

Degree Course of Physiotherapy

Integrated course: Rehabilitation Methodology

Teaching: Nursing Sciences and neuropsychiatric rehabilitation techniques

SSD teaching: MED/48

CFU: 6

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PREREQUISITES

Mandatory preparatory knowledges are not required, however knowledge about anatomy and neuroanatomy, physiology and neurophysiology and basic concepts of Physics and applied physics are required. are necessary.

LEARNING OBJECTIVES

General Objective: The student will have to acquire general knowledge on the significance of functional evaluation, the methodological approach of rehabilitation, on the subjects participating in it, and on the general techniques of handling and mobilizing Patient.

Specific objectives: Through a deepening of the joint physiology, the muscular tests and the techniques of mobilization and handling of loads, the student will be able to acquire the foundations to undertake the practical training course.

EARNING OUTCOMES

Knowledge and understanding

At the end of the course the student is required to know

- *the basic anatomical terminology and basic anatomical structures of the human body (locomotor apparatus)*
- *organization and basic structure of the central and peripheral nervous system*
- *Acquire specific knowledge on biomechanics and joint physiology as an analysis and guidance system for function assessment*
- *Acquire specific knowledge on the neurophysiological mechanisms of manual muscle test functioning*
- *Learn the main tests of muscle and joint examination and their correct execution*
- *Learn the evaluation method of the Manual Muscle Test*

Applying knowledge and understanding

At the end of the course the student will be able to:

Use the acquired knowledge of human anatomy and neuroanatomy for the functional assessment of the healthy person.

Communication skills

At the end of the course the student must know adequately human anatomical structures, muscle and joint tests, joint physiology and biomechanics and knowing how to use specific anatomical terminology so as to be able to relate, within the care process, with



users of all ages and / or other health professionals, in an appropriate verbal, non-verbal and written form.

Making judgements

The knowledge of biomechanics, joint and muscle physiology will help the physiotherapist to develop a critical thinking in the ability to decide the correct answer to the needs of assistance in relation to the different levels of complexity of the rehabilitation intervention

Syllabus

BIOMECHANICS PROGRAM

- ❑ Articular physiology of the pelvis and the lower limb
- ❑ The pelvis: articular surfaces; Physiology of movements; Ligaments and muscular actions
- ❑ Hip: articular surfaces; Physiology of movements; Ligaments and muscular actions
- ❑ The knee: articular surfaces; Physiology of movements; Ligaments and muscular actions
- ❑ The ankle: articular surfaces; Physiology of movements; Ligaments and muscular actions
- ❑ Foot: articular surfaces; Physiology of movements; Ligaments and muscular actions

The PLANTAR Vault: Functions of the Vault; Inner Arch; Outer arc; Front arch; transverse and longitudinal curvature; Muscles that support the plantar vault; Carrying of the foot to the ground during the pass.

Articular physiology of the shoulder and upper extremity

SECTION I

- ❑ Principles and Methods
- ❑ Joint Range of Motion
- ❑ Assessment and Measurement of Joint Range of Motion
- ❑ Assessment and Measurement of Muscle Length
- ❑ Manual Assessment of Muscle Strength
- ❑ Functional Application of Assessment of Joint
- ❑ Range of Motion and Manual Muscle Testing
- ❑ Relating Assessment to Treatment
- ❑ Similar Assessment and Treatment
- ❑ Methods
- ❑ Key Steps When Applying Assessments and Treatments
- ❑ Examples of Similar Assessment and Treatment Methods



SECTION II

- ❑ Regional Evaluation
- ❑ Techniques

Shoulder Complex

- ❑ Articulations and Movements
- ❑ Surface Anatomy
- ❑ Range of Motion Assessment and Measurement
- ❑ Muscle Length Assessment and Measurement
- ❑ Muscle Strength Assessment
- ❑ Functional Application

Elbow and Forearm

- ❑ Articulations and Movements
- ❑ Surface Anatomy
- ❑ Range of Motion Assessment and Measurement
- ❑ Muscle Length Assessment and Measurement
- ❑ Muscle Strength Assessment
- ❑ Functional Application

Wrist and Hand

- ❑ Articulations and Movements
- ❑ Surface Anatomy
- ❑ Range of Motion Assessment and Measurement
- ❑ Muscle Length Assessment and Measurement
- ❑ Muscle Strength Assessment
- ❑ Functional Application

Hip

- ❑ Articulations and Movements
- ❑ Surface Anatomy
- ❑ Range of Motion Assessment and Measurement
- ❑ Muscle Length Assessment and Measurement
- ❑ Muscle Strength Assessment
- ❑ Functional Application

Knee

- ❑ Articulations and Movements
- ❑ Surface Anatomy
- ❑ Range of Motion Assessment and Measurement
- ❑ Muscle Length Assessment and Measurement
- ❑ Muscle Strength Assessment
- ❑ Functional Application

Ankle and Foot

- ❑ Articulations and Movements
- ❑ Surface Anatomy
- ❑ Range of Motion Assessment and Measurement
- ❑ Muscle Length Assessment and Measurement
- ❑ Muscle Strength Assessment
- ❑ Functional Application

Head, Neck, and Trunk

- ❑ Articulations and Movements: Head and Neck
- ❑ Instrumentation and Measurement Procedures: TMJ and Spine



- ❑ Active Range of Motion Assessment and Measurement: Head and Neck
- ❑ Validity and Reliability: Measurement of the TMJ and Cervical Spine AROM
- ❑ Muscle Strength Assessment: Muscles of the Face
- ❑ Muscle Strength Assessment: Muscles of the Head and Neck
- ❑ Articulations and Movements: Trunk
- ❑ Surface Anatomy: Trunk
- ❑ Active Range of Motion Assessment and Measurement: Trunk
- ❑ Validity and Reliability: Measurement of the Thoracic and Lumbar Spine AROM
- ❑ Muscle Length Assessment and Measurement: Trunk
- ❑ Muscle Strength Assessment: Muscles of the Trunk
- ❑ Functional Application: Neck and Trunk

COURSE STRUCTURE

The teaching is organized in lectures (60 hours) and practical theoretical exercises. During the lessons, the explanation of articular Physiology and Biomechanics will be performed by projecting illustrative images (Power-Point) and video. During the exercises the students will be able to test the arctic and muscular tests on themselves simulating the function evaluation. In the classroom during the lessons the students will practice the mentioned tests in groups.

COURSE GRADE DETERMINATION

The assessment of learning takes place on the basis of an oral and theoretical test and a practical test. For each test, different scores are awarded depending on the difficulty of the application and depending on the answers given (complete or partial) for a maximum of 30 points.

ORAL AND THEORETICAL TEST

PARAMETER	DESCRIPTOR	SCORE	Q1	Q2
RELEVANCE	Congruent exposition with the directions and demands of the question, supported by relevant theoretical constructs and/or examples	4,5		
	Substantially congruent exposition with the directions and demands of the question	3		
	Fragmentary and disorganized	2,5		

EXHAUSTIVENESS	exposition with confused arguments			
	Not given answer	0		
	Complete and extensive knowledge, analytical, exhaustive and organic development of the required arguments	4,5		
	Complete knowledge, sufficiently organic development of the required topics	3		
	Aproximate knowledge and/or lack of organic development	2,5		
	Insufficient knowledge/exact treatment/no answer given	0		
		TOTAL SCORES	(MAX 9)	(MAX 9)
		FINAL SCORE		

PRACTICAL TEST

PARAMETER		DESCRIPTOR	SCORE	Q1	Q2
PALPATORY ANATOMY	Indetify by palpation the main points of reference. Correct position of the operator in relation to the test	Complete execution	3		
		Uncertain execution	2		
		Partial and simplified execution	1		
		No execution	0		
TEST EXECUTION	Performance of a joint and/or muscle test proposed by the	Complete execution	3		
		Uncertain execution	2		

	Commission	execution			
		Partial and simplified execution	1		
		No execution	0		
			TOTAL SCORES	(MAX 6)	(MAX 6)
			FINAL SCORE	(MAX 12)	

The overall mark is determined by the sum of the mark of the theoretical test with the mark obtained in the practical test. There are two questions for each theoretical and practical area.

OPTIONAL ACTIVITIES

Students will have the opportunity to carry out theoretical / practical exercises and participate in dedicated seminars. The teachers will provide constant support during and after the lessons. The Practice Laboratory is available to students for individual and group study.

READING MATERIALS

- ❑ Anatomia funzionale - Arto superiore - Arto Inferiore - Tronco e rachide | I. A. Kapandji | Monduzzi
- ❑ MUSCULO-SKELETAL ASSESSMENT Joint Motion and Muscle Testing - Hazel M. Clarkson, M.A., B.P.T. 2013 LIPPINCOTT WILLIAMS & WILKINS
- ❑ Muscles: Testing and Function, with Posture and Pain: Testing and Function with Posture and Pain, (ENGLISH EDITION) Florence P. Kendall, Elizabeth Kendall McCreary Patricia G. Provance Mary Rodgers William Romani, LIPPINCOTT WILLIAMS & WILKINS
- ❑ Musculoskeletal Assessment: Joint Motion and Muscle Testing Spiral-bound – 17 Jan 2012 LIPPINCOTT WILLIAMS & WILKINS
- ❑ Physiology of the Joints 6th Edition Volume 2 Lower Limb ELSAVIER
- ❑ Muscles: Testing and Function, with Posture and Pain: Testing and Function with Posture and Pain, (ENGLISH EDITION) Florence P. Kendall, Elizabeth Kendall McCreary Patricia G. Provance Mary Rodgers William Romani, LIPPINCOTT Musculoskeletal Assessment: Joint Motion and Muscle Testing Spiral-bound – 17 Jan 2012
- ❑ LIPPINCOTT WILLIAMS & WILKINS
- ❑ Physiology of the Joints 6th Edition Volume 2 Lower Limb ELSEVIER WILLIAMS & WILKINS

SUGGESTED BOOKS:

Functional anatomy-upper limb-lower extremity-trunk and spine - Kapandji | Monduzzi

- ❑ MUSCULO-SKELETAL ASSESSMENT Joint Motion and Muscle Testing - Hazel M. Clarkson, M.A., B.P.T. 2013 LIPPINCOTT WILLIAMS & WILKINS
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