UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Special Kinesiology

2526-1-I0201D129-I0201D107M

Aims

A the end of the course, students will know the correct terminology for the biomechanical description of human movement, and will be able to distinguish the different possible interactions amongst joint heads. In addition, students will be able to apply basic principles of biomechanics to formally describe human movement.

Contents

Introduction to the analysis of human movement through the principles of mechanics (position, velocity, acceleration, force, and torque). Introduction to the kinematic and kinetic of human movement. Introduction to the biomechanical structures involved in movement.

Detailed program

Biomechanical principles
Coordinate systems
Degrees of freedom
Kinematics and kinetics

Terminology in kinesiology
Anatomical planes and axes of rotation
Forces, torques and musculoskeletal levers
Arthrokinematics and Osteokinematics

Joints

Classification: movement potential and mechanical analogy
Periarticular tissues

Muscles
Morphology, architecture and muscle physiology
Force-length and force-velocity relationships

Prerequisites

Physics and principles of anatomy

Teaching form

Standard teaching in presence: topics are discussed by the teacher in the classroom
Integrated teaching in presence: students will perform exercises and presentations to deepen the topics proposed by the teacher.

Textbook and teaching resource

Handouts

Kinesiology of the Musculoskeletal System Foundations for Rehabilitation di: Donald A. Neumann Editore: Mosby Edizione: 3 Data pubblicazione: 2016

I muscoli Funzioni e test con postura e dolore di: E. Kendall McCreary,F. Kendall Editore: Verduci Edizione: 5 Data pubblicazione: 2005

Semester

First semester

Assessment method

According to the course's syllabus (Multiple choice questions, open questions)

Office hours

By appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY