

## **Degree course in Physiotherapy**

Teaching Nursing and neuropsychiatric and rehabilitative techniques

Integrated Course: Rehabilitation Methodology II

SSD MED / 48

Number of CFUs: 8

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### **PREREQUISITES**

Although no propedeuticities are present, knowledge of basic sciences (neuroanatomy and anatomy, physiology and neurophysiology), medical sciences related to the second year's contents, and the basic method of rehabilitation are required.

### **LEARNING OBJECTIVES**

This course aims at enhancing previous background on the functional evaluation of motor and neurological performance and providing the student additional expertise related to patients with neurological and motor diseases. A specific assessment of signs and symptoms together with analysis of balance, gait, posture, reaching and grasping will be provided in order to identify the treatment goals and design a rehabilitation plan in various fields.

### **LEARNING OUTCOMES**

After completing this course, the student is able:

- to understand basic principles of motor learning
- to understand basic principles of neuroplasticity
- to translate residual learning capacity into clinical practice
- to evaluate functional abilities (balance, gait, posture, reaching and grasping)
- to design a rehabilitation approach taking into account: the diversity of symptoms, the disease evolution, the impact on global functioning, the existing scientific evidence

### **COURSE SYLLABUS**

#### **Prof. Elisa Pelosin 2 cfu**

- Hierarchical organization of movement
- Motor learning principles
- Principles of neuroplasticity
- Definition and aim of neurorehabilitation
- Evaluation of (main) neurological symptoms
- Functional and clinical evaluation of motor functions
  - Balance
  - Gait
  - Posture
  - Reaching and grasping
- Neuro-rehabilitation treatment goal
- Planning rehabilitation treatment based on neurological damage

**Prof. Giovanni Galeoto – 2 cfu**  
**COURSE SYLLABUS**

Principles of treatment of pathologies of the musculoskeletal system and orthopedic semeiotics.

Planning of a rehabilitation program: orthopedic patient handling, treatment techniques, orthopedic aids and traumatology

Walking: principles of re-education on the journey

**LOWER LIMB**

- Rehabilitation after hip arthroplasty, osteosynthesis in acetabular fractures, osteosynthesis in fractures of the proximal epiphysis of the femur, diaphyseal and distal femoral epiphysis; osteosynthesis in tibial leg and pilon fractures, osteosynthesis in tibial and patella plate fractures, cruciate ligament reconstruction, meniscal tear surgery, knee and ankle joint replacement surgery, osteosynthesis in malleolar fractures.
- Rehabilitation in Achilles tendon lesions, in ankle sprain. in patellofemoral syndrome

**UPPER LIMB**

- Rehabilitation of the shoulder: impingement, instability, rotator cuff injuries, adhesive capsulitis, shoulder prosthesis, clavicle fractures.
- Rehabilitation of fractures of the humerus, arthroplasty and elbow fractures, wrist and hand fractures.

**Prof. Francesco Frontani 2 CFU**  
**COURSE SYLLABUS**

Physical therapy assessment of musculoskeletal disorders

Flag system

Congenital hip diseases:

Congenital hip dislocation;

Hip dysplasia surgery and rehabilitation. Functional evaluation and therapeutic approach.

Osteochondrosis:

Slipped, capital epiphysis, epiphysiolisis

M.di Perthes;

Osgood-Schlatter disease;

Assessment and management

Congenital Foot Diseases:

Clubfoot Evaluation and therapeutic approach

Scoliosis. Clinical-functional evaluation and rehabilitation treatment

The parameters of the lower limbs: Knee varus; Knee valgus; The flat-valgus foot;

Assessment and management

**Prof. Marco Tofani 2 CFU**  
**COURSE SYLLABUS**

Psycho and Neurodevelopment of the Child

**CEREBRAL PALSY :**

-definition

-aetiology

- topographic, clinical and functional classifications

- neurodevelopmental delay during the first year of life

- associated disorders

**ASSESSING A CHILD WITH CP. (evaluation form):**

- analysis of interactive processes;
- adaptive skills analysis;

- analysis of postural adaptations ;
- functional analysis;
- treatment goals.

#### CLINICAL FORMS :

- The child with spastic bilateral form of CP : motor characteristics, natural evolution, goals and treatment.
- The child with diplegia : motor characteristics, natural evolution, goals and treatment.
- The child with unilateral spastic form of CP : motor characteristics, natural evolution, goals and treatment.
- The child with dykinetic CP (choreo-athetotic and dystonic forms): motor characteristics, natural evolution, goals and treatment.
- The child with ataxia : motor characteristics, natural evolution, goals and treatment.
- The premature baby : general characteristics, rehabilitation issues.
- Eléments of Assistive Technologies for CP : standing and walking frames, adaptive seating systems and devices for communication

#### COURSE STRUCTURE

60 hours of frontal lessons Attendance: at least 75% of the course integrato

#### MODALITÀ DI VERIFICA DELL'APPRENDIMENTO/COURSE GRADE DETERMINATION

Student's learning will be examined by integrated course by means of a structured written exam consisting of 36 questions, 34 of which will contain a multiple-choice-like structure and 2 will be structured as open-ended questions. Overall, the marks will be subdivided into two parts (40% for multiple-choice questions; 60% for open-ended questions). The max score for multiple-choice questions will be 12/30 and the max score for each open-ended question will be 9/30 (12 + 9 + 9= 30/30). The student can complete the written test with the oral test

#### OPTIONAL ACTIVITIES

A group-based power-point exercises will be proposed with the aim to improve students' ability in presenting scientific papers.

#### READING MATERIALS

Motor Control : Translating Research into Clinical Practice

By Anne Shumway-Cook By (author) Marjorie H. Woollacott

Fifth, North American Edition

Wolters Kluwer Ed

Pennsylvania Child Welfare Resource Center (2005) Child and Adolescent Development Resource Book.  
University of Pittsburgh

Levitt, S., & Addison, A. (2018). Treatment of cerebral palsy and motor delay. Wiley-Blackwell. 6th edition

Physiotherapy in Orthopaedics - A Problem-Solving Approach

Karen Atkinson Fiona Coutts Anne-Marie Hassenkamp – Elsevier

Scientific articles will be inserted on the topics discussed