNDROMES AND BRAIN INJURIES.	6,00	12,00
DIDACTIC UNIT IV: INTRODUCTION TO PHYSIOTHERAPY IN CHILDHOOD NEUROLOGICAL INJURIES.	2,00	4,00
DIDACTIC UNIT V: INTRODUCTION TO THE TECHNIQUES IN PHYSIOTHERAPY OF THE NERVOUS SYSTEM	5,00	10,00
DIDACTIC UNIT VI: PHYSIOTHERAPY IN PERIPHERAL INJURIES.	2,00	4,00
DIDACTIC UNIT VII.- PRACTICES	7,00	14,00



References

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2. MARÍA PELLICER ALONSO Y COLS. Fisioterapeutas de instituciones sanitarias. Sevilla: MAD; 2000.
3. L. LÓPEZ-DURÁN STERN. Traumatología y ortopedia. Madrid: Luzán 5; 1998.
4. BOBATH, B. Hemiplejía del adulto. Bs. Aires: Panamericana; 1993.
5. BRUNNSTROM, S. Reeducción motora del hemipléjico. Barcelona: Jims; 1979.
6. CARR/SHEPHERD. Fisioterapia de los trastornos cerebrales. Bs Aires: Panamericana; 1985.
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13. La facilitación Neuromuscular Propioceptiva en la Práctica. Autores: Adler. Beckers. Buck. Editorial medica Panamericana.
14. El principio. Autor Václav Vojta. Editorial Springer Verlag Iberica.
15. Experiencias con el Concepto Bobath. Fundamentos, tratamientos y casos.
16. Adler S, Beckers D, Buck M. La facilitación neuromuscular propioceptiva en la práctica. Madrid: Médica Panamericana; 2012.
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21. Stokes M, Stack E. Fisioterapia en la rehabilitación neurológica. London: Elsevier Health Sciences Spain; 2014.



Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

Situation 1: Teaching without limited capacity (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

Situation 2: Teaching with limited capacity (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

☒ Microsoft Teams

☐ Kaltura



Situation 3: Confinement due to a new State of Alarm.

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

☒ Microsoft Teams

☐ Kaltura

Explanation about the practical sessions:

The practical classes change in terms of how they are taught. There will be practical theoretical classes where the

Students will carry out the techniques studied in class in their homes. Students will be asked to upload some

video of technique realization to the platform



2. System for Assessing the Acquisition of the competences and Assessment System

ONSITE WORK

Regarding the Assessment Tools:

☐

The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

☒

The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used
TEST TYPE TEST	30	TEST TYPE TEST	30
OPEN QUESTION	20	OPEN QUESTION	20
WORKS	10	WORKS	10
PRACTICAL EXAM AND PRACTICES	40	PRACTICAL EXAM AND PRACTICES	40

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

Comments to the Assessment System:



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Course guide

Year 2023/2024

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