

BSc in Physiotherapy

INTEGRADED COURSE TITLE: INTERDISCIPLINARY CLINICAL SCIENCES 1
NUMBER OF ECTS CREDITS: 6
SSD: MED/30, MED/31, MED/33, MED/34, MED/36
MODULE CONVENOR: PROF. EDOARDO SORDI
E-MAIL: edoardo.sordi@unicamillus.org

MODULE: PHYSICAL AND REHABILITATION MEDICINE
NUMBER OF ECTS CREDITS: 2

SSD : MED/34

PROFESSOR : [GIORGIO SCIVOLETTO](#)

e- mail: giorgio.scivoletto@unicamillus.org

MODULE: EYE DISEASES
NUMBER OF ECTS CREDITS: 1

SSD : MED/30

PROFESSOR : [EDOARDO SORDI](#)

e- mail: edoardo.sordi@unicamillus.org

MODULE: LOCOMOTIVE SYSTEM DISEASES
NUMBER OF ECTS CREDITS: 1

SSD : MED/33

PROFESSOR : [GABRIELE BOVE](#)

e- mail: gabriele.bove@unicamillus.org

MODULE: DIAGNOSTIC IMAGING AND RADIOTHERAPY
NUMBER OF ECTS CREDITS: 1

SSD : MED/36

PROFESSOR : [ERICA BASSETTI](#)

e- mail: erica.bassetti@unicamillus.org

MODULE: OTOLARINGOLOGY
NUMBER OF ECTS CREDITS: 1

SSD : MED/31

PROFESSOR : [FRANCESCO RONCHETTI](#)

e- mail: francesco.ronchetti@unicamillus.org

PREREQUISITES

Although there are no preparatory prerequisites, basic concepts of anatomy and physiology of the locomotor system, the visual system, the acoustic-vestibular system and the aerial-digestive tract are necessary, with particular reference to acute, chronic and degenerative inflammatory processes.. Basic concepts on rehabilitative methods and physical therapies are required, as well as elements of pathophysiology of the main neurological and orthopedic pathologies treated.

LEARNING OBJECTIVES

The teaching objectives are to provide students with:

- the knowledge related to rehabilitation processes in the sequelae and outcomes of main neurological and orthopedic diseases, in the context of medical diagnosis and multidisciplinary work.
- the basic principles of visual anatomy and physiology helpful in understanding the



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relevant aspects of ophthalmic disorders.

- The knowledge of the most common orthopaedic pathologies during growth period
- the physical principles of ionizing radiation, ultrasound and electro-magnetic waves and their possible applications, with particular attention to their use in the medical field. The student will learn the physical principles, the mechanisms of interaction of the same with living matter.
- The understanding of the pathophysiological mechanisms underlying the alterations in balance and the production mechanisms of speech and swallowing.

LEARNING OUTCOMES

Knowledge and Understanding

At the end of the teaching course, the student should be able to :

- evaluate, as part of the individual methods, physical therapy to be used and the possible adoption of orthoses and aids in some of the main neurological diseases (Parkinson's disease, stroke, multiple sclerosis, etc) and orthopedic diseases (hip and knee replacements, shoulder and elbow injuries, tibio-tarsal).
- demonstrate the comprehension of all the basic concepts of the ocular anatomy and the visual mechanism and recognize the characteristics of the different ophthalmic disorders and visual defects, including possible implications in the locomotor system.
- Know the described joint diseases, the clinical and instrumental diagnostic criteria as well as the treatment options most used today
- know the physical principles of ionizing radiation, ultrasound and electro-magnetic waves
- Describe the main applications of ionizing radiation, ultrasound and electromagnetic waves in the clinical field
- Know the various diagnostic imaging methods
- Know the principles of interactions of ion-izing radiation with living matter.
- Know the principles of ultrasound interac-tions with living matter.
- Know the principles of interactions of elec-tromagnetic waves with living matter. Know the applications of the various imaging methods and their correct use in the clinical field
- Know the anatomy and physiology of the central and peripheral vestibular system
- Describe the main methods of clinical analysis of the peripheral vestibular system
- Knowing the main pathological frameworks of the peripheral vestibular system
- Knowing the principles of physical rehabilitation of vestibular pathologies
- Principles of prosthetic rehabilitation of the peripheral vestibular system
- Know the anatomy of the oral, larynx and the air-digestive tract
- Know the physiology of voice production and swallowing
- Know the main clinical analysis tests of the air-digestive system
- Knowing and describing the main pathological and degenerative frameworks of the air-digestive system
- Know the rehabilitative methods of swallowing

Applying knowledge and understanding

At the end of the teaching, the student will be able to use the knowledge acquired for the autonomous deepening of aspects related to the specific field to which the student will devote himself in the field of professional activity.



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Communication skills

At the end of the teaching, the student will need to know how to use specific scientific terminology appropriately.

Making judgements

At the end of the teaching, the student will need to know general assessments of the topics covered.

Learning ability

The student will have acquired skills and learning methods suitable for deepening and improving their skills also through consultation of scientific literature.

COURSE SYLLABUS

Syllabus Physical and Rehabilitation Medicine

Rehabilitation program in patients with Parkinson's disease
Rehabilitation program in the patient with ischemic and hemorrhagic Stroke
Rehabilitation program in the patient with Multiple Sclerosis
Rehabilitation program in the patient with Motor Neuron disease
Rehabilitation program in the patient with Alzheimer's disease
Rehabilitation program in the patient with hereditary and acquired Polyneuropathies
Rehabilitation program in the patient with Myasthenia Gravis
Rehabilitation program in knee injuries
Rehabilitation program in hip injuries
Rehabilitation program in tibio-tarsal injuries
Rehabilitation program in shoulder and elbow injuries

Syllabus Eye Diseases

Elements of anatomy and physiology

Fibrous tunics: Sclera - Cornea
Vascular tunics: Choroid - Ciliary body - Iris
Nerve tunics: Retina
Crystalline lens and vitreous
Anterior chamber, posterior chamber, aqueous humor
Optic Nerve and Optic Pathways
Eyelids and Conjunctiva
Lacrimal system: Gland and Lacrimal Tracts
Extrinsic Ocular Muscles
Orbit

Pathophysiological optics

The eye from an optical point of view
Elements of optics, prisms and lenses
Vision defects (myopia, hyperopia, astigmatism, presbyopia)
Visual acuity measurement (charts, decimals, diopters, retinoscopy (schiascopy), refractometer)

Pathology and Clinic

Eyelid diseases (chalazion, hordeolum, ectropion, entropion, ptosis)
Diseases of the lacrimal drainage system (occlusion, dacryocystitis)
Diseases of the conjunctiva (conjunctivitis, pinguecula, pterygium)



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Diseases of the cornea (keratitis, corneal ulcers, keratoconus)

Diseases of the sclera (scleritis)

Diseases of the lens (cataracts)

Diseases of the vitreous

Diseases of the uvea (uveitis, tumors)

Diseases of the retina (angiomas, diabetic retinopathy, Hypertensive retinopathy, venous and arterial occlusions, inherited retinal degeneration, age-related macular degenerations, retinal detachment, retinoblastoma.

Neuro-ophthalmology (papilledema, optic neuritis, chiasmatic and retrochiasmatic syndrome).

Glaucoma (humor aqueous circulation, tonometry, visual field, optic nerve alterations)

Concomitant and paralytic strabismus (amblyopia, esotropia, exotropia)

Semeiotics and instrumental examinations

Physical examination (biomicroscopy, ophthalmoscopy)

Corneal evaluation (ophthalmometry, topography, endothelial microsc.)

Glaucoma and optical pathways (perimetry, ERG, VEP)

Color sense tests (Ishihara plates, Farnsworth test)

Retina imaging (Fluorescein angiography + ICGA, OCT, Ultrasound)

Syllabus Locomotive System Diseases

Pathologies of the major joints such as:

- Shoulder
- Elbow
- Spine
- Hip
- Knee
- Ankle

Surgical and conservative treatment focused on the rehab

Rehab concepts based on type of surgical treatment

Knowledge of the rehab based on the surgical treatment

Syllabus Diagnostic Imaging and Radiotherapy

Electromagnetic radiation and X-ray production.

Corpuscular theory of radiation

Discovery of X-rays

Interaction of X-rays with matter

Radiant and Radiographic Image. Intrinsic characteristics

Equipment in radiodiagnostics

Ultrasound Equipment

MRI equipment

Radiotherapy equipment

Syllabus Otolaryngology

Vestibular system:

Anatomy and physiology of the auditory and vestibular system, immuno-mediated diseases of the inner ear associated with vertigo, pathophysiology of the optical-kinetic system and the visuo-vestibulo-oculomotor reflex, electro-nystagmography, caloric and instrumental vestibular evaluation, the potential evoked myogenic vestibular (VEMP's) clinical applications, assessment of the patient with dizzying-postural disorders the bedside examination, clinic of peripheral disorders of balance with Associated audiological symptoms, positional paroxysm dizziness from labyrinthitis, vertigo and barotrauma,



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cervical whiplash and visuo-vestibular system, rehabilitative therapy in vestibular system pathology peripheral

Dysphagia:

Terminology of disphagy, pathophysiological components in swallowing disorders, disphagy and other disorders of swallowing, aspiration, etiology of disphagy, mecanic and neurological disphagy, clinical of the disphagoic patient, procedures diagnostics, primary pathological frameworks in paediatric and adultage, disphagy in the elderly, voice and disphagia, treatment of disphagia.texts uncamillus

COURSE STRUCTURE

The Teaching is structured in 60 hours of frontal teaching, divided into lessons of 2 or 4 hours according to the academic calendar. The frontal teaching includes theoretical lectures and supplementary seminars on the topics covered. Attendance is compulsory for at least 75% of the total hours of all the courses of the integrated course.

COURSE GRADE DETERMINATION INTEGRATED COURSE

The "Interdisciplinary Clinical Sciences" integrated teaching exam consists of a written test with both multiple choice and open-ended questions for the "Locomotive Diseases", "Physical and Rehabilitation Medicine", "Otolaryngology" and "Diagnostic Imaging and Radiotherapy" modules, and an oral test for the "Eye Diseases" one.

The learning tests are aimed at ascertaining the acquisition of the expected knowledge and skills, without the help of notes or books. The evaluation parameters used will be the specific knowledge of the topic, together with the ability to discursively organize the knowledge, the critical approach and the competence in the use of specialized language. The unit of measurement used will be a vote expressed out of thirty.

The exam is considered passed with a minimum grade of 18/30 in all subjects.

READING MATERIALS

PHYSICAL AND REHABILITATION MEDICINE

Materials provided by the teacher.

EYE DISEASE

Lecture notes.

LOCOMOTIVE SYSTEM DIDEASE

Review of Orthopaedics VI edition; Miller M.D., Thompson S.R, Hart J.A; Elsevier

DIAGNOSTIC IMAGING AND RADIOTHERAPY

- Elementi in tecnologia in Diagnostica Per Immagini (R. Passariello)
- "Anatomia Radiologica Weir -Abrahams
- "Magnetic Resonance Imaging Lippincot Raven

OTOLARINGOLOGY

Vertigo and Dizziness Common Complaints Dieterich, Strupp, Springer London Limited 2005

Clinic Of LabyrinthS Peripherals Official Report XCII National Congress Enzo Mora

Dysphagia diagnosis and Treatment Olle Ekberg Springer London

Dysphagia Otolaryngologic Clinics of North America volume 31 number