



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Fisiologia e Condizionamento Muscolare

2223-1-I0201D130-I0201D192M

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#### 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

Based on the principles of muscular

conditioning the course will cover: - characteristics of the contractile tissue

- tendon characteristics - characteristics of the support structures of the

muscle - muscular metabolism - the modifications of the muscular tissue

in relationship with the stimulus: immobilization in elongated position or

in shortened position, electrostimulation, voluntary contraction, training

of the specific task the methodology of the training will cover: - type of

muscular contraction and their characteristics - theory of the training:

objectives and optimal stimulus to achieve it - methodological basis for the resistance training - methodological basis for the power training - stretching and muscular modifications in length - recover strategies - relationships between alignment and muscular activity - the physiologic movement - recruitment schemes of a selection of elementary movements - the break test for the muscular evaluation based on a defined grading - basic muscular dysfunction: weakness, stiffness, shortness and long muscle

## **Prerequisites**

## **Teaching form**

Lessons in attendance

## **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**

## **Office hours**

By appointment

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING

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