



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Fisiologia e Condizionamento Muscolare

2627-1-I0204D006-I0204D00605

Aims

The course aims to show the main principles of muscular physiology and to illustrate the basis of the training process and method. These concepts are explained in order to give to the physical therapist the appropriate tools for specific muscular performance training, to choose the correct dosage, for management of tendinopathies and DOMS, to understand how muscle flexibility and length can be improved.

Contents

Detailed program

According to the principles of muscle conditioning, the following topics will be addressed:

Characteristics of contractile tissue

Characteristics of tendons

Characteristics of the muscle supporting connective tissue

Muscle metabolism

The section on exercise methodology for muscle training will specifically cover:

Types of muscle contraction and their distinctive features: isometric, eccentric, concentric

Plyometrics: characteristics and training methods

Training theory: training goals and the optimal stimulus to achieve them

Methodological foundations of strength training

Training modalities: overload training, NMES (Neuromuscular Electrical Stimulation), BFR (Blood Flow Restriction) training, sport?specific or task?specific training

Methodological foundations of endurance training

Methodological foundations of power training

Changes in muscle length: which strategies? Stretching and beyond

Recovery strategies: the recovery pyramid

Prerequisites

Teaching form

Delivery Teaching (DE) Interactive teaching (TEL-DI), provided in the form of e-tivity and interactive and collaborative activities (e.g., tasks, group work, formative assessments, etc.).

Interactive teaching (DI) with short interventions carried out by the students, structured e-tivities (individual or collaborative), typical forms of formative evaluation, with the character of ongoing questionnaires or tests.

Textbook and teaching resource

* Kendall Florence Peterson, Elizabeth Kendall McCreary, Patricia Geise Provance, I muscoli - funzioni e test (quinta edizione), Verducci Editore, Roma, 2002

* Skeletal Muscle Structure, Function, and Plasticity: The Physiological Basis of Rehabilitation, 3rd Edition Richard L. Lieber ISBN: 978-0-7817-7593-9

* Jürgen Weineck, l'allenamento ottimale, Calzetti e Mariucci, 2006

* Ola Grimsby e Jim Rivard, STEP – Scientific Therapeutic Exercise progression – basic theory, The academy of graduate physical therapy, 2009

Semester

2nd semester

Assessment method

EWritten exam with multiple questions (n° 10), 5 options of which only one is correct
1st open question

Office hours

By appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING
